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This document lists experimental references added to Nuclear Science References (NSR) during the period January 1, 2010 to December 31, 2010. The first section lists keynumbers and keywords sorted by mass and nuclide. The second section lists all references, ordered by keynumber.

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## Keynumbers and Keywords

## A=1

$^1\text{n}$	2009COZW	NUCLEAR REACTIONS $^2\text{H}(\text{n}, \text{np})$ , E=16-19 MeV; measured Ep, Ip, En, In, pn-coin.; deduced $\sigma(\theta_1, \theta_2)$ . Comparison with other data and Bonn-B potential calculations. REPT TUNL-XLVIII,P57,Couture
	2009ST27	NUCLEAR REACTIONS $^1\text{H}(\text{polarized d}, 2\text{p})$ , E=130 MeV; measured proton spectra, charged-particle spectra, proton(charged-particle)-coin for several polarization states; deduced tensor analyzing powers. Comparison with various models. JOUR ZAANE 42 13
	2010AB05	NUCLEAR REACTIONS C, N, O( $\mu$ , X) $^1\text{n}$ / $^6\text{He}$ / $^8\text{He}$ / $^8\text{Li}$ / $^9\text{Li}$ / $^7\text{Be}$ / $^{10}\text{Be}$ / $^{11}\text{Be}$ / $^8\text{B}$ / $^{10}\text{B}$ / $^{12}\text{B}$ / $^{13}\text{B}$ / $^9\text{C}$ / $^{10}\text{C}$ / $^{11}\text{C}$ / $^{12}\text{N}$ / $^{13}\text{N}$ / $^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
	2010C003	RADIOACTIVITY $^1\text{n}(\beta^-)$ ; measured E $\gamma$ , Ep, E(e), pe $\gamma$ -coin; deduced branching ratio for radiative decay (inner bremsstrahlung) of neutron in 15-340 keV photon energy range. Monte-Carlo simulations of the spectra. Comparison with theoretical predictions. JOUR PRVCA 81 035503
	2010DY01	NUCLEAR REACTIONS $^2\text{H}(\text{p}, 2\text{p})$ , E=0.5-2 GeV; measured angular distribution, acceptances, $\sigma$ and $\sigma(\theta)$ ; deduced missing mass distributions and momentum correlations. Comparison with Migdal-Watson method, DWBA calculations, CD-Bonn NN potential, and one-pion exchange (OPE) model. JOUR PRVCA 81 044001
	2010FE08	NUCLEAR MOMENTS $^1\text{n}$ ; measured En, In, neutron beam polarization; deduced polarization tensor components, neutron electric dipole moment. JOUR PYLBB 694 22
	2010LA11	NUCLEAR REACTIONS $^2\text{H}(^{11}\text{B}, \alpha^8\text{Be})$ , E=27 MeV; $^2\text{H}(^{10}\text{B}, \alpha^7\text{Be})$ , E=24.4 MeV; measured E $\alpha$ , I $\alpha(\theta)$ , E(particle), I(particle). $^{11}\text{B}(\text{p}, \alpha)$ , E(cm)=0-0.6 MeV; $^{10}\text{B}(\text{p}, \alpha)$ , E(cm)=0-0.15 MeV; deduced S-factor using Trojan Horse Method. JOUR NUPAB 834 655c
	2010LI38	NUCLEAR REACTIONS $^2\text{H}(^6\text{He}, ^7\text{Li})$ , E not given; $^{12}\text{C}(^7\text{Li}, ^6\text{He})$ , E=44.0 MeV; measured $\sigma(\theta)$ ; deduced $^{12}\text{C}(\text{p}, \gamma)$ S-factor; calculated S-factor using DWBA and asymptotic normalization coefficient. Comparison with other data. JOUR NUPAB 834 661c
	2010MA23	NUCLEAR REACTIONS $^2\text{H}(\text{polarized p}, 2\text{p})$ , E=190 MeV; measured Ep, Ip, angular correlations, analyzing powers using BINA detector; analyzed analyzing powers for competing channels with Faddeev model. Comparison of two- and three-nucleon potentials. JOUR PYLBB 687 149
	2010PI07	RADIOACTIVITY $^1\text{NN}(\beta^-)$ ; measured ultra cold neutron density; deduced neutron lifetime, $T_{1/2}$ . Comparison with other experimental results. JOUR PYLBB 693 221
	2010P0ZZ	NUCLEAR REACTIONS $^3\text{H}(\alpha, 2\text{t})$ , ( $\alpha, \text{t}^3\text{He}$ ), ( $\alpha, \text{dt}$ ), E=76.2 Mev; measured tt-, $\text{t}^3\text{He}$ -, td-coin. $^4\text{He}$ ; deduced levels, $\Gamma$ . CONF St.-Petersburg,P137,Povoroznyk

KEYNUMBERS AND KEYWORDS

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A=1 (*continued*)

- 2010QI02 NUCLEAR REACTIONS  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{27}\text{Al}$ ,  $^{63}\text{Cu}$ ,  $^{197}\text{Au}(e, e'\pi^+)$ ,  $E < 5.8$  GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus  $Q^2$ . JOUR PRVCA 81 055209
- 2010SA25 NUCLEAR REACTIONS  $^1\text{H}(^{17}\text{C}, ^{17}\text{C}')$ ,  $(^{19}\text{C}, ^{19}\text{C}')$ ,  $E=70$  MeV / nucleon; measured  $E_p$ ,  $I_p$ , fragment-spectra; deduced levels,  $J$ ,  $\pi$ ,  $\sigma(\theta)$ ; calculated levels,  $J$ ,  $\pi$  using shell model with different forces,  $\sigma(\theta)$  using DWBA with WBT shell model wave function.  $^1\text{H}(^{14}\text{Be}, ^{14}\text{B})$ ,  $E=70$  MeV / nucleon; measured  $E\beta$ ,  $I\beta$ , fragment-spectra; deduced low-lying levels,  $J$ ,  $\pi$ ; calculated levels,  $J$ ,  $\pi$  using shell model,  $\beta$ -decay strength  $B(\text{GT})$ . Secondary radioactive beams. Inverse kinematics. JOUR NUPAB 834 404c
- 2010SE06 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ ,  $E=41$  MeV;  $^1\text{H}(^{17}\text{O}, \alpha)$ ,  $E=41$  MeV; measured reaction products; deduced neutron momentum distribution,  $\sigma(\theta, E)$ ,  $\sigma$ , resonances. Trojan Horse Method. JOUR NIFBA 125 457
- 2010SE11 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ ,  $E=41$  MeV; measured  $\sigma$ ,  $\sigma(\theta)$ .  $^{17}\text{O}(p, \alpha)$ ,  $E=0-0.7$  MeV; deduced  $\sigma(\theta)$ .  $^{18}\text{F}$ ; deduced levels using Trojan Horse Method. JOUR NUPAB 834 676c
- 2010SE13 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ ,  $E=41$  MeV; measured  $^{14}\text{N}$  spectrum,  $\sigma(\theta)$ , momentum distribution and differential  $\sigma$  for resonances above the  $^{18}\text{F}$  proton threshold.  $^{18}\text{F}$ ; deduced resonances and levels. Comparison of experimental momentum distribution with plane-wave impulse approximation (PWIA) and distorted-wave Born approximation (DWBA) calculations.  $^{17}\text{O}(p, \alpha)^{14}\text{N}$ ; deduced reaction rates of astrophysical relevance. JOUR PRVCA 82 032801
- 2010ST08 NUCLEAR REACTIONS  $^1\text{H}(\text{polarized } d, 2p)$ ,  $E=130$  MeV; measured proton and deuteron spectra, vector and tensor analyzing powers; deduced asymmetry distributions. Vector- and tensor-polarized deuteron beam. Comparison with coupled-channels calculations and with Chiral perturbed theory. JOUR PRVCA 82 014003
- 2010WA18 NUCLEAR REACTIONS  $^2\text{H}(^{12}\text{C}, ^{13}\text{N})$ ,  $(^{16}\text{O}, ^{17}\text{F})$ ,  $E$  not given;  $^1\text{H}(^{13}\text{N}, ^{13}\text{N})$ ,  $(^{17}\text{F}, ^{17}\text{F})$ ,  $E=47.8$  MeV; measured reaction products, proton spectrum;  $^{14}\text{O}$ ,  $^{18}\text{Ne}$ ; deduced resonance parameters,  $J$ ,  $\pi$ ,  $\sigma(\theta)$ ; R-matrix analysis. JOUR NUPAB 834 100c
- $^1\text{H}$  2008LAZU NUCLEAR REACTIONS  $^2\text{H}(n, 2n)$ ,  $E=5.6, 5.8, 6.3, 6.8, 9.3, 20.2, 21.2, 21.8, 22.4, 23.1, 24.6$  MeV; measured  $E_n$ ,  $I_n$ , p-2n-coin.; deduced  $\sigma$ ; calculated  $\sigma$ . Compared to ENDF / B-VII, CENDL-2. CARMEN  $4\pi$  neutron detector. CONF Nice (Nucl Data for Sci and Technol) Proc,P437
- 2008MEZW NUCLEAR REACTIONS  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(n, n)$ ,  $E \approx 95$  MeV;  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(n, n')$ ,  $E \approx 95$  MeV; measured  $E_n$ ,  $I_n(\theta)$ ,  $E_p$ ,  $I_p(\theta)$ ,  $E_d$ ,  $I_d(\theta)$ ; deduced  $d\sigma(E)$ ,  $d\sigma(\theta)$ ; calculated  $d\sigma$  using different forces with and without 3N component. Compared to other data and calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P1039
- 2008MIZJ NUCLEAR REACTIONS  $^1\text{H}(^7\text{Be}, ^7\text{Be})$ ,  $(^7\text{Be}, ^7\text{Be}')$ ,  $E=17.7, 21.7, 26.3, 20$  MeV; measured  $E_p$ ,  $I_p$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ , (particle)p-coin using thick and thin targets; deduced  $\sigma$ ,  $\sigma(\theta)$ . Results on CD only. CONF E.Lansing (NS2008),P143,Mitchell

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**A=1 (continued)**

- 2008SAZG NUCLEAR REACTIONS  $^1\text{H}(^8\text{He}, ^8\text{He})$ ,  $E=71$  MeV / nucleon;  $^1\text{H}(^6\text{He}, ^6\text{He})$ ,  $E=71$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$  using polarized target; deduced  $d\sigma$ , analyzing powers, optical model parameters, proton radius; calculated  $d\sigma$ , analyzing powers. Results compared to  $p+^6\text{Li}$  reaction at 72 MeV / nucleon. REPT CNS-REP-61,P3,Sakaguchi
- 2008S020 ATOMIC MASSES  $^1\text{H}^2$ ; measured cyclotron frequency ratios; derived masses of  $^2\text{H}^+$  and proton. Penning trap mass spectrometer Smiletrap. JOUR PLRAA 78 012514
- 2008URZY NUCLEAR REACTIONS  $^1\text{H}(^{12}\text{C}, ^{12}\text{C}')$ ,  $E=38$  MeV polarized target; measured analyzing power. Results on CD only. CONF E.Lansing (NS2008),P188,Urrego-Blanco
- 2008YAZP NUCLEAR REACTIONS  $^1\text{H}(^7\text{Be}, ^7\text{Be})$ ,  $E(\text{cm})\approx 1.5-6.5$  MeV;  $^1\text{H}(^7\text{Be}, ^7\text{Be}')$ ,  $E(\text{cm})\approx 1.5-6.5$  MeV; measured reaction products using thick-target method; deduced  $\sigma(\theta)$ ,  $^8\text{B}$  resonance parameters; calculated  $d\sigma(E, \theta)$  using R-matrix. REPT CNS-REP-61,P7,Yamaguchi
- 2009MOZW NUCLEAR REACTIONS  $^1\text{H}(n, n')$ ,  $E=100$  eV-15 keV;  $^{12}\text{C}(n, n')$ ,  $E=64-15$  keV; measured  $E_n$ ,  $I_n$ ,  $\theta(n)$ ; deduced  $(^{12}\text{C} \text{H}_2) / ^{12}\text{C}$  intensity ratio.  $^1\text{H}$  in the  $\text{CH}_2$  compound;  $^{12}\text{C}$  both as an element compound and in the form of  $\text{CH}_2$  compound. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P102,Moreh
- 2009SUZW NUCLEAR REACTIONS  $^1\text{H}(^{58}\text{Ti}, ^{58}\text{Ti}')$ ,  $E=40$  MeV / nucleon; measured  $A(\text{particle})$ ,  $Z(\text{particle})$ ,  $E\gamma$ ,  $I\gamma$ ,  $(\text{particle})\gamma$ -coin; deduced  $E(2^+)$ . Compared to other Ti and Cr isotopes. REPT RIKEN 2008 Annual,P8,Suzuki
- 2009TAZW NUCLEAR REACTIONS  $^1\text{H}(^{32}\text{Mg}, ^{32}\text{Mg}')$ ,  $E=46.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced  $\sigma(E, \theta)$ , transferred angular momentum; calculated  $\sigma(E, \theta)$  using ECIS97 with KD02 potential. REPT RIKEN 2008 Annual,P6,Takeuchi
- 2010A001 NUCLEAR REACTIONS  $^1\text{H}(^{74}\text{Ni}, ^{74}\text{Ni}')$ ,  $E=81$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ;  $^{74}\text{Ni}$ ; deduced  $J$ ,  $\pi$ , level energy,  $\sigma$ , deformation length and parameter. JOUR PYLBB 692 302
- 2010BE29 NUCLEAR REACTIONS  $\text{Fe}, \text{Bi}(n, xp)$ ,  $(n, xd)$ ,  $(n, xt)^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He}$ ,  $E=175$  MeV; measured reaction products; deduced  $\sigma(\theta)$ . Comparison with TALYS model code. JOUR RMEAE 45 1145
- 2010B007 NUCLEAR REACTIONS  $^1\text{H}(n, n)$ ,  $E=14.9$  MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma$ ,  $\sigma(\theta)$ . Comparison with predictions of phase-shift analysis and the ENDF / B-VII.0 evaluation. JOUR PRVCA 82 014001
- 2010CH29 NUCLEAR REACTIONS  $^{93}\text{Nb}(^{12}\text{C}, X)^1\text{H} / ^4\text{He}$ ,  $E=37.5, 40, 45, 45.5$  MeV;  $^{89}\text{Y}(^{12}\text{C}, X)$ ,  $(^{16}\text{O}, X)^1\text{H}$ ,  $E=40, 51, 54$  MeV; measured proton spectra,  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma$ ,  $\sigma(E)$ , nuclear level density. JOUR PRAMC 75 115
- 2010CH38 NUCLEAR REACTIONS  $^1\text{H}(^{25}\text{Al}, ^{25}\text{Al})$ ,  $E\approx 3.4$  MeV / nucleon; measured  $\sigma(\theta)$ .  $^1\text{H}(^{27}\text{Si}, ^{26}\text{Si})$ ,  $E=89$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $(\text{particle})\gamma$ -coin.  $^{26}\text{Si}$  deduced levels,  $J$ ,  $\pi$ , resonance parameteres using R-matrix fit. JOUR NUPAB 834 667c

A=1 (*continued*)

- 2010C003 RADIOACTIVITY  $^1\text{n}(\beta^-)$ ; measured  $E_\gamma$ ,  $E_p$ ,  $E(e)$ ,  $p\gamma$ -coin; deduced branching ratio for radiative decay (inner bremsstrahlung) of neutron in 15-340 keV photon energy range. Monte-Carlo simulations of the spectra. Comparison with theoretical predictions. JOUR PRVCA 81 035503
- 2010EL05 NUCLEAR REACTIONS  $^1\text{H}(^{21}\text{N}, ^{21}\text{N}')$ ,  $(^{21}\text{N}, \text{X})$ ,  $E=52.0$  MeV;  $^{208}\text{Pb}(^{21}\text{N}, ^{21}\text{N}')$ ,  $(^{21}\text{N}, \text{X})$ ,  $E=48.1$  MeV, [secondary  $^{21}\text{N}$  beam from  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})$ ,  $E=63$  MeV / nucleon primary reaction]; measured particle spectra,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, cross sections.  $^{19,21}\text{N}$ ; deduced levels,  $B(E2)$ . GEANT4 simulation of  $\gamma$ -ray spectra. JOUR PRVCA 82 027305
- 2010FA09 NUCLEAR REACTIONS  $^1\text{H}(^6\text{He}, ^6\text{He})$ ,  $E=82.3$  MeV / nucleon; measured reaction products.  $^6\text{He}$ ; deduced  $\sigma(\theta)$ . Comparison with optical model CH89 or KD02 global potentials. JOUR CPLEE 27 092501
- 2010G016 NUCLEAR REACTIONS  $^1\text{H}(^{13}\text{O}, \text{X})^{14}\text{F}$ ,  $E=31$  MeV / nucleon;  $^1\text{H}(^{14}\text{O}, ^{14}\text{O})$ ,  $E=154$  MeV; measured reaction products, proton spectra; deduced  $\sigma(\theta)$ ,  $J$ ,  $\pi$ , level scheme, resonances. Comparison with shell model calculations. JOUR PYLBB 692 307
- 2010GU17 NUCLEAR REACTIONS  $^2\text{H}(^6\text{Li}, \alpha)$ ,  $E=14, 17$  MeV; measured reaction products; deduced  $\sigma$  for  $^6\text{Li}(n, \alpha)$  reaction. JOUR JPGPE 37 125105
- 2010KA24 NUCLEAR REACTIONS  $^2\text{H}(^{11}\text{Be}, ^{12}\text{Be})$ ,  $E=5$  MeV / nucleon; measured  $E_p$ ,  $I_p(\theta)$ , (particle)p-coin; deduced  $\sigma(\theta)$  to isolated states, spectroscopic factor.  $^{12}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{12}\text{C}(^{24}\text{O}, ^{23}\text{O})$ ,  $E=920$  MeV / nucleon; measured momentum distribution, spectroscopic factor. Comparison with systematics. Secondary radioactive beams. JOUR NUPAB 834 505c
- 2010MI12 NUCLEAR REACTIONS  $^1\text{H}(^7\text{Be}, ^7\text{Be})$ ,  $(^7\text{Be}, ^7\text{Be}')$ ,  $E=18.5, 22.0$  MeV, [secondary  $^7\text{Be}$  beam from primary  $^1\text{H}(^7\text{Li}, ^7\text{Be})$  reaction]; measured recoil proton and  $^7\text{Be}$  spectra, (proton)( $^7\text{Be}$ )-coin, excitation functions and angular distributions.  $^8\text{B}$ ; deduced levels,  $J$ ,  $\pi$ , partial proton widths and total widths. R-matrix and time-dependent continuum shell model (TDSCM) analysis. Comparison with low-lying level structure of mirror nucleus  $^8\text{Li}$ . JOUR PRVCA 82 011601
- 2010PI07 RADIOACTIVITY  $^1\text{NN}(\beta^-)$ ; measured ultra cold neutron density; deduced neutron lifetime,  $T_{1/2}$ . Comparison with other experimental results. JOUR PYLBB 693 221
- 2010POZZ NUCLEAR REACTIONS  $^3\text{H}(\alpha, 2t)$ ,  $(\alpha, t^3\text{He})$ ,  $(\alpha, dt)$ ,  $E=76.2$  MeV; measured  $tt^-$ ,  $t^3\text{He}^-$ ,  $td$ -coin.  $^4\text{He}$ ; deduced levels,  $\Gamma$ . CONF St.-Petersburg,P137,Povoroznyk
- 2010SA25 NUCLEAR REACTIONS  $^1\text{H}(^{17}\text{C}, ^{17}\text{C}')$ ,  $(^{19}\text{C}, ^{19}\text{C}')$ ,  $E=70$  MeV / nucleon; measured  $E_p$ ,  $I_p$ , fragment-spectra; deduced levels,  $J$ ,  $\pi$ ,  $\sigma(\theta)$ ; calculated levels,  $J$ ,  $\pi$  using shell model with different forces,  $\sigma(\theta)$  using DWBA with WBT shell model wave function.  $^1\text{H}(^{14}\text{Be}, ^{14}\text{B})$ ,  $E=70$  MeV / nucleon; measured  $E_\beta$ ,  $I_\beta$ , fragment-spectra; deduced low-lying levels,  $J$ ,  $\pi$ ; calculated levels,  $J$ ,  $\pi$  using shell model,  $\beta$ -decay strength  $B(\text{GT})$ . Secondary radioactive beams. Inverse kinematics. JOUR NUPAB 834 404c

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KEYNUMBERS AND KEYWORDS

**A=1 (continued)**

- 2010SC17 NUCLEAR REACTIONS  $^1\text{H}(\gamma, \pi^0)$ ,  $(\gamma, \pi^0\gamma)$ , E=208-820 MeV; measured particle spectra, invariant mass and missing mass spectra,  $\sigma$ ,  $\sigma(\theta)$ . Comparison with data and models. Energy-tagged photon beam. JOUR ZAANE 43 269
- 2010TA04 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{C}, ^{19}\text{C}')$ ,  $(^{20}\text{C}, ^{20}\text{C}')$ ,  $(^{22}\text{C}, ^{22}\text{C}')$ , E=40 MeV / nucleon; measured reaction products;  $^{19,20,22}\text{C}$ ; deduced  $\sigma$ , rms matter radii, neutron halo. Secondary beams from  $^{40}\text{Ar}$  fragmentation. JOUR PRLTA 104 062701
- 2010TI06 NUCLEAR REACTIONS  $\text{C}(\text{n}, \text{pX})$ ,  $(\text{n}, \text{dX})$ ,  $(\text{n}, \text{tX})$ ,  $(\text{n}, ^3\text{HeX})$ ,  $(\text{n}, \alpha\text{X})$ ,  $^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He}$ , E=96 MeV; measured neutron time of flight, reaction products; deduced  $\sigma(\theta, \text{E})$ ,  $\sigma(\text{E})$ ,  $\sigma$ . Comparison with GNASH and TALYS calculations. JOUR RMEAE 45 1134
- 2010UE01 NUCLEAR REACTIONS  $^1\text{H}(^6\text{He}, ^6\text{He})$ , E=71 MeV / nucleon; measured  $\sigma(\theta)$ , vector analyzing power, polarized proton solid target. Comparison with t-matrix and g-matrix microscopic folding calculations. Discussed  $\alpha$ -core distribution in  $^6\text{He}$ . JOUR PRVCA 82 021602
- 2010WA18 NUCLEAR REACTIONS  $^2\text{H}(^{12}\text{C}, ^{13}\text{N})$ ,  $(^{16}\text{O}, ^{17}\text{F})$ , E not given;  $^1\text{H}(^{13}\text{N}, ^{13}\text{N})$ ,  $(^{17}\text{F}, ^{17}\text{F})$ , E=47.8 MeV; measured reaction products, proton spectrum;  $^{14}\text{O}$ ,  $^{18}\text{Ne}$ ; deduced resonance parameters, J,  $\pi$ ,  $\sigma(\theta)$ ; R-matrix analysis. JOUR NUPAB 834 100c

**A=2**

- $^2\text{n}$  2010BE10 NUCLEAR REACTIONS  $^3\text{H}(\text{d}, ^3\text{He})$ , E=36.9 MeV; measured reaction products; deduced  $\sigma(\theta)$ ,  $\sigma(\theta, \text{E})$ , inclusive spectra. JOUR BRSPPE 74 453
- 2010K025 NUCLEAR REACTIONS  $^2\text{H}(\text{n}, \text{p})$ , E=40-60 MeV; measured neutron TOF,  $\text{E}_\text{n}$ ,  $\text{I}_\text{n}$ , proton spectra; deduced yields, neutron-neutron scattering length. JOUR PANUE 73 1302
- 2010QI02 NUCLEAR REACTIONS  $^{1,2}\text{H}$ ,  $^{12}\text{C}$ ,  $^{27}\text{Al}$ ,  $^{63}\text{Cu}$ ,  $^{197}\text{Au}(\text{e}, \text{e}'\pi^+)$ , E<5.8 GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus  $Q^2$ . JOUR PRVCA 81 055209
- 2010SI08 NUCLEAR REACTIONS  $^4\text{He}(^6\text{He}, 2\alpha)$ ,  $(^6\text{He}, \alpha\text{t})$ , E=25 MeV / nucleon; measured reaction products; deduced momentum correlations for quasi-free scattering,  $\sigma$ , cluster structures. JOUR BRSPPE 74 437
- 2010SI23 NUCLEAR REACTIONS  $^4\text{He}(^6\text{He}, 2\alpha)$ , E=25 MeV / nucleon; measured  $\text{E}_\alpha$ ,  $\text{I}_\alpha$ ,  $\alpha\alpha$ -coin; deduced  $\sigma$ ,  $\sigma(\theta)$ , neutron momentum spectrum and reaction mechanism features. Monte-Carlo simulation and PWIA of quasi-free scattering. Secondary radioactive beam. JOUR NUPAB 840 1
- $^2\text{H}$  2008MEZW NUCLEAR REACTIONS  $^{1,2}\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(\text{n}, \text{n})$ , E $\approx$ 95 MeV;  $^{1,2}\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(\text{n}, \text{n}')$ , E $\approx$ 95 MeV; measured  $\text{E}_\text{n}$ ,  $\text{I}_\text{n}(\theta)$ ,  $\text{E}_\text{p}$ ,  $\text{I}_\text{p}(\theta)$ ,  $\text{E}_\text{d}$ ,  $\text{I}_\text{d}(\theta)$ ; deduced  $\text{d}\sigma(\text{E})$ ,  $\text{d}\sigma(\theta)$ ; calculated  $\text{d}\sigma$  using different forces with and without 3N component. Compared to other data and calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P1039

**A=2** (*continued*)

- 2008SHZM NUCLEAR REACTIONS  ${}^3\text{He}(p, 2p)$ ,  $E=392$  MeV; measured  $E_p$ ,  $I_p(\theta)$  using polarized beam on polarized target; deduced spin correlation, analyzing power, momentum distribution of  ${}^3\text{He}$  proton polarization. REPT CNS-REP-61,P1,Shimizu
- 2008S020 ATOMIC MASSES  ${}^1,2\text{H}$ ; measured cyclotron frequency ratios; derived masses of  ${}^2\text{H}^+$  and proton. Penning trap mass spectrometer Smiletrap. JOUR PLRAA 78 012514
- 2009KOZT NUCLEAR REACTIONS  ${}^1\text{H}({}^{18}\text{C}, {}^{17}\text{C})$ ,  $E=81$  MeV / nucleon;  ${}^1\text{H}({}^{19}\text{C}, {}^{18}\text{C})$ ,  $E=68$  MeV / nucleon; measured  $A(\text{particle})$ ,  $Z(\text{particle})$ ,  $E_\gamma$ ,  $I_\gamma$ , (particle) $\gamma$ -coin; deduced  $\sigma(E)$ ; calculated  $\sigma(E, J, \pi)$  using CDCC with shell-model spectroscopic factors with WBP interaction. REPT RIKEN 2008 Annual,P7,Kondo
- 2009R029 NUCLEAR REACTIONS  ${}^{12}\text{C}({}^8\text{He}, {}^7\text{H})$ ,  $E=15.4$  MeV / nucleon; measured  $E_t$ ,  $I_t$ , recoil spectra, (recoil)(triton)-coin; deduced correlations.  ${}^2\text{H}({}^{56}\text{Ni}, {}^{56}\text{Ni}')$ ,  $E=50$  MeV / nucleon; measured recoiling  $E_d$ ,  $I_d$ .  ${}^{56}\text{Ni}$ ; deduced isoscaler giant monopole and giant quadrupole resonance parameters.  ${}^1\text{H}({}^{11}\text{Li}, {}^9\text{Li})$ ,  $E=33$  MeV; measured  $E_t$ ,  $I_t$ , recoil spectra; deduced  $\sigma(\theta)$ , configurations. MAYA active target and SPIRAL radioactive beam facility at GANIL. JOUR ZAANE 42 447
- 2009TOZV NUCLEAR REACTIONS  ${}^3\text{He}(\gamma, p)$ ,  $E=8.78-12.78$  MeV; measured  $\sigma$ ; calculated  $\sigma$ . Comparison with published calculations and other data. REPT TUNL-XLVIII,P85,Tornow
- 2010BE29 NUCLEAR REACTIONS  $\text{Fe}, \text{Bi}(n, xp)$ ,  $(n, xd)$ ,  $(n, xt){}^1\text{H} / {}^2\text{H} / {}^3\text{H} / {}^3\text{He} / {}^4\text{He}$ ,  $E=175$  MeV; measured reaction products; deduced  $\sigma(\theta)$ . Comparison with TALYS model code. JOUR RMEAE 45 1145
- 2010CH38 NUCLEAR REACTIONS  ${}^1\text{H}({}^{25}\text{Al}, {}^{25}\text{Al})$ ,  $E\approx 3.4$  MeV / nucleon; measured  $\sigma(\theta)$ .  ${}^1\text{H}({}^{27}\text{Si}, {}^{26}\text{Si})$ ,  $E=89$  MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ , (particle) $\gamma$ -coin.  ${}^{26}\text{Si}$  deduced levels,  $J$ ,  $\pi$ , resonance parameteres using R-matrix fit. JOUR NUPAB 834 667c
- 2010HA21 NUCLEAR REACTIONS  ${}^2\text{H}(\gamma, 2p\pi^-)$ ,  $(\gamma, \pi^+\pi^-)$ ,  $E=0.8-1.1$  GeV; measured  $\sigma$ ,  $\Delta^{++}\Delta^-$  production. JOUR NUPAB 834 596c
- 2010IL02 NUCLEAR REACTIONS  ${}^2\text{H}(\gamma, \pi^0)$ ,  $E\approx 0.55-1.15$  GeV; measured  $\sigma(\theta)$ ; deduced resonance features. Comparison with model calculations. JOUR ZAANE 43 261
- 2010LA05 NUCLEAR REACTIONS  ${}^2\text{H}, {}^{16}\text{O}(n, n)$ ,  $E=\text{ultracold}$ ; measured  $\sigma$ ,  $\gamma$ -spectra, Bragg reflection spectra, low-temperature dependence on yield of ultracold neutrons. Liquid orthodeuterium and solid oxygen targets. Pulse-neutron incident beam. JOUR PRVCA 82 015502
- 2010LAZZ NUCLEAR REACTIONS  ${}^1\text{H}({}^8\text{He}, {}^6\text{He})$ ,  $E=15.4, 15.6$  Mev / nucleon;  ${}^1\text{H}({}^8\text{He}, {}^7\text{He})$ ,  $E=15.4, 15.6$  Mev / nucleon; measured reaction products; deduced  $d\sigma(e)$ ,  $d\sigma(\theta)$ ,  ${}^6\text{He}$   $E, J, \pi$ , resonances; calculated  $E, J, \pi, d\sigma(\theta)$  using ab-initio / realistic interactions within GFMC (Green Function Monte Carlo), NCSM (No-Core Shell Model), CC and other models. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.2,P345
- 2010POZZ NUCLEAR REACTIONS  ${}^3\text{H}(\alpha, 2t)$ ,  $(\alpha, t{}^3\text{He})$ ,  $(\alpha, dt)$ ,  $E=76.2$  Mev; measured  $tt^-$ ,  $t{}^3\text{He}^-$ ,  $td$ -coin.  ${}^4\text{He}$ ; deduced levels,  $\Gamma$ . CONF St.-Petersburg,P137,Povoroznyk

**A=2 (continued)**

- 2010TI06 NUCLEAR REACTIONS C(n, pX), (n, dX), (n, tX), (n,  $^3\text{HeX}$ ), (n,  $\alpha\text{X}$ ) $^1\text{H}$  /  $^2\text{H}$  /  $^3\text{H}$  /  $^3\text{He}$  /  $^4\text{He}$ , E=96 MeV; measured neutron time of flight, reaction products; deduced  $\sigma(\theta, E)$ ,  $\sigma(E)$ ,  $\sigma$ . Comparison with GNASH and TALYS calculations. JOUR RMEAE 45 1134
- 2010WE01 NUCLEAR REACTIONS  $^2\text{H}$ (polarized n, n), E(n)=19.0 MeV; measured analyzing powers; Monte Carlo simulation. Polarized neutrons produced in  $^2\text{H}$ (polarized d, n) $^3\text{He}$  reaction and neutron polarization measured in  $^4\text{He}$ (polarized n, n) reaction. Comparison with a three-body Faddeev calculation. JOUR PRVCA 81 024003
- $^2\text{He}$  2009GAZV NUCLEAR REACTIONS  $^3\text{He}(\gamma, n)$ , E=11.4 MeV; measured En, In( $\theta$ ) using polarized  $\gamma$  and target; deduced asymmetry. Compared with calculations by others. REPT TUNL-XLVIII,P81,Gao
- 2009PEZX NUCLEAR REACTIONS  $^3\text{He}(\gamma, n)$ , E=12.8, 13.5, 14.7 MeV; measured En, In( $\theta=90^\circ$ ); deduced  $\sigma(E, \theta)$ . Compared with simulations and calculations. REPT TUNL-XLVIII,P83,Perdue

**A=3**

- $^3\text{H}$  2008OTZY NUCLEAR REACTIONS  $^4\text{He}(^{12}\text{Be}, ^{13}\text{B})$ , E=50 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ , E(particle), I(particle,  $\theta$ ); deduced  $d\sigma(\theta)$ , 4.83 MeV proton intruder state deformation, J,  $\pi$  as  $(1/2)^+$ ; calculated  $^{13}\text{B}$  spectroscopic factor with deformed mean field provided by  $^{12}\text{Be}$  core. Results on CD only. CONF E.Lansing (NS2008),P46,Ota
- 2009DEZT NUCLEAR REACTIONS  $^6\text{Li}(n, \alpha)$ , E=0.18-12 MeV; measured  $E_\alpha$ ,  $I_\alpha$ ,  $\theta(\alpha)$  using LANSCE / WNR; deduced  $\sigma$ ,  $d\sigma$ ; calculated  $\sigma$  using R-matrix. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P215,Devlin
- 2009R029 NUCLEAR REACTIONS  $^{12}\text{C}(^8\text{He}, ^7\text{H})$ , E=15.4 MeV / nucleon; measured Et, It, recoil spectra, (recoil)(triton)-coin; deduced correlations.  $^2\text{H}(^{56}\text{Ni}, ^{56}\text{Ni}')$ , E=50 MeV / nucleon; measured recoiling Ed, Id.  $^{56}\text{Ni}$ ; deduced isoscaler giant monopole and giant quadrupole resonance parameters.  $^1\text{H}(^{11}\text{Li}, ^9\text{Li})$ , E=33 MeV; measured Et, It, recoil spectra; deduced  $\sigma(\theta)$ , configurations. MAYA active target and SPIRAL radioactive beam facility at GANIL. JOUR ZAANE 42 447
- 2009VE12 NUCLEAR REACTIONS  $^6\text{Li}, ^{10}\text{B}$ (polarized n,  $\alpha$ ), E=low; measured parity-violating emission asymmetry coefficient with ultracold polarized neutrons; deduced weak neutral current constant. JOUR NUPAB 827 425c
- 2009ZH42 NUCLEAR REACTIONS  $^2\text{H}(d, \gamma)$ , (d, p), E=20 keV; measured  $E_\gamma$ ,  $I_\gamma$ , proton spectrum; deduced yields, branching ratio, S-factors. JOUR CPCHC 33 350
- 2010BE23 NUCLEAR REACTIONS  $^2\text{H}(^{20}\text{O}, ^{19}\text{O})$ , E=11 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ , E(particle), I(particle), (particle) $\gamma$ -coin.  $^{19}\text{O}$  deduced low-lying levels, J,  $\pi$ , spectroscopic factor.  $^1\text{H}(^{14}\text{O}, ^{12}\text{O})$ , E=51 MeV / nucleon; measured E(particle), I(particle), excitation energy spectra,  $\sigma(\theta)$ ; deduced levels, J,  $\pi$ ; calculated  $\sigma(\theta)$  using DWBA. MUST2, TIARA and EXOGAM detector arrays and VAMOS spectrometer. Secondary radioactive beams. JOUR NUPAB 834 446c



**A=3 (continued)**

- 2010BE29 NUCLEAR REACTIONS Fe, Bi(n, xp), (n, xd), (n, xt)<sup>1</sup>H / <sup>2</sup>H / <sup>3</sup>H / <sup>3</sup>He / <sup>4</sup>He, E=175 MeV; measured reaction products; deduced  $\sigma(\theta)$ . Comparison with TALYS model code. JOUR RMEAE 45 1145
- 2010CA22 NUCLEAR REACTIONS <sup>3</sup>H, <sup>4</sup>He(p, p), E=1.2-3.4 MeV; measured proton spectrum; deduced scattering  $\sigma(\theta)$  and its trends. JOUR NIMBE 268 3373
- 2010LAZZ NUCLEAR REACTIONS <sup>1</sup>H(<sup>8</sup>He, <sup>6</sup>He), E=15.4, 15.6 Mev / nucleon; <sup>1</sup>H(<sup>8</sup>He, <sup>7</sup>He), E=15.4, 15.6 Mev / nucleon; measured reaction products; deduced  $d\sigma(e)$ ,  $d\sigma(\theta)$ , <sup>6</sup>He E, J,  $\pi$ , resonances; calculated E, J,  $\pi$ ,  $d\sigma(\theta)$  using ab-initio / realistic interactions within GFMC (Green Function Monte Carlo), NCSM (No-Core Shell Model), CC and other models. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.2,P345
- 2010OT02 RADIOACTIVITY <sup>3</sup>H( $\beta^-$ ); measured Ie, Ee; deduced  $\beta$ -spectrum, neutrino mass. Troitsk, Mainz, KATRIN experiments. JOUR HYIND 196 3
- 2010SI08 NUCLEAR REACTIONS <sup>4</sup>He(<sup>6</sup>He, 2 $\alpha$ ), (<sup>6</sup>He,  $\alpha t$ ), E=25 MeV / nucleon; measured reaction products; deduced momentum correlations for quasi-free scattering,  $\sigma$ , cluster structures. JOUR BRSPE 74 437
- 2010TI06 NUCLEAR REACTIONS C(n, pX), (n, dX), (n, tX), (n, <sup>3</sup>HeX), (n,  $\alpha X$ )<sup>1</sup>H / <sup>2</sup>H / <sup>3</sup>H / <sup>3</sup>He / <sup>4</sup>He, E=96 MeV; measured neutron time of flight, reaction products; deduced  $\sigma(\theta, E)$ ,  $\sigma(E)$ ,  $\sigma$ . Comparison with GNASH and TALYS calculations. JOUR RMEAE 45 1134
- 2010YI01 NUCLEAR REACTIONS <sup>4</sup>He(K<sup>-</sup>, n), E at rest; measured En, In, (particle)(neutron)-coin; deduced upper limit for a strange tribaryon state. JOUR PYLBB 688 43
- <sup>3</sup>He 2010BE29 NUCLEAR REACTIONS Fe, Bi(n, xp), (n, xd), (n, xt)<sup>1</sup>H / <sup>2</sup>H / <sup>3</sup>H / <sup>3</sup>He / <sup>4</sup>He, E=175 MeV; measured reaction products; deduced  $\sigma(\theta)$ . Comparison with TALYS model code. JOUR RMEAE 45 1145
- 2010BY01 NUCLEAR REACTIONS <sup>2</sup>H(d, n), (p,  $\gamma$ ), E=2.3-6.2, 8.3-10.1 keV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , S-factors. JOUR BRSPE 74 531
- 2010DA18 NUCLEAR REACTIONS <sup>3</sup>He(polarized p, p), E=2-6 MeV; measured Ep, Ip, analyzing powers; deduced phase shifts, spin-correlation coefficients using polarized <sup>3</sup>He target. Comparison with theoretical calculations using realistic nucleon-nucleon potential models. JOUR PRVCA 82 034002
- 2010LI19 NUCLEAR REACTIONS <sup>2</sup>H(<sup>7</sup>Li, <sup>6</sup>He)n, E=46 MeV; measured reaction products; deduced  $\sigma(\theta)$ , proton spectroscopic factor of <sup>7</sup>Li ground state, optical potential parameters. Comparison with DWBA calculations. JOUR ZAANE 44 1
- 2010OT02 RADIOACTIVITY <sup>3</sup>H( $\beta^-$ ); measured Ie, Ee; deduced  $\beta$ -spectrum, neutrino mass. Troitsk, Mainz, KATRIN experiments. JOUR HYIND 196 3
- 2010TI06 NUCLEAR REACTIONS C(n, pX), (n, dX), (n, tX), (n, <sup>3</sup>HeX), (n,  $\alpha X$ )<sup>1</sup>H / <sup>2</sup>H / <sup>3</sup>H / <sup>3</sup>He / <sup>4</sup>He, E=96 MeV; measured neutron time of flight, reaction products; deduced  $\sigma(\theta, E)$ ,  $\sigma(E)$ ,  $\sigma$ . Comparison with GNASH and TALYS calculations. JOUR RMEAE 45 1134

A=4

<sup>4</sup> H	2010BE13	NUCLEAR REACTIONS <sup>3</sup> H(d, p), E=36.9 MeV; measured proton spectrum; deduced $\sigma(\theta)$ , $\sigma(\theta, E)$ . JOUR BRSPE 74 761
<sup>4</sup> He	2008DEZO	NUCLEAR REACTIONS <sup>6</sup> Li(n, t), E=0.2-10 MeV; measured $E\alpha$ , $I\alpha(\theta)$ , $E_t$ , $I_t(\theta)$ ; deduced $d\sigma(E, \theta)$ , $d\sigma(\theta)$ ; calculated $d\sigma(E, \theta)$ , $d\sigma(\theta)$ using R-matrix. Compared also to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1243
	2009J008	NUCLEAR REACTIONS <sup>4</sup> He( <sup>14</sup> C, <sup>14</sup> C), E=25 MeV; measured $\sigma(E, \theta)$ . <sup>18</sup> O; deduced levels, widths, J, $\pi$ using R-matrix analysis. JOUR ZAANE 42 135
	2009ZH42	NUCLEAR REACTIONS <sup>2</sup> H(d, $\gamma$ ), (d, p), E=20 keV; measured $E\gamma$ , $I\gamma$ , proton spectrum; deduced yields, branching ratio, S-factors. JOUR CPCHC 33 350
	2010BE29	NUCLEAR REACTIONS Fe, Bi(n, xp), (n, xd), (n, xt) <sup>1</sup> H / <sup>2</sup> H / <sup>3</sup> H / <sup>3</sup> He / <sup>4</sup> He, E=175 MeV; measured reaction products; deduced $\sigma(\theta)$ . Comparison with TALYS model code. JOUR RMEAE 45 1145
	2010CA22	NUCLEAR REACTIONS <sup>3</sup> H, <sup>4</sup> He(p, p), E=1.2-3.4 MeV; measured proton spectrum; deduced scattering $\sigma(\theta)$ and its trends. JOUR NIMBE 268 3373
	2010CH29	NUCLEAR REACTIONS <sup>93</sup> Nb( <sup>12</sup> C, X) <sup>1</sup> H / <sup>4</sup> He, E=37.5, 40, 45, 45.5 MeV; <sup>89</sup> Y( <sup>12</sup> C, X), ( <sup>16</sup> O, X) <sup>1</sup> H, E=40, 51, 54 MeV; measured proton spectra, $E\alpha$ , $I\alpha$ ; deduced $\sigma$ , $\sigma(E)$ , nuclear level density. JOUR PRAMC 75 115
	2010LI29	NUCLEAR REACTIONS <sup>1</sup> H( <sup>7</sup> Li, $\alpha$ ), E=0.34-1.05 MeV; measured $E\alpha$ , $I\alpha$ , thick target yields; deduced target properties, electron screening, enhancement factors. Comparison with other data and calculations. <sup>1</sup> H( <sup>7</sup> Li, $\alpha$ ), E=4.3 MeV; measured $E_p$ , $I_p$ ; deduced target <sup>1</sup> H concentration and associated properties. Elastic recoil detection analysis. Comparison with SIMNRA calculations. JOUR ZAANE 44 71
	2010MU04	NUCLEAR REACTIONS <sup>159</sup> Tb( <sup>10</sup> B, X), ( <sup>11</sup> B, X) <sup>4</sup> He, E=38-72 MeV; <sup>159</sup> Tb( <sup>6</sup> Li, X), ( <sup>7</sup> Li, X) <sup>4</sup> He, E=28-43 MeV; measured reaction products, evaporation residue $E\gamma$ , $I\gamma$ ; deduced fusion $\sigma$ , $\sigma(\theta)$ , $\alpha$ -yields. Comparison with CDCC calculations. JOUR PRAMC 75 99
	2010POZZ	NUCLEAR REACTIONS <sup>3</sup> H( $\alpha$ , 2t), ( $\alpha$ , t <sup>3</sup> He), ( $\alpha$ , dt), E=76.2 MeV; measured tt-, t <sup>3</sup> He-, td-coin. <sup>4</sup> He; deduced levels, $\Gamma$ . CONF St.-Petersburg,P137,Povoroznyk
	2010SE04	NUCLEAR REACTIONS C(d, d), <sup>3</sup> He(d, p), E=14.8 MeV; measured deuteron polarization; deduced acquired tensor polarization for deuteron beam. JOUR PRLTA 104 222501
	2010TI06	NUCLEAR REACTIONS C(n, pX), (n, dX), (n, tX), (n, <sup>3</sup> HeX), (n, $\alpha$ X) <sup>1</sup> H / <sup>2</sup> H / <sup>3</sup> H / <sup>3</sup> He / <sup>4</sup> He, E=96 MeV; measured neutron time of flight, reaction products; deduced $\sigma(\theta, E)$ , $\sigma(E)$ , $\sigma$ . Comparison with GNASH and TALYS calculations. JOUR RMEAE 45 1134

KEYNUMBERS AND KEYWORDS

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A=5

- <sup>5</sup>He      2009AG13      NUCLEAR REACTIONS <sup>6,7</sup>Li, <sup>9</sup>Be, <sup>12,13</sup>C, <sup>16</sup>O(K<sup>-</sup>, π<sup>-</sup>), E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus. <sup>5</sup>He, <sup>7</sup>Li, <sup>9</sup>Be, <sup>11</sup>B, <sup>12,13</sup>C, <sup>15</sup>N, <sup>16</sup>O; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2010LE14      NUCLEAR REACTIONS <sup>1</sup>H(<sup>8</sup>Li, α), E=13.2, 14.5, 17.4, 19.0 MeV; measured Eα, Iα(θ=forward); deduced σ(θ=forward), effect of halo nuclei. <sup>9</sup>Be(<sup>6</sup>He, <sup>6</sup>He), E=16.2 MeV; measured σ(θ); deduced effect of halo nuclei. JOUR NUPAB 834 491c

A=6

- <sup>6</sup>He      2008WUZY      NUCLEAR REACTIONS <sup>7,8</sup>Li(d, <sup>3</sup>He), E not given; <sup>7</sup>Li(d, t), E not given; <sup>2</sup>H(<sup>12</sup>B, p), E not given; measured E(particle), I(particle, θ); deduced dσ(θ), spectroscopic factors; calculated dσ(θ), spectroscopic factors. Results on CD only. CONF E.Lansing (NS2008),P57,Wuosmaa
- 2009F009      NUCLEAR REACTIONS <sup>3</sup>H(<sup>6</sup>He, p), (<sup>8</sup>He, p), E=25, 27.4 MeV / nucleon; <sup>6,8</sup>He; measured reaction products; deduced missing mass spectra, resonance J, π, energy, yields. Comparison with other results. JOUR ZAANE 42 465
- 2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- 2009RA33      RADIOACTIVITY <sup>6</sup>He(β<sup>-</sup>) [from <sup>7</sup>Li(p, 2p), E=30 MeV]; measured β- and, α+d spectra, half-life, and transition probability as function of the center-of-mass energy for the α+d branch of the decay of <sup>6</sup>He; deduced α+d branching ratio. <sup>6</sup>He ions of 7.9 MeV implanted in highly segmented silicon detector. JOUR PRVCA 80 054307
- 2010AB05      NUCLEAR REACTIONS C, N, O(μ, X)<sup>1</sup>n / <sup>6</sup>He / <sup>8</sup>He / <sup>8</sup>Li / <sup>9</sup>Li / <sup>7</sup>Be / <sup>10</sup>Be / <sup>11</sup>Be / <sup>8</sup>B / <sup>10</sup>B / <sup>12</sup>B / <sup>13</sup>B / <sup>9</sup>C / <sup>10</sup>C / <sup>11</sup>C / <sup>12</sup>N / <sup>13</sup>N / <sup>15</sup>O, E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010FA09      NUCLEAR REACTIONS <sup>1</sup>H(<sup>6</sup>He, <sup>6</sup>He), E=82.3 MeV / nucleon; measured reaction products. <sup>6</sup>He; deduced σ(θ). Comparison with optical model CH89 or KD02 global potentials. JOUR CPLEE 27 092501
- <sup>6</sup>Li      2008WUZY      NUCLEAR REACTIONS <sup>7,8</sup>Li(d, <sup>3</sup>He), E not given; <sup>7</sup>Li(d, t), E not given; <sup>2</sup>H(<sup>12</sup>B, p), E not given; measured E(particle), I(particle, θ); deduced dσ(θ), spectroscopic factors; calculated dσ(θ), spectroscopic factors. Results on CD only. CONF E.Lansing (NS2008),P57,Wuosmaa
- 2009AG13      NUCLEAR REACTIONS <sup>6,7</sup>Li, <sup>9</sup>Be, <sup>12,13</sup>C, <sup>16</sup>O(K<sup>-</sup>, π<sup>-</sup>), E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus. <sup>5</sup>He, <sup>7</sup>Li, <sup>9</sup>Be, <sup>11</sup>B, <sup>12,13</sup>C, <sup>15</sup>N, <sup>16</sup>O; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c

KEYNUMBERS AND KEYWORDS

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**A=6** (*continued*)

- 2009RA33 RADIOACTIVITY  ${}^6\text{He}(\beta^-)$  [from  ${}^7\text{Li}(p, 2p)$ ,  $E=30$  MeV]; measured  $\beta^-$ - and,  $\alpha+d$  spectra, half-life, and transition probability as function of the center-of-mass energy for the  $\alpha+d$  branch of the decay of  ${}^6\text{He}$ ; deduced  $\alpha+d$  branching ratio.  ${}^6\text{He}$  ions of 7.9 MeV implanted in highly segmented silicon detector. JOUR PRVCA 80 054307
- 2009URZY RADIOACTIVITY  ${}^{10}\text{B}(p, (\alpha))$ [from  ${}^{11}\text{B}({}^3\text{He}, \alpha)$ ]; measured  $E_p$ ,  $I_p$ ,  $E_\alpha$ ,  $I_\alpha$  dependent on  ${}^{10}\text{B}$  excitation energy. CONF Dub(Nucl Struct and Dynamics,09) Proc,P31
- 2010AG04 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(K^-, \pi^-)$ ,  $E$  at rest; measured  $E_p$ ,  $I_p$  from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247
- 2010BU03 NUCLEAR REACTIONS  ${}^6\text{Li}(d, d)$ ,  $(d, d')$ ,  $E=25$  MeV; measured  $E_d$ ,  $I_d$  of scattered deuterons; deduced  $\sigma(\theta)$ ,  $J$ ,  $\pi$  of excited states. Optical model, coupled-reaction-channel methods. JOUR PANUE 73 746
- 2010BU04 RADIOACTIVITY  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}(p\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios,  $J$ ,  $\pi$ . JOUR IMPEE 19 1109
- 2010LI37 NUCLEAR REACTIONS  ${}^7\text{Li}({}^6\text{Li}, {}^7\text{Li})$ ,  $E=\text{tandem}$ ; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced spectroscopic factor,  $\sigma$ .  ${}^6\text{Li}(n, \gamma)$ ,  $E=0.01-0.1$  MeV; deduced  $\sigma$ . Comparison with other data and systems, calculations. JOUR NUPAB 834 651c
- 2010SU08 NUCLEAR REACTIONS  ${}^7\text{Li}({}^6\text{Li}, {}^7\text{Li})$ ,  $({}^6\text{Li}, {}^6\text{Li})$ ,  $E=23.7$  MeV; measured reaction products; deduced  $\sigma(\theta)$ , spectroscopic factors. JOUR CPLEE 27 052101
- ${}^6\text{Be}$  2010CH42 RADIOACTIVITY  ${}^8\text{C}(2p)$ ; measured  $E_p$ ,  $I_p$ ,  $E_\alpha$ ,  $I_\alpha$ ,  $\alpha$ -p-p-p-p coin,  $\alpha$ -p-p coin from the decay of  ${}^8\text{C}$  g.s. JOUR PRVCA 82 041304
- 2010PA11 NUCLEAR REACTIONS  ${}^6\text{Li}({}^3\text{He}, t){}^6\text{Be}$ ,  $E=50$  MeV; measured particle spectra, (particle)(particle)-coin, angular distributions; deduced particle-particle correlations and Dalitz plots for the  $\alpha$ -p-p breakup particles from  ${}^6\text{Be}$ . Comparison with sequential and 3-body resonance calculations. JOUR PRVCA 81 054308

**A=7**

- ${}^7\text{H}$  2010NI10 NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{He}, {}^3\text{He}){}^7\text{H}$ ,  $E=42$  MeV / nucleon;  ${}^2\text{H}({}^{12}\text{Be}, {}^3\text{He}){}^{11}\text{Li}$ ,  $E=71$  MeV / nucleon; measured  ${}^3\text{He}$  spectra; deduced missing-mass spectra of  ${}^7\text{H}$ . Search for  ${}^7\text{H}$ . Comparison with DWBA calculations. JOUR PRVCA 81 064606
- ${}^7\text{He}$  2008WUZY NUCLEAR REACTIONS  ${}^7,8\text{Li}(d, {}^3\text{He})$ ,  $E$  not given;  ${}^7\text{Li}(d, t)$ ,  $E$  not given;  ${}^2\text{H}({}^{12}\text{B}, p)$ ,  $E$  not given; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced  $d\sigma(\theta)$ , spectroscopic factors; calculated  $d\sigma(\theta)$ , spectroscopic factors. Results on CD only. CONF E.Lansing (NS2008),P57,Wuosmaa
- ${}^7\text{Li}$  2008YAZQ NUCLEAR REACTIONS  ${}^4\text{He}({}^7\text{Li}, \alpha)$ ,  $E=13.7$  MeV;  ${}^4\text{He}({}^7\text{Li}, p)$ ,  $E=13.7$  MeV;  ${}^4\text{He}({}^7\text{Li}, t)$ ,  $E=13.7$  MeV; measured thick target  $E_\gamma$ ,  $I_\gamma$ ,  $E_\alpha$ ,  $I_\alpha$ . REPT CNS-REP-61,P5,Yamaguchi

KEYNUMBERS AND KEYWORDS

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**A=7 (continued)**

- 2009AG13 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus.  ${}^5\text{He}$ ,  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{15}\text{N}$ ,  ${}^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, \text{X})$ , E=68.8 MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^{7,8,9}\text{Li}$ ,  ${}^{9,10,11,12}\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009VE12 NUCLEAR REACTIONS  ${}^6\text{Li}$ ,  ${}^{10}\text{B}(\text{polarized } n, \alpha)$ , E=low; measured parity-violating emission asymmetry coefficient with ultracold polarized neutrons; deduced weak neutral current constant. JOUR NUPAB 827 425c
- 2010AG04 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured  $E_p$ ,  $I_p$  from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247
- 2010BU04 RADIOACTIVITY  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}(\text{p}\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109
- 2010LI01 RADIOACTIVITY  ${}^7\text{Be}(\text{EC})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced decay constant,  $T_{1/2}$  variation in Pt and Al foils. Comparison with TB-LMTO calculations. JOUR CPLEE 27 012301
- 2010LI37 NUCLEAR REACTIONS  ${}^7\text{Li}({}^6\text{Li}, {}^7\text{Li})$ , E=tandem; measured E(particle), I(particle,  $\theta$ ); deduced spectroscopic factor,  $\sigma$ .  ${}^6\text{Li}(n, \gamma)$ , E=0.01-0.1 MeV; deduced  $\sigma$ . Comparison with other data and systems, calculations. JOUR NUPAB 834 651c
- 2010SU08 NUCLEAR REACTIONS  ${}^7\text{Li}({}^6\text{Li}, {}^7\text{Li})$ , ( ${}^6\text{Li}, {}^6\text{Li}$ ), E=23.7 MeV; measured reaction products; deduced  $\sigma(\theta)$ , spectroscopic factors. JOUR CPLEE 27 052101
- 2010SU08 NUCLEAR REACTIONS  ${}^6\text{Li}(\text{p}, \gamma)$ , ( $n, \gamma$ ), E(cm)<1.2 MeV; calculated astrophysical reaction rates, S-factors. DWBA analysis. JOUR CPLEE 27 052101
- 2010VE04 NUCLEAR REACTIONS  ${}^9\text{Be}({}^7\text{Li}, \text{X})$ , E=15.75, 24, 30 MeV;  ${}^9\text{Be}({}^7\text{Be}, \text{X})$ , E=17, 19, 21 MeV;  ${}^9\text{Be}({}^7\text{Be}, {}^6\text{Li})$ , E=19, 21 MeV; measured reaction products;  ${}^{7,9}\text{Be}$ ,  ${}^7\text{Li}$ ; deduced  $\sigma(\theta)$ ,  $\alpha$ -energy spectra, energy dependence of the fusion  $\sigma$ . Comparison with FRDWBA calculations. JOUR ZAANE 44 385
- ${}^7\text{Be}$  2009BA59 NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, \gamma)$ , ( ${}^{17}\text{F}, \gamma$ ), ( ${}^{24}\text{Mg}, \gamma$ ), E=12 MeV;  ${}^7\text{Be}$ ,  ${}^{17}\text{F}$ ,  ${}^{24}\text{Mg}$ ; measured reaction products; deduced yields,  $\sigma$  for (p,  $\gamma$ ) reactions. JOUR ZAANE 42 457
- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n}$  /  ${}^6\text{He}$  /  ${}^8\text{He}$  /  ${}^8\text{Li}$  /  ${}^9\text{Li}$  /  ${}^7\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{11}\text{Be}$  /  ${}^8\text{B}$  /  ${}^{10}\text{B}$  /  ${}^{12}\text{B}$  /  ${}^{13}\text{B}$  /  ${}^9\text{C}$  /  ${}^{10}\text{C}$  /  ${}^{11}\text{C}$  /  ${}^{12}\text{N}$  /  ${}^{13}\text{N}$  /  ${}^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807

KEYNUMBERS AND KEYWORDS

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**A=7 (continued)**

- 2010LA11 NUCLEAR REACTIONS  $^2\text{H}(^{11}\text{B}, \alpha^8\text{Be})$ ,  $E=27$  MeV;  $^2\text{H}(^{10}\text{B}, \alpha^7\text{Be})$ ,  $E=24.4$  MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ .  $^{11}\text{B}(p, \alpha)$ ,  $E(\text{cm})=0-0.6$  MeV;  $^{10}\text{B}(p, \alpha)$ ,  $E(\text{cm})=0-0.15$  MeV; deduced S-factor using Trojan Horse Method. JOUR NUPAB 834 655c
- 2010LI01 RADIOACTIVITY  $^7\text{Be}(\text{EC})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced decay constant,  $T_{1/2}$  variation in Pt and Al foils. Comparison with TB-LMTO calculations. JOUR CPLEE 27 012301
- 2010SU08 NUCLEAR REACTIONS  $^6\text{Li}(p, \gamma)$ ,  $(n, \gamma)$ ,  $E(\text{cm})<1.2$  MeV; calculated astrophysical reaction rates, S-factors. DWBA analysis. JOUR CPLEE 27 052101
- 2010VE04 NUCLEAR REACTIONS  $^9\text{Be}(^7\text{Li}, X)$ ,  $E=15.75, 24, 30$  MeV;  $^9\text{Be}(^7\text{Be}, X)$ ,  $E=17, 19, 21$  MeV;  $^9\text{Be}(^7\text{Be}, ^6\text{Li})$ ,  $E=19, 21$  MeV; measured reaction products;  $^7,^9\text{Be}$ ,  $^7\text{Li}$ ; deduced  $\sigma(\theta)$ ,  $\alpha$ -energy spectra, energy dependence of the fusion  $\sigma$ . Comparison with FRDWBA calculations. JOUR ZAANE 44 385

**A=8**

- $^8\text{He}$  2009F009 NUCLEAR REACTIONS  $^3\text{H}(^6\text{He}, p)$ ,  $(^8\text{He}, p)$ ,  $E=25, 27.4$  MeV / nucleon;  $^6,^8\text{He}$ ; measured reaction products; deduced missing mass spectra, resonance  $J, \pi$ , energy, yields. Comparison with other results. JOUR ZAANE 42 465
- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu, X$ ) $^1\text{n}$  /  $^6\text{He}$  /  $^8\text{He}$  /  $^8\text{Li}$  /  $^9\text{Li}$  /  $^7\text{Be}$  /  $^{10}\text{Be}$  /  $^{11}\text{Be}$  /  $^8\text{B}$  /  $^{10}\text{B}$  /  $^{12}\text{B}$  /  $^{13}\text{B}$  /  $^9\text{C}$  /  $^{10}\text{C}$  /  $^{11}\text{C}$  /  $^{12}\text{N}$  /  $^{13}\text{N}$  /  $^{15}\text{O}$ ,  $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010LE19 RADIOACTIVITY  $^8\text{He}(\beta^-)$ [from  $^{65}\text{Cu}(^8\text{He}, ^8\text{He})$ ,  $E=19.9, 30.6$  MeV]; measured  $E\gamma$ . JOUR PRVCA 82 044617
- 2010MI01 RADIOACTIVITY  $^8\text{He}(\beta^-)$  [from  $\text{C}(^{11}\text{B}, X)^8\text{He}$ ,  $E=33$  MeV / nucleon]; measured recoils,  $\beta$ -delayed decays,  $E\alpha$ ,  $I\alpha$ ,  $I_t$ ,  $E_t$ ,  $I_n$ ,  $E_n$ ; deduced feasibility of  $\beta$ -decay studies of  $^8\text{He}$ . JOUR APOBB 41 449
- $^8\text{Li}$  2009KAZR RADIOACTIVITY  $^8\text{Li}(\text{polarized})$ ; measured  $I\beta(\theta)$ ; deduced polarization, asymmetry R-coefficient. REPT RIKEN 2008 Annual,P25,Kawamura
- 2009LI51 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Mg}, X)$ ,  $E=68.8$  MeV; measured isotopic yields.  $^6\text{He}$ ,  $^7,^8,^9\text{Li}$ ,  $^9,^{10,11,12}\text{Be}$ ,  $^{12,13,14,15,17}\text{B}$ ,  $^{15,16,17,18,19}\text{C}$ ,  $^{19,20,21}\text{N}$ ,  $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009RU13 NUCLEAR REACTIONS  $^7\text{Li}(^{18}\text{O}, ^{17}\text{O})$ ,  $E=114$  MeV; measured particle spectra,  $\sigma(\theta)$ ; deduced reaction mechanism features and Woods-Saxon potential parameters using coupled-reaction-channels analysis. JOUR NUPAB 831 139

A=8 (*continued*)

- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) $^1n$  /  $^6\text{He}$  /  $^8\text{He}$  /  $^8\text{Li}$  /  $^9\text{Li}$  /  $^7\text{Be}$  /  $^{10}\text{Be}$  /  $^{11}\text{Be}$  /  $^8\text{B}$  /  $^{10}\text{B}$  /  $^{12}\text{B}$  /  $^{13}\text{B}$  /  $^9\text{C}$  /  $^{10}\text{C}$  /  $^{11}\text{C}$  /  $^{12}\text{N}$  /  $^{13}\text{N}$  /  $^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010FL01 RADIOACTIVITY  $^8\text{Li}(\beta^-)$ [from  $^7\text{Li}(d, p)$ , E=1.98 MeV]; measured E $\beta$ , I $\beta$ , half-life. Comparison with previous measurements. JOUR PRVCA 82 027309
- 2010LE19 RADIOACTIVITY  $^8\text{He}(\beta^-)$ [from  $^{65}\text{Cu}(^8\text{He}, ^8\text{He})$ , E=19.9, 30.6 MeV]; measured E $\gamma$ . JOUR PRVCA 82 044617
- 2010MI01 RADIOACTIVITY  $^8\text{He}(\beta^-)$  [from C( $^{11}\text{B}$ , X) $^8\text{He}$ , E=33 MeV / nucleon];measured recoils,  $\beta$ -delayed decays, E $\alpha$ , I $\alpha$ , It, Et, In, En; deduced feasibility of  $\beta$ -decay studies of  $^8\text{He}$ . JOUR APOBB 41 449
- $^8\text{Be}$  2008MUZW NUCLEAR REACTIONS  $^9\text{Be}(n, 2n)$ , E $\approx$ 14 MeV; measured En, In( $\theta$ ), n-n-coin., deduced d $\sigma$ ( $\theta$ ). CONF Nice (Nucl Data for Sci and Technol) Proc,P999
- 2008YAZQ NUCLEAR REACTIONS  $^4\text{He}(^7\text{Li}, \alpha)$ , E=13.7 MeV;  $^4\text{He}(^7\text{Li}, p)$ , E=13.7 MeV;  $^4\text{He}(^7\text{Li}, t)$ , E=13.7 MeV; measured thick target E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ . REPT CNS-REP-61,P5,Yamaguchi
- 2009ARZY NUCLEAR REACTIONS  $^9\text{Be}(\gamma, n)$ , E=threshold-5.2 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . REPT TUNL-XLVIII,P101,Arnold
- 2009SEZX NUCLEAR REACTIONS  $^{11}\text{B}(p, \alpha)$ , E=150=400 keV; measured E $\alpha$ , I $\alpha$ ( $\theta$ ). REPT TUNL-XLVIII,P69,Seo
- 2010BU04 RADIOACTIVITY  $^7\text{Li}$ ,  $^9\text{Be}$ ,  $^{11}\text{B}$ ,  $^{15}\text{N}(p\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109
- 2010BU05 NUCLEAR REACTIONS  $^9\text{Be}(e, e')$ , E=73 MeV; measured electron spectra,  $\sigma$ ,  $\sigma$ ( $\theta$ ); deduced parameters of the first 1 / 2+ resonance, widths, B(E1). R-matrix analysis.  $^9\text{Be}(\gamma, n)$ , E=1.6-2.0 MeV; deduced averaged  $\sigma$ . Deduced reaction rates for  $^4\text{He}(n\alpha, \gamma)^9\text{Be}$  at temperatures T $_9$ =0.001 to 0.03. Comparison with shell-model calculations. Discussed implications for possible production of  $^{12}\text{C}$  in neutron-rich astrophysical scenarios. JOUR PRVCA 82 015808
- 2010COZY NUCLEAR REACTIONS  $^{12}\text{C}(p, p\alpha)$ , E=100 MeV; measured Ep, Ip( $\theta$ ), E $\alpha$ , I $\alpha$ ( $\theta$ ); deduced d $\sigma$ ( $\theta$ , Ep), pair momentum distributions, analyzing power; calculated d $\sigma$  using DWIA, analyzing power. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.2,P317
- 2010FL01 RADIOACTIVITY  $^8\text{Li}(\beta^-)$ [from  $^7\text{Li}(d, p)$ , E=1.98 MeV]; measured E $\beta$ , I $\beta$ , half-life. Comparison with previous measurements. JOUR PRVCA 82 027309
- 2010K033 NUCLEAR REACTIONS  $^{11}\text{B}(p, \alpha)$ , (p, p), E=2.2-4.2 MeV; measured proton spectrum, E $\alpha$ , I $\alpha$ ; deduced yields,  $\sigma$ ( $\theta$ ). Ion Beam Analysis (IBA) techniques. JOUR NIMBE 268 3539
- 2010LA11 NUCLEAR REACTIONS  $^2\text{H}(^{11}\text{B}, \alpha^8\text{Be})$ , E=27 MeV;  $^2\text{H}(^{10}\text{B}, \alpha^7\text{Be})$ , E=24.4 MeV; measured E $\alpha$ , I $\alpha$ ( $\theta$ ), E(particle), I(particle).  $^{11}\text{B}(p, \alpha)$ , E(cm)=0-0.6 MeV;  $^{10}\text{B}(p, \alpha)$ , E(cm)=0-0.15 MeV; deduced S-factor using Trojan Horse Method. JOUR NUPAB 834 655c

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**A=8 (continued)**

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|                | 2010R009 | NUCLEAR REACTIONS ${}^7\text{Li}({}^7\text{Li}, t)$ , $({}^7\text{Li}, \alpha)$ , $({}^7\text{Li}, {}^6\text{He})$ , E=2-16 MeV; measured reaction products, Et, It, E $\alpha$ , I $\alpha$ ; deduced yields, $\sigma$ , $\sigma(\theta)$ . Comparison with DWBA analysis. JOUR APOBB 41 845  |
| ${}^8\text{B}$ | 2009BA59 | NUCLEAR REACTIONS ${}^1\text{H}({}^7\text{Be}, \gamma)$ , $({}^{17}\text{F}, \gamma)$ , $({}^{24}\text{Mg}, \gamma)$ , E=12 MeV; ${}^7\text{Be}$ , ${}^{17}\text{F}$ , ${}^{24}\text{Mg}$ ; measured reaction products; deduced yields, $\sigma$ for (p, $\gamma$ ) reactions. JOUR ZAANE 42 457   |
|                | 2010AB05 | NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n}$ / ${}^6\text{He}$ / ${}^8\text{He}$ / ${}^8\text{Li}$ / ${}^9\text{Li}$ / ${}^7\text{Be}$ / ${}^{10}\text{Be}$ / ${}^{11}\text{Be}$ / ${}^8\text{B}$ / ${}^{10}\text{B}$ / ${}^{12}\text{B}$ / ${}^{13}\text{B}$ / ${}^9\text{C}$ / ${}^{10}\text{C}$ / ${}^{11}\text{C}$ / ${}^{12}\text{N}$ / ${}^{13}\text{N}$ / ${}^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807  |
|                | 2010MI12 | NUCLEAR REACTIONS ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be})$ , $({}^7\text{Be}, {}^7\text{Be}')$ , E=18.5, 22.0 MeV, [secondary ${}^7\text{Be}$ beam from primary ${}^1\text{H}({}^7\text{Li}, {}^7\text{Be})$ reaction]; measured recoil proton and ${}^7\text{Be}$ spectra, (proton)( ${}^7\text{Be}$ )-coin, excitation functions and angular distributions. ${}^8\text{B}$ ; deduced levels, J, $\pi$ , partial proton widths and total widths. R-matrix and time-dependent continuum shell model (TDCSM) analysis. Comparison with low-lying level structure of mirror nucleus ${}^8\text{Li}$ . JOUR PRVCA 82 011601 |
| ${}^8\text{C}$ | 2010CH42 | RADIOACTIVITY ${}^8\text{C}(2p)$ ; measured E $p$ , I $p$ , E $\alpha$ , I $\alpha$ , $\alpha$ -p-p-p-p coin, $\alpha$ -p-p coin from the decay of ${}^8\text{C}$ g.s. JOUR PRVCA 82 041304  |

**A=9**

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| ${}^9\text{He}$ | 2010J006 | NUCLEAR REACTIONS ${}^1\text{H}({}^{11}\text{Li}, 2p)$ , $({}^{11}\text{Li}, n2p)$ , E=280 MeV / nucleon; measured fragment spectra, neutron spectra, (fragment)(neutron)-coin, relative energy spectra; deduced resonance state parameters. JOUR NUPAB 842 15  |
| ${}^9\text{Li}$ | 2008RIZX | RADIOACTIVITY ${}^9\text{Li}$ , ${}^{17}\text{N}$ , ${}^{87}\text{Br}$ , ${}^{88}\text{Br}(\beta^-)$ [from Pb, ${}^{209}\text{Bi}$ , Fe(p, x), E=1 GeV]; measured $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073  |
|                 | 2009LI51 | NUCLEAR REACTIONS ${}^9\text{Be}({}^{26}\text{Mg}, X)$ , E=68.8 MeV; measured isotopic yields. ${}^6\text{He}$ , ${}^{7,8,9}\text{Li}$ , ${}^{9,10,11,12}\text{Be}$ , ${}^{12,13,14,15,17}\text{B}$ , ${}^{15,16,17,18,19}\text{C}$ , ${}^{19,20,21}\text{N}$ , ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315  |
|                 | 2009MIZU | NUCLEAR REACTIONS ${}^9\text{Be}({}^{58}\text{Ni}, {}^{58}\text{Cu})$ , E=95 MeV / nucleon; measured E( ${}^{58}\text{Cu}$ ), I $\beta(t)$ ; deduced T $_{1/2}$ . REPT RIKEN 2008 Annual,P24,Mihara   |
|                 | 2010AB05 | NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n}$ / ${}^6\text{He}$ / ${}^8\text{He}$ / ${}^8\text{Li}$ / ${}^9\text{Li}$ / ${}^7\text{Be}$ / ${}^{10}\text{Be}$ / ${}^{11}\text{Be}$ / ${}^8\text{B}$ / ${}^{10}\text{B}$ / ${}^{12}\text{B}$ / ${}^{13}\text{B}$ / ${}^9\text{C}$ / ${}^{10}\text{C}$ / ${}^{11}\text{C}$ / ${}^{12}\text{N}$ / ${}^{13}\text{N}$ / ${}^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807 |
| ${}^9\text{Be}$ | 2008AZZZ | NUCLEAR REACTIONS ${}^9\text{Be}({}^{42}\text{Si}, {}^{42}\text{Si}')$ , E not given; measured E $\gamma$ , I $\gamma$ , reaction products; ${}^{42}\text{Si}$ ; deduced level energies, J, $\pi$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez   |



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KEYNUMBERS AND KEYWORDS

**A=9 (continued)**

- 2008RIZX RADIOACTIVITY  ${}^9\text{Li}$ ,  ${}^{17}\text{N}$ ,  ${}^{87}\text{Br}$ ,  ${}^{88}\text{Br}(\beta^-)$ [from Pb,  ${}^{209}\text{Bi}$ , Fe(p, x), E=1 GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- 2009AG13 NUCLEAR REACTIONS  ${}^{6,7}\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus.  ${}^5\text{He}$ ,  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{15}\text{N}$ ,  ${}^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2009BUZY NUCLEAR REACTIONS  ${}^9\text{Be}(e, e')$ , E=73 MeV; measured Ee, Ie,  $\theta(e)$ ; deduced  $\sigma$ ,  $\sigma({}^9\text{Be}(\gamma, n))$ , resonance parameters. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P283,Burda
- 2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, \text{X})$ , E=68.8 MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^{7,8,9}\text{Li}$ ,  ${}^{9,10,11,12}\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009ON02 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{16}\text{C}, {}^{16}\text{C}')$ ,  $({}^{18}\text{C}, {}^{18}\text{C}')$ , E=72.79 MeV / nucleon;  ${}^{16,18}\text{C}$ ; measured measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, half-lives using the upgraded recoil shadow method; deduced mean lifetime, B(E2), hinderance of transition strength, proton-shell closure.  ${}^{22}\text{Ne}$  secondary beams. JOUR ZAANE 42 393
- 2009URZY RADIOACTIVITY  ${}^{10}\text{B}(p)$ ,  $(\alpha)$ [from  ${}^{11}\text{B}({}^3\text{He}, \alpha)$ ]; measured Ep, Ip, E $\alpha$ , I $\alpha$  dependent on  ${}^{10}\text{B}$  excitation energy. CONF Dub(Nucl Struct and Dynamics,09) Proc,P31
- 2010AG04 NUCLEAR REACTIONS  ${}^{6,7}\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured Ep, Ip from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247
- 2010BU04 RADIOACTIVITY  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}(p\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109
- 2010BU05 NUCLEAR REACTIONS  ${}^9\text{Be}(e, e')$ , E=73 MeV; measured electron spectra,  $\sigma$ ,  $\sigma(\theta)$ ; deduced parameters of the first 1 / 2+ resonance, widths, B(E1). R-matrix analysis.  ${}^9\text{Be}(\gamma, n)$ , E=1.6-2.0 MeV; deduced averaged  $\sigma$ . Deduced reaction rates for  ${}^4\text{He}(n\alpha, \gamma){}^9\text{Be}$  at temperatures  $T_9=0.001$  to 0.03. Comparison with shell-model calculations. Discussed implications for possible production of  ${}^{12}\text{C}$  in neutron-rich astrophysical scenarios. JOUR PRVCA 82 015808
- 2010CH18 ATOMIC MASSES  ${}^9,{}^{10}\text{Be}$ ; measured ion beam intensities; deduced  ${}^{10}\text{Be} / {}^9\text{Be}$  isotope ratio. JOUR NIMBE 268 192

A=9 (*continued*)

- 2010GA06 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{62}\text{Fe}, {}^{62}\text{Fe}')$ ,  $E=73.0$  MeV / nucleon [ ${}^{62}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon],  ${}^9\text{Be}({}^{64}\text{Fe}, {}^{64}\text{Fe}')$ ,  $E=67.5$  MeV / nucleon [ ${}^{64}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon],  ${}^9\text{Be}({}^{66}\text{Fe}, {}^{66}\text{Fe}')$ ,  $E=82.6$  MeV / nucleon [ ${}^{66}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon],  ${}^9\text{Be}({}^{60}\text{Cr}, {}^{60}\text{Cr}')$ ,  $E=80.6$  MeV / nucleon [ ${}^{60}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon],  ${}^9\text{Be}({}^{62}\text{Cr}, {}^{62}\text{Cr}')$ ,  $E=74.6$  MeV / nucleon [ ${}^{62}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon],  ${}^9\text{Be}({}^{64}\text{Cr}, {}^{64}\text{Cr}')$ ,  $E=87.0$  MeV / nucleon [ ${}^{64}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ .  ${}^{62,64,66}\text{Fe}$ ,  ${}^{60,62,64}\text{Cr}$ ; deduced levels,  $J$ ,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces.  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$   ${}^{62}\text{Fe}$  /  ${}^{64}\text{Fe}$  /  ${}^{66}\text{Fe}$  /  ${}^{60}\text{Cr}$  /  ${}^{62}\text{Cr}$  /  ${}^{64}\text{Cr}$  /  ${}^{65}\text{Mn}$  /  ${}^{66}\text{Mn}$  /  ${}^{67}\text{Fe}$  /  ${}^{69}\text{Co}$ ,  $E=130$  MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- 2010GA14 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^{82}\text{Ge}, {}^{82}\text{Ge}')$ ,  $E=89.4$  MeV / nucleon;  ${}^{197}\text{Au}({}^{84}\text{Se}, {}^{84}\text{Se}')$ ,  $E=95.4$  MeV / nucleon;  ${}^9\text{Be}({}^{82}\text{Ge}, {}^{82}\text{Ge}')$ ,  $E=87.6$  MeV / nucleon;  ${}^9\text{Be}({}^{84}\text{Se}, {}^{84}\text{Se}')$ ,  $E=92$  MeV / nucleon, [ ${}^{82}\text{Ge}$  and  ${}^{84}\text{Se}$  secondary beams from  ${}^9\text{Be}({}^{86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , (particle) $\gamma$ -coin;  ${}^{82}\text{Ge}$ ,  ${}^{84}\text{Se}$ ; deduced levels,  $J$ ,  $B(E2)$ ,  $T_{1/2}$ . Intermediate energy Coulomb excitation and inelastic scattering. Comparison with systematics of  $B(E2)$  values for first  $2+$  state in  $N=50$  isotones for  $Z(\text{even})=30-42$  and even-even Ge ( $A=64-82$ ) and Se ( $A=68-84$ ) isotopes, and with shell-model calculations. Systematics of first  $3-$  states in even-even Se ( $A=74-82$ ) and  $N=50$  isotones. JOUR PRVCA 81 064326
- 2010GL01 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{16}\text{O}, {}^{16}\text{O}')$ ,  $E=132$  MeV; measured reaction products; deduced  $\sigma(\theta)$ , rainbow scattering. JOUR PANUE 73 14
- 2010K019 ATOMIC MASSES  ${}^9,{}^{10}\text{Be}$ ; measured ion beam intensities; deduced  ${}^{10}\text{Be}$  /  ${}^9\text{Be}$  isotopic ratio. Heavy-Ion Elastic Recoil Detection (HI-ERD). JOUR NIMBE 268 187
- 2010LE14 NUCLEAR REACTIONS  ${}^1\text{H}({}^8\text{Li}, \alpha)$ ,  $E=13.2, 14.5, 17.4, 19.0$  MeV; measured  $E\alpha$ ,  $I\alpha(\theta=\text{forward})$ ; deduced  $\sigma(\theta=\text{forward})$ , effect of halo nuclei.  ${}^9\text{Be}({}^6\text{He}, {}^6\text{He})$ ,  $E=16.2$  MeV; measured  $\sigma(\theta)$ ; deduced effect of halo nuclei. JOUR NUPAB 834 491c
- 2010MA29 NUCLEAR REACTIONS  ${}^9\text{Be}({}^6\text{He}, {}^6\text{He})$ ,  $({}^6\text{He}, \alpha)$ ,  $E=16.8$  MeV; measured reaction products; deduced  $\sigma(\theta)$ , total energy,  ${}^{11}\text{Be}$  excitation energy spectrum. Comparison with continuum-discretised coupled-channel method (CDCC) calculations. JOUR ZAANE 43 153
- 2010MU09 NUCLEAR REACTIONS  ${}^9\text{Be}, {}^{51}\text{V}({}^8\text{Li}, {}^8\text{Li})$ ,  $({}^8\text{Li}, \text{X})$ ,  $E=18.5, 19.6$  MeV; measured  $\sigma$ ,  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using Sao Paulo potential and WS form factors; deduced optical model parameters. Comparison with other reactions. Secondary radioactive beam. JOUR ZAANE 45 23

KEYNUMBERS AND KEYWORDS

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**A=9 (continued)**

- 2010PIZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^6\text{He}, {}^6\text{He})$ ,  $E=16.2$  MeV;  ${}^9\text{Be}({}^7\text{Be}, {}^7\text{Be})$ ,  $E=23.7$  MeV; measured reaction products; deduced  $d\sigma(\theta)$ ; calculated  $d\sigma(\theta)$  using FRESCO optical model code and using CC; deduced potential parameters. CDCC calculations in progress. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.2,P337
- 2010R014 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{24}\text{Ne}, n^{23}\text{Ne})$ ,  $({}^{25}\text{Ne}, n^{24}\text{Ne})$ ,  $({}^{26}\text{Ne}, n^{25}\text{Ne})$ ,  $({}^{27}\text{Ne}, n^{26}\text{Ne})$ ,  $({}^{28}\text{Ne}, n^{27}\text{Ne})$ ,  $E=\text{high}$  [from  ${}^9\text{Be}({}^{40}\text{Ar}, X)$ ,  $E=700$  MeV / nucleon]; measured  $\sigma$ , momentum distributions; deduced configurations, neutron separation energy, related features. Secondary radioactive beam at FRS. JOUR PYLBB 687 26
- 2010VE04 NUCLEAR REACTIONS  ${}^9\text{Be}({}^7\text{Li}, X)$ ,  $E=15.75, 24, 30$  MeV;  ${}^9\text{Be}({}^7\text{Be}, X)$ ,  $E=17, 19, 21$  MeV;  ${}^9\text{Be}({}^7\text{Be}, {}^6\text{Li})$ ,  $E=19, 21$  MeV; measured reaction products;  ${}^7, {}^9\text{Be}$ ,  ${}^7\text{Li}$ ; deduced  $\sigma(\theta)$ ,  $\alpha$ -energy spectra, energy dependence of the fusion  $\sigma$ . Comparison with FRDWBA calculations. JOUR ZAANE 44 385
- ${}^9\text{B}$  2008FEZY NUCLEAR REACTIONS  ${}^9\text{Be}(p, n)$ ,  $E=17.4$ ; measured thick target  $E_n$ ,  $I_n$ ;  $\text{Si}(n, x)$ ,  $E$  not given;  $\text{Si}(\gamma, x)$ ,  $E=1173, 1332$  keV;  $\text{Si}(n, x)$ ,  $E=\text{reactor spectrum}$ ; measured common emitter gain; deduced NIEL-scaling factor for Si. CONF Nice (Nucl Data for Sci and Technol) Proc,P1295
- 2009SCZX NUCLEAR REACTIONS  ${}^9\text{Be}({}^3\text{He}, t)$ ,  $E^* \approx 0-17$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$  at 0 degrees; deduced GT strengths. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P544,Scholl
- 2009UE01 NUCLEAR REACTIONS  ${}^{10}\text{B}(e, e'n)$ ,  $E=200$  MeV; measured neutron spectra,  $\sigma$ , and  $\sigma(\theta)$ ; deduced levels,  $J$ ,  $\pi$ , missing energy spectrum, giant resonances. Comparison with results from  $(\gamma, n)$  reactions and shell model calculations. JOUR PRVCA 80 064609
- 2010FUZZ NUCLEAR REACTIONS  ${}^9\text{Be}, {}^{23}\text{Na}, {}^{25}\text{Mg}, {}^{42}\text{Ca}, {}^{46}\text{Ti}, {}^{50}\text{Cr}, {}^{54}\text{Fe}, {}^{58}\text{Ni}, {}^{118}\text{Sn}({}^3\text{He}, t)$ ,  $E=140$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , reaction products; deduced  $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39
- ${}^9\text{C}$  2010AB05 NUCLEAR REACTIONS C, N, O( $\mu, X$ ) ${}^1\text{n} / {}^6\text{He} / {}^8\text{He} / {}^8\text{Li} / {}^9\text{Li} / {}^7\text{Be} / {}^{10}\text{Be} / {}^{11}\text{Be} / {}^8\text{B} / {}^{10}\text{B} / {}^{12}\text{B} / {}^{13}\text{B} / {}^9\text{C} / {}^{10}\text{C} / {}^{11}\text{C} / {}^{12}\text{N} / {}^{13}\text{N} / {}^{15}\text{O}$ ,  $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807

**A=10**

- ${}^{10}\text{He}$  2009F009 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, p)$ ,  $({}^8\text{He}, p)$ ,  $E=25, 27.4$  MeV / nucleon;  ${}^6, {}^8\text{He}$ ; measured reaction products; deduced missing mass spectra, resonance  $J$ ,  $\pi$ , energy, yields. Comparison with other results. JOUR ZAANE 42 465
- 2010J006 NUCLEAR REACTIONS  ${}^1\text{H}({}^{11}\text{Li}, 2p)$ ,  $({}^{11}\text{Li}, n2p)$ ,  $E=280$  MeV / nucleon; measured fragment spectra, neutron spectra, (fragment)(neutron)-coin, relative energy spectra; deduced resonance state parameters. JOUR NUPAB 842 15

KEYNUMBERS AND KEYWORDS

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A=10 (*continued*)

- <sup>10</sup>Be      2008GEZW      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, <sup>55</sup>Ti), E≈400 MeV / nucleon; <sup>9</sup>Be(<sup>48</sup>Ca, <sup>47</sup>Ca), E≈400 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin, A(particle), Q(particle), (particle) $\gamma$ -coin; deduced E, J,  $\pi$ ,  $\sigma$ ; calculated knockout d $\sigma$ (E) using OXBASH code with GXPF1A interaction. Results on CD only. CONF E.Lansing (NS2008),P36,Gernhauser
- 2008MCZX      NUCLEAR REACTIONS <sup>7</sup>Li(<sup>7</sup>Li,  $\alpha$ ), E=10 MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ , t), E(recoil), (recoil) $\gamma$ -coin; deduced T<sub>1/2</sub>, B(E2), quadrupole moment. Results on CD only. CONF E.Lansing (NS2008),P55,McCutchan
- 2008YAZQ      NUCLEAR REACTIONS <sup>4</sup>He(<sup>7</sup>Li,  $\alpha$ ), E=13.7 MeV; <sup>4</sup>He(<sup>7</sup>Li, p), E=13.7 MeV; <sup>4</sup>He(<sup>7</sup>Li, t), E=13.7 MeV; measured thick target E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ . REPT CNS-REP-61,P5,Yamaguchi
- 2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- 2009SUZV      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>18</sup>C, <sup>17</sup>C), E not given; measured A(particle), Z(particle), E(particle,  $\theta$ ), E $\gamma$ , I $\gamma$ (t), (particle) $\gamma$ -coin; deduced T<sub>1/2</sub>, B(M1). REPT RIKEN 2008 Annual,P10,Suzuki
- 2010AB05      NUCLEAR REACTIONS C, N, O( $\mu$ , X)<sup>1</sup>n / <sup>6</sup>He / <sup>8</sup>He / <sup>8</sup>Li / <sup>9</sup>Li / <sup>7</sup>Be / <sup>10</sup>Be / <sup>11</sup>Be / <sup>8</sup>B / <sup>10</sup>B / <sup>12</sup>B / <sup>13</sup>B / <sup>9</sup>C / <sup>10</sup>C / <sup>11</sup>C / <sup>12</sup>N / <sup>13</sup>N / <sup>15</sup>O, E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010AM02      NUCLEAR REACTIONS <sup>1</sup>H(<sup>11</sup>Be, d), <sup>2</sup>H(<sup>10</sup>Be, p), (<sup>12</sup>B, d), E=40 MeV / nucleon; measured reaction products; deduced new kinematics technique. JOUR IMPEE 19 1096
- 2010CH18      RADIOACTIVITY <sup>10</sup>Be( $\beta^-$ ); measured electron spectrum; deduced <sup>10</sup>Be activity, T<sub>1/2</sub>. JOUR NIMBE 268 192
- 2010CH18      ATOMIC MASSES <sup>9,10</sup>Be; measured ion beam intensities; deduced <sup>10</sup>Be / <sup>9</sup>Be isotope ratio. JOUR NIMBE 268 192
- 2010CH42      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>9</sup>C, <sup>8</sup>B), [<sup>9</sup>C beam from <sup>9</sup>Be(<sup>16</sup>O, X) fragmentation], E=70 MeV / nucleon; measured E<sub>p</sub>, I<sub>p</sub>, <sup>6</sup>Li-p-p correlated events from an excited state (IAS of <sup>8</sup>C g.s.) in <sup>8</sup>B by analyzing complete kinematics of 2p+<sup>6</sup>Li decay products; deduced 2p decay (isospin-allowed 2p decay between isobaric analog states). <sup>9</sup>Be(<sup>9</sup>C, <sup>8</sup>C), [<sup>9</sup>C beam from <sup>9</sup>Be(<sup>16</sup>O, X) fragmentation], E=70 MeV / nucleon; measured E<sub>p</sub>, I<sub>p</sub>, <sup>6</sup>Be-p-p and  $\alpha$ -p-p-p correlated events from <sup>8</sup>C g.s. by analyzing complete kinematics of 2p+<sup>6</sup>Be and  $\alpha$ +2p+2p events. JOUR PRVCA 82 041304
- 2010C010      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>24</sup>Ne, <sup>23</sup>Ne), (<sup>25</sup>Ne, <sup>24</sup>Ne), (<sup>26</sup>Ne, <sup>25</sup>Ne), (<sup>27</sup>Ne, <sup>26</sup>Ne), (<sup>28</sup>Ne, <sup>27</sup>Ne), E=high [from <sup>9</sup>Be(<sup>40</sup>Ar, X), E=700 MeV / nucleon]; measured momentum distributions. Comparison with calculations. JOUR NUPAB 834 485c
- 2010K019      RADIOACTIVITY <sup>10</sup>Be( $\beta^-$ ); measured electron spectrum; deduced <sup>10</sup>Be activity, T<sub>1/2</sub>. Liquid scintillation counting (LSC). JOUR NIMBE 268 187
- 2010K019      ATOMIC MASSES <sup>9,10</sup>Be; measured ion beam intensities; deduced <sup>10</sup>Be / <sup>9</sup>Be isotopic ratio. Heavy-Ion Elastic Recoil Detection (HI-ERD). JOUR NIMBE 268 187

A=10 (*continued*)

- 2010RE05 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Si}, {}^{25}\text{Si})$ , E=109 MeV / nucleon;  ${}^9\text{Be}({}^{30}\text{S}, {}^{29}\text{S})$ , E=103 MeV / nucleon, [secondary beams of  ${}^{26}\text{Si}$  and  ${}^{30}\text{S}$  from primary  ${}^9\text{Be}({}^{36}\text{Ar}, \text{X})$ , E=150 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\sigma$  using SeGA array.  ${}^{25}\text{Si}$ ,  ${}^{29}\text{S}$ ; deduced levels, J,  $\pi$ . Comparisons with previous experimental data, mirror nuclei  ${}^{25}\text{Na}$  and  ${}^{29}\text{Al}$ , and shell model calculations. JOUR PRVCA 81 067303
- 2010R009 NUCLEAR REACTIONS  ${}^7\text{Li}({}^7\text{Li}, \text{t})$ , ( ${}^7\text{Li}, \alpha$ ), ( ${}^7\text{Li}, {}^6\text{He}$ ), E=2-16 MeV; measured reaction products, Et, It,  $E\alpha$ ,  $I\alpha$ ; deduced yields,  $\sigma$ ,  $\sigma(\theta)$ . Comparison with DWBA analysis. JOUR APOBB 41 845
- ${}^{10}\text{B}$  2008RIZV NUCLEAR REACTIONS  ${}^9\text{Be}({}^{44}\text{S}, {}^{43}\text{P})$ , E $\approx$ 92 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced E, J,  $\pi$ , spectroscopic factor, momentum distribution of knocked-out proton,  $\sigma$ . Results on CD only. CONF E.Lansing (NS2008),P12,Riley
- 2009URZY NUCLEAR REACTIONS  ${}^{11}\text{B}({}^3\text{He}, \alpha)$ , E=15 MeV; measured  $E\alpha$ ,  $I\alpha(\theta=67^\circ)$ ,  $E({}^{10}\text{B})$ ,  $I({}^{10}\text{B}, \theta=30^\circ)$ . CONF Dub(Nucl Struct and Dynamics,09) Proc,P31
- 2009URZY RADIOACTIVITY  ${}^{10}\text{B}(\text{p})$ , ( $\alpha$ )[from  ${}^{11}\text{B}({}^3\text{He}, \alpha)$ ]; measured  $E_p$ ,  $I_p$ ,  $E\alpha$ ,  $I\alpha$  dependent on  ${}^{10}\text{B}$  excitation energy. CONF Dub(Nucl Struct and Dynamics,09) Proc,P31
- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n} / {}^6\text{He} / {}^8\text{He} / {}^8\text{Li} / {}^9\text{Li} / {}^7\text{Be} / {}^{10}\text{Be} / {}^{11}\text{Be} / {}^8\text{B} / {}^{10}\text{B} / {}^{12}\text{B} / {}^{13}\text{B} / {}^9\text{C} / {}^{10}\text{C} / {}^{11}\text{C} / {}^{12}\text{N} / {}^{13}\text{N} / {}^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010BU04 RADIOACTIVITY  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}(\text{p}\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109
- 2010CH18 RADIOACTIVITY  ${}^{10}\text{Be}(\beta^-)$ ; measured electron spectrum; deduced  ${}^{10}\text{Be}$  activity,  $T_{1/2}$ . JOUR NIMBE 268 192
- 2010CH18 ATOMIC MASSES  ${}^9,{}^{10}\text{Be}$ ; measured ion beam intensities; deduced  ${}^{10}\text{Be} / {}^9\text{Be}$  isotope ratio. JOUR NIMBE 268 192
- 2010CH42 NUCLEAR REACTIONS  ${}^9\text{Be}({}^9\text{C}, {}^8\text{B})$ , [ ${}^9\text{C}$  beam from  ${}^9\text{Be}({}^{16}\text{O}, \text{X})$  fragmentation], E=70 MeV / nucleon; measured  $E_p$ ,  $I_p$ ,  ${}^6\text{Li}$ -p-p correlated events from an excited state (IAS of  ${}^8\text{C}$  g.s.) in  ${}^8\text{B}$  by analyzing complete kinematics of  $2\text{p}+{}^6\text{Li}$  decay products; deduced  $2\text{p}$  decay (isospin-allowed  $2\text{p}$  decay between isobaric analog states).  ${}^9\text{Be}({}^9\text{C}, {}^8\text{C})$ , [ ${}^9\text{C}$  beam from  ${}^9\text{Be}({}^{16}\text{O}, \text{X})$  fragmentation], E=70 MeV / nucleon; measured  $E_p$ ,  $I_p$ ,  ${}^6\text{Be}$ -p-p and  $\alpha$ -p-p-p correlated events from  ${}^8\text{C}$  g.s. by analyzing complete kinematics of  $2\text{p}+{}^6\text{Be}$  and  $\alpha+2\text{p}+2\text{p}$  events. JOUR PRVCA 82 041304
- 2010K019 RADIOACTIVITY  ${}^{10}\text{Be}(\beta^-)$ ; measured electron spectrum; deduced  ${}^{10}\text{Be}$  activity,  $T_{1/2}$ . Liquid scintillation counting (LSC). JOUR NIMBE 268 187
- 2010K019 ATOMIC MASSES  ${}^9,{}^{10}\text{Be}$ ; measured ion beam intensities; deduced  ${}^{10}\text{Be} / {}^9\text{Be}$  isotopic ratio. Heavy-Ion Elastic Recoil Detection (HI-ERD). JOUR NIMBE 268 187

KEYNUMBERS AND KEYWORDS

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**A=10 (continued)**

- 2010MC01 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{54}\text{Ti}, {}^{53}\text{Sc})$ ,  $E=72$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin using SeGA array,  $\sigma$ , and parallel momentum distributions in one-proton knockout reaction.  ${}^{53}\text{Sc}$ ; deduced levels,  $J$ ,  $\pi$  and configurations. Comparison with shell model calculations. JOUR PRVCA 81 024301
- 2010VE04 NUCLEAR REACTIONS  ${}^9\text{Be}({}^7\text{Li}, X)$ ,  $E=15.75, 24, 30$  MeV;  ${}^9\text{Be}({}^7\text{Be}, X)$ ,  $E=17, 19, 21$  MeV;  ${}^9\text{Be}({}^7\text{Be}, {}^6\text{Li})$ ,  $E=19, 21$  MeV; measured reaction products;  ${}^7,{}^9\text{Be}$ ,  ${}^7\text{Li}$ ; deduced  $\sigma(\theta)$ ,  $\alpha$ -energy spectra, energy dependence of the fusion  $\sigma$ . Comparison with FRDWBA calculations. JOUR ZAANE 44 385
- ${}^{10}\text{C}$  2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n}$  /  ${}^6\text{He}$  /  ${}^8\text{He}$  /  ${}^8\text{Li}$  /  ${}^9\text{Li}$  /  ${}^7\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{11}\text{Be}$  /  ${}^8\text{B}$  /  ${}^{10}\text{B}$  /  ${}^{12}\text{B}$  /  ${}^{13}\text{B}$  /  ${}^9\text{C}$  /  ${}^{10}\text{C}$  /  ${}^{11}\text{C}$  /  ${}^{12}\text{N}$  /  ${}^{13}\text{N}$  /  ${}^{15}\text{O}$ ,  $E$ =cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807

**A=11**

- ${}^{11}\text{Li}$  2009MA72 RADIOACTIVITY  ${}^{11}\text{Li}(\beta^-)$  [from Ta(p, X),  $E=1.4$  GeV]; measured decay products; deduced  $\beta$ -delayed  ${}^8\text{Li} + t$  branch of the  ${}^{11}\text{Li}$  decay, branching ratio. Comparison with Monte-Carlo calculations. JOUR ZAANE 42 415
- 2010GU04 NUCLEAR REACTIONS  ${}^{14}\text{C}(\pi^-, \text{pd})$ ,  $(\pi^-, 2\text{p})$ ,  $E=264$  MeV / nucleon; measured reaction products;  ${}^{11,12}\text{Li}$ ; deduced resonance parameters, missing mass spectra. JOUR BRSPE 74 433
- 2010NI10 NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{He}, {}^3\text{He}){}^7\text{H}$ ,  $E=42$  MeV / nucleon;  ${}^2\text{H}({}^{12}\text{Be}, {}^3\text{He}){}^{11}\text{Li}$ ,  $E=71$  MeV / nucleon; measured  ${}^3\text{He}$  spectra; deduced missing-mass spectra of  ${}^7\text{H}$ . Search for  ${}^7\text{H}$ . Comparison with DWBA calculations. JOUR PRVCA 81 064606
- ${}^{11}\text{Be}$  2009FRZV NUCLEAR REACTIONS  ${}^{12}\text{C}(\text{p}, \text{p}')$ ,  $E=66$  MeV; measured  $E_p$ ,  $I_p(\theta)$ ; deduced  $\sigma(E, \theta)$ .  ${}^9\text{Be}({}^{16}\text{O}, {}^{14}\text{O})$ ,  $E=234$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced  $\sigma(E)$ , neutron decay widths. CONF Dub(Nucl Struct and Dynamics,09) Proc,P13
- 2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, X)$ ,  $E=68.8$  MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^{7,8,9}\text{Li}$ ,  ${}^{9,10,11,12}\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009MA72 RADIOACTIVITY  ${}^{11}\text{Li}(\beta^-)$  [from Ta(p, X),  $E=1.4$  GeV]; measured decay products; deduced  $\beta$ -delayed  ${}^8\text{Li} + t$  branch of the  ${}^{11}\text{Li}$  decay, branching ratio. Comparison with Monte-Carlo calculations. JOUR ZAANE 42 415
- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n}$  /  ${}^6\text{He}$  /  ${}^8\text{He}$  /  ${}^8\text{Li}$  /  ${}^9\text{Li}$  /  ${}^7\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{11}\text{Be}$  /  ${}^8\text{B}$  /  ${}^{10}\text{B}$  /  ${}^{12}\text{B}$  /  ${}^{13}\text{B}$  /  ${}^9\text{C}$  /  ${}^{10}\text{C}$  /  ${}^{11}\text{C}$  /  ${}^{12}\text{N}$  /  ${}^{13}\text{N}$  /  ${}^{15}\text{O}$ ,  $E$ =cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807

A=11 (*continued*)

- 2010AM02 NUCLEAR REACTIONS  $^1\text{H}(^{11}\text{Be}, \text{d})$ ,  $^2\text{H}(^{10}\text{Be}, \text{p})$ ,  $(^{12}\text{B}, \text{d})$ , E=40 MeV / nucleon; measured reaction products; deduced new kinematics technique. JOUR IMPEE 19 1096
- 2010FR03 NUCLEAR REACTIONS  $^{12}\text{C}(\text{p}, \text{p}')$ , E=66 MeV; measured  $E_{\text{p}}$ ,  $I_{\text{p}}(\theta=10\approx, 16\approx, 28\approx)$ .  $^9\text{Be}(^{16}\text{O}, ^{14}\text{O})$ , E=234 MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ .  $^{11}\text{Be}$ ; deduced levels, J,  $\pi$ .  $^{11}\text{Be}$ ,  $^{12}\text{C}$  calculated levels, J,  $\pi$ , rotational and vibrational bands assuming  $2\alpha+3\text{n}$  for  $^{11}\text{Be}$  and  $3\alpha$  for  $^{12}\text{C}$ . JOUR NUPAB 834 621c
- 2010GL02 NUCLEAR REACTIONS  $^{12}\text{C}, ^{16}\text{O}(\gamma, \pi^+\text{p})$ , E<450 MeV; measured pion and proton spectra; deduced differential yield, number of isobars per nucleon. JOUR BRSPPE 74 747
- 2010MA29 NUCLEAR REACTIONS  $^9\text{Be}(^6\text{He}, ^6\text{He})$ ,  $(^6\text{He}, \alpha)$ , E=16.8 MeV; measured reaction products; deduced  $\sigma(\theta)$ , total energy,  $^{11}\text{Be}$  excitation energy spectrum. Comparison with continuum-discretised coupled-channel method (CDCC) calculations. JOUR ZAANE 43 153
- $^{11}\text{B}$  2009AG13 NUCLEAR REACTIONS  $^{6,7}\text{Li}, ^9\text{Be}, ^{12,13}\text{C}, ^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus.  $^5\text{He}, ^7\text{Li}, ^9\text{Be}, ^{11}\text{B}, ^{12,13}\text{C}, ^{15}\text{N}, ^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2009FRZW NUCLEAR REACTIONS  $^{11}\text{B}(\alpha, \alpha)$ , E=1.5-8 MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ .  $^{11}\text{B}(\alpha, \text{p})$ , E=4-7 MeV; measured  $E_{\text{p}}$ ,  $I_{\text{p}}(\theta)$ . Results to be analyzed. REPT TUNL-XLVIII,P65,France
- 2009RUZY NUCLEAR REACTIONS  $^{11}\text{B}(\gamma, \gamma')$ , E not given; measured  $E_{\gamma}$ ,  $I_{\gamma}(\theta)$  using polarized  $\gamma$ ; deduced mixing ratio, asymmetry, analyzing powers; calculated asymmetry, mixing ratio. REPT TUNL-XLVIII,P87,Rusev
- 2009TA34 NUCLEAR REACTIONS  $^{12}\text{C}(\text{e}, \text{e}'\text{p})$ , E=197.5 MeV; measured  $E_{\text{p}}$ ,  $I_{\text{p}}$ ,  $\sigma$ ,  $\sigma(\theta)$ , and reduced cross sections. Comparison with relativistic distorted-wave impulse approximation calculations and the  $^{12}\text{C}(\gamma, \text{p})$  reaction. JOUR PRVCA 80 064601
- 2010BE08 RADIOACTIVITY  $^{12}\text{C}(\beta^+)$ ,  $(\beta^-)$ , (n), (p), (IT); measured  $\gamma$ , particle spectra, limits of half-lives for Pauli-forbidden transitions using Borexino detector. Comparison with previous measurements. Test of Pauli exclusion principle for nucleons in  $^{12}\text{C}$  through search for  $\gamma$ , neutron, proton,  $\beta^-$  or  $\beta^+$  emission in Pauli-forbidden transition from  $1\text{p}_{3/2}$ -shell nucleons to the filled  $1\text{s}_{1/2}$  shell in nuclei. JOUR PRVCA 81 034317
- 2010BU04 RADIOACTIVITY  $^7\text{Li}, ^9\text{Be}, ^{11}\text{B}, ^{15}\text{N}(\text{p}\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109
- 2010GA05 NUCLEAR REACTIONS  $^{13}\text{C}(\text{d}, \alpha\gamma)$ , E=15.3 MeV; measured reaction products,  $E_{\gamma}$ ,  $I_{\gamma}$ ; deduced  $s(\theta)$ ,  $\sigma(\theta, E)$ , deuteron cluster pickup, quadrupole deformation parameter. JOUR BRSPPE 74 447
- 2010KAZZ NUCLEAR REACTIONS  $^{11}\text{B}, ^{13}\text{C}(\alpha, \alpha')$ , E=388 MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ ; deduced  $d\sigma(\theta)$  to individual states,  $B(E0)$ ; calculated  $d\sigma(\theta)$  using DWBA with parameters from elastic scattering on  $^{12}\text{C}$ . CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P95

KEYNUMBERS AND KEYWORDS

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| 2010K033                 | NUCLEAR REACTIONS $^{11}\text{B}(\text{p}, \alpha)$ , $(\text{p}, \text{p})$ , $E=2.2\text{-}4.2$ MeV; measured proton spectrum, $E\alpha$ , $I\alpha$ ; deduced yields, $\sigma(\theta)$ . Ion Beam Analysis (IBA) techniques. JOUR NIMBE 268 3539  |
| 2010LA07                 | NUCLEAR REACTIONS $^4\text{He}(^8\text{Li}, \text{n})^{11}\text{B}$ , $E=2\text{-}4$ MeV; measured reaction products, time, $E\text{n}$ , $I\text{n}$ ; deduced $\sigma$ . JOUR JPGPE 37 105105  |
| 2010R009                 | NUCLEAR REACTIONS $^7\text{Li}(^7\text{Li}, \text{t})$ , $(^7\text{Li}, \alpha)$ , $(^7\text{Li}, ^6\text{He})$ , $E=2\text{-}16$ MeV; measured reaction products, $E\text{t}$ , $I\text{t}$ , $E\alpha$ , $I\alpha$ ; deduced yields, $\sigma$ , $\sigma(\theta)$ . Comparison with DWBA analysis. JOUR APOBB 41 845  |
| $^{11}\text{C}$ 2008FAZT | NUCLEAR REACTIONS $^9\text{Be}$ , $^{12}\text{C}(^{32}\text{Mg}, ^{30}\text{Ne})$ , $E=87.6, 91.6$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced $^{30}\text{Ne}$ , $^{32}\text{Mg}$ , $^{34}\text{Si}$ $E$ , $J$ , $\pi$ , $\sigma$ ; calculated $E$ , $J$ , $\pi$ , $\sigma$ . Experiment about 50% of theoretical results; deduced details on occupied proton orbitals. Results on CD only. CONF E.Lansing (NS2008),P45,Fallon  |
| 2010AB05                 | NUCLEAR REACTIONS $\text{C}$ , $\text{N}$ , $\text{O}(\mu, \text{X})^1\text{n}$ / $^6\text{He}$ / $^8\text{He}$ / $^8\text{Li}$ / $^9\text{Li}$ / $^7\text{Be}$ / $^{10}\text{Be}$ / $^{11}\text{Be}$ / $^8\text{B}$ / $^{10}\text{B}$ / $^{12}\text{B}$ / $^{13}\text{B}$ / $^9\text{C}$ / $^{10}\text{C}$ / $^{11}\text{C}$ / $^{12}\text{N}$ / $^{13}\text{N}$ / $^{15}\text{O}$ , $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807 |
| 2010BE08                 | RADIOACTIVITY $^{12}\text{C}(\beta^+)$ , $(\beta^-)$ , $(\text{n})$ , $(\text{p})$ , $(\text{IT})$ ; measured $\gamma$ , particle spectra, limits of half-lives for Pauli-forbidden transitions using Borexino detector. Comparison with previous measurements. Test of Pauli exclusion principle for nucleons in $^{12}\text{C}$ through search for $\gamma$ , neutron, proton, $\beta^-$ or $\beta^+$ emission in Pauli-forbidden transition from $1\text{p}_{3/2}$ -shell nucleons to the filled $1\text{s}_{1/2}$ shell in nuclei. JOUR PRVCA 81 034317                        |
| 2010FA04                 | NUCLEAR REACTIONS $^9\text{Be}(^{32}\text{Mg}, ^{30}\text{Ne})$ , $E=86.7, 99.7$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , and $\sigma$ using SeGA array. $^{32}\text{Mg}$ beam from $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , $E=140$ MeV / nucleon. $^{30}\text{Ne}$ ; deduced levels, $J$ , $\pi$ , intruder configuration. $^{29,31}\text{F}$ ; discussed implications for binding energies. $^{32}\text{Mg}$ ; deduced configuration. Comparison with large-scale shell model calculations. JOUR PRVCA 81 041302  |

**A=12**

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| $^{12}\text{Li}$ 2010GU04 | NUCLEAR REACTIONS $^{14}\text{C}(\pi^-, \text{pd})$ , $(\pi^-, 2\text{p})$ , $E=264$ MeV / nucleon; measured reaction products; $^{11,12}\text{Li}$ ; deduced resonance parameters, missing mass spectra. JOUR BRSPE 74 433  |
| 2010HA04                  | NUCLEAR REACTIONS $\text{Be}(^{14}\text{B}, 2\text{p})$ , $E=53.4$ MeV / nucleon; measured neutron and $^{11}\text{Li}$ spectra from decay of $^{12}\text{Li}$ , and $(^{11}\text{Li})\text{n}$ -coin using Modular Neutron Array (MONA). $^{12}\text{Li}$ ; deduced levels, $J$ , $\pi$ . Comparisons with shell model calculations using WBP interaction. JOUR PRVCA 81 021302 |
| $^{12}\text{Be}$ 2008PIZU | NUCLEAR REACTIONS $^9\text{Be}(^{58}\text{Ni}, ^{55}\text{Ni})$ , $E=160$ MeV / nucleon; measured $^{55}\text{Ni}$ polarization; deduced magnetic moment. Results on CD only. CONF E.Lansing (NS2008),P161,Pinter  |



**A=12 (continued)**

- 2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, \text{X})$ ,  $E=68.8$  MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^{7,8,9}\text{Li}$ ,  ${}^{9,10,11,12}\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2010ET01 ATOMIC MASSES  ${}^{12}\text{Be}$ ; measured mass excess using Penning trap mass spectrometer TITAN at TRIUMF. Comparison with previous measurements and evaluations. Analyzed IMME for the lowest lying isospin  $T=2$  multiplet in the  $A=12$  system. JOUR PRVCA 81 024314
- 2010KA03 NUCLEAR REACTIONS  ${}^2\text{H}({}^{11}\text{Be}, \text{p})$ ,  $E=5$  MeV / nucleon; measured proton spectra, recoiling and product nucleus spectra,  $\text{p}(\text{nucleus})\text{-coin}$ ; deduced  $\sigma(\theta)$ ,  $Q$ -value spectra, peak widths.  ${}^{12}\text{Be}$ ; deduced energy levels,  $J$ ,  $\pi$ , spectroscopic factors using DWBA analysis. JOUR PYLBB 682 391
- 2010KA24 NUCLEAR REACTIONS  ${}^2\text{H}({}^{11}\text{Be}, {}^{12}\text{Be})$ ,  $E=5$  MeV / nucleon; measured  $E_p$ ,  $I_p(\theta)$ , (particle)p-coin; deduced  $\sigma(\theta)$  to isolated states, spectroscopic factor.  ${}^{12}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ .  ${}^{12}\text{C}({}^{24}\text{O}, {}^{23}\text{O})$ ,  $E=920$  MeV / nucleon; measured momentum distribution, spectroscopic factor. Comparison with systematics. Secondary radioactive beams. JOUR NUPAB 834 505c
- ${}^{12}\text{B}$  2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, \text{X})$ ,  $E=68.8$  MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^{7,8,9}\text{Li}$ ,  ${}^{9,10,11,12}\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2010AB05 NUCLEAR REACTIONS  $\text{C}$ ,  $\text{N}$ ,  $\text{O}(\mu, \text{X})^1\text{n}$  /  ${}^6\text{He}$  /  ${}^8\text{He}$  /  ${}^8\text{Li}$  /  ${}^9\text{Li}$  /  ${}^7\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{11}\text{Be}$  /  ${}^8\text{B}$  /  ${}^{10}\text{B}$  /  ${}^{12}\text{B}$  /  ${}^{13}\text{B}$  /  ${}^9\text{C}$  /  ${}^{10}\text{C}$  /  ${}^{11}\text{C}$  /  ${}^{12}\text{N}$  /  ${}^{13}\text{N}$  /  ${}^{15}\text{O}$ ,  $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010AM02 NUCLEAR REACTIONS  ${}^1\text{H}({}^{11}\text{Be}, \text{d})$ ,  ${}^2\text{H}({}^{10}\text{Be}, \text{p})$ ,  $({}^{12}\text{B}, \text{d})$ ,  $E=40$  MeV / nucleon; measured reaction products; deduced new kinematics technique. JOUR IMPEE 19 1096
- 2010BE08 RADIOACTIVITY  ${}^{12}\text{C}(\beta^+)$ ,  $(\beta^-)$ ,  $(\text{n})$ ,  $(\text{p})$ ,  $(\text{IT})$ ; measured  $\gamma$ , particle spectra, limits of half-lives for Pauli-forbidden transitions using Borexino detector. Comparison with previous measurements. Test of Pauli exclusion principle for nucleons in  ${}^{12}\text{C}$  through search for  $\gamma$ , neutron, proton,  $\beta^-$  or  $\beta^+$  emission in Pauli-forbidden transition from  $1\text{p}_{3/2}$ -shell nucleons to the filled  $1\text{s}_{1/2}$  shell in nuclei. JOUR PRVCA 81 034317
- 2010HY01 RADIOACTIVITY  ${}^{12}\text{N}(\beta^+)$ ,  ${}^{12}\text{B}(\beta^-)$ ; measured  $3\alpha$  summed spectra and associated branching ratios for breakup via the  ${}^8\text{Be}$  ground-state and via excited states of  ${}^8\text{Be}$ .  ${}^{12}\text{C}$ ; deduced levels, resonances, Gamow-Teller strengths and widths using multilevel, many-channel R-matrix formalism. JOUR PRVCA 81 024303
- 2010LE02 NUCLEAR REACTIONS  ${}^2\text{H}({}^{11}\text{B}, \text{p})$ ,  $E=81$  MeV;  ${}^2\text{H}({}^{12}\text{B}, \text{p})$ ,  $E=75$  MeV; measured proton and  ${}^{11,12,13}\text{B}$  particle spectra,  $\sigma(\theta)$ .  ${}^{12,13}\text{B}$ ; deduced levels,  $J$ ,  $\pi$ , l-transfers. Comparison with DWBA calculations.  ${}^{11}\text{B}$ ,  ${}^{12}\text{B}(\text{n}, \gamma)$ ; deduced reaction rates of astrophysical relevance, and abundances of  ${}^{11}\text{B}$  and  ${}^{12}\text{B}$  in r process. JOUR PRVCA 81 015802

KEYNUMBERS AND KEYWORDS

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**A=12 (continued)**

- 2010QI02 NUCLEAR REACTIONS  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{27}\text{Al}$ ,  $^{63}\text{Cu}$ ,  $^{197}\text{Au}(e, e'\pi^+)$ ,  $E < 5.8$  GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus  $Q^2$ . JOUR PRVCA 81 055209
- 2010ZH03 NUCLEAR MOMENTS  $^{12}\text{B}$ ,  $^{12}\text{N}$ ; measured  $\beta$ -NMR spectra; deduced magnetic moments, magic numbers. Comparison with shell model calculations. JOUR CPLEE 27 022102
- $^{12}\text{C}$  2008AOZX NUCLEAR REACTIONS  $^{12}\text{C}(^{17}\text{B}, ^{17}\text{B}')$ ,  $E$  not given;  $^{12}\text{C}(^{15}\text{B}, ^{15}\text{B}')$ ,  $E$  not given; measured reaction products; deduced  $Q$ , neutron effective charge. Results on CD only. CONF E.Lansing (NS2008),P52,Aoi
- 2008MEZW NUCLEAR REACTIONS  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(n, n)$ ,  $E \approx 95$  MeV;  $^1\text{H}$ ,  $^{12}\text{C}$ ,  $^{16}\text{O}(n, n')$ ,  $E \approx 95$  MeV; measured  $E_n$ ,  $I_n(\theta)$ ,  $E_p$ ,  $I_p(\theta)$ ,  $E_d$ ,  $I_d(\theta)$ ; deduced  $d\sigma(E)$ ,  $d\sigma(\theta)$ ; calculated  $d\sigma$  using different forces with and without 3N component. Compared to other data and calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P1039
- 2008OHZT NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{89}\text{Y}$ ,  $^{208}\text{Pb}(n, n)$ ,  $E = 96$  MeV; measured  $E_n$ ,  $I_n(\theta)$ ; deduced  $d\sigma(\theta)$ ; calculated  $d\sigma(\theta)$  using different models.  $^{12}\text{C}(n, n)$   $d\sigma$  compared also to  $^{12}\text{C}(p, p)$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P1023
- 2008PIZW NUCLEAR REACTIONS  $^{12}\text{C}(^{134}\text{Xe}, ^{134}\text{Xe}')$ ,  $E = 435$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ -coin.;  $^{134}\text{Xe}$ ; deduced level energies,  $J$ ,  $\pi$ ,  $B(E2)$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P325,Pietralla
- 2008ZHZV NUCLEAR REACTIONS  $^{12}\text{C}(^{17}\text{F}, ^{17}\text{F})$ ,  $E$ ; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $^{17}\text{F}$  yield. REPT CNS-REP-61,P13,Zhang
- 2009AG13 NUCLEAR REACTIONS  $^{6,7}\text{Li}$ ,  $^9\text{Be}$ ,  $^{12,13}\text{C}$ ,  $^{16}\text{O}(K^-, \pi^-)$ ,  $E$  at rest; measured negative pion spectra, proton spectra,  $p(\text{pion})$ -coin from decaying hypernucleus.  $^5\text{He}$ ,  $^7\text{Li}$ ,  $^9\text{Be}$ ,  $^{11}\text{B}$ ,  $^{12,13}\text{C}$ ,  $^{15}\text{N}$ ,  $^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2009CHZX NUCLEAR REACTIONS  $^{12}\text{C}(e, e')$ ,  $E = 73$  MeV; measured  $E(e)$ ,  $I(e)$ ,  $\theta(e)$ ; deduced monopole matrix element using also other data, formfactor, Hoyle state pair width; calculated using PWBA and Fourier-Bessel analysis. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P53,Chernykh
- 2009C024 NUCLEAR REACTIONS  $^{12}\text{C}(^{128}\text{Xe}, ^{128}\text{Xe}')$ ,  $E = 404$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ -coin, and  $\gamma$ -ray yields in Coulomb excitation using Gammasphere array.  $^{128}\text{Xe}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(E2)$ , and  $B(E2)$  ratios. Tested validity of  $E(5)$  symmetry. JOUR PRVCA 80 061304
- 2009C0ZY NUCLEAR REACTIONS  $^{12}\text{C}(^{124}\text{Xe}, ^{124}\text{Xe}')$ ,  $E = 394$  MeV;  $^{12}\text{C}(^{126}\text{Xe}, ^{126}\text{Xe}')$ ,  $E = 399$  MeV;  $^{12}\text{C}(^{128}\text{Xe}, ^{128}\text{Xe}')$ ,  $E = 404$  MeV;  $^{12}\text{C}(^{130}\text{Xe}, ^{130}\text{Xe}')$ ,  $E = 409$  MeV;  $^{12}\text{C}(^{132}\text{Xe}, ^{132}\text{Xe}')$ ,  $E = 414$  MeV;  $^{12}\text{C}(^{134}\text{Xe}, ^{134}\text{Xe}')$ ,  $E = 435$  MeV; measured Coulomb excitation  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced  $E(2^+)$ ,  $B(M1)$  strength. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P140,Coquard
- 2009FRZV NUCLEAR REACTIONS  $^{12}\text{C}(p, p')$ ,  $E = 66$  MeV; measured  $E_p$ ,  $I_p(\theta)$ ; deduced  $\sigma(E, \theta)$ .  $^9\text{Be}(^{16}\text{O}, ^{14}\text{O})$ ,  $E = 234$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced  $\sigma(E)$ , neutron decay widths. CONF Dub(Nucl Struct and Dynamics,09) Proc,P13

**A=12 (continued)**

- 2009FU17 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{16}\text{O}$ ,  $^{40,42,48}\text{Ca}$ ( $^7\text{Li}$ ,  $\text{t}\alpha$ ) $^{12}\text{C}$  /  $^{16}\text{O}$  /  $^{40}\text{Ca}$  /  $^{42}\text{Ca}$  /  $^{48}\text{Ca}$  /  $^{44}\text{Ti}$  /  $^{46}\text{Ti}$  /  $^{52}\text{Ti}$ ,  $E=26.0$  MeV; measured particle-spectra,  $\text{t}\alpha$ -coin, and  $\text{t}\alpha(\theta)$ ; deduced relative ratios of reaction cross sections.  $^{44,46,52}\text{Ti}$ ; deduced levels,  $J$ ,  $\pi$ ,  $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613
- 2009GAZU NUCLEAR REACTIONS  $^{16}\text{O}(\gamma, \alpha)$ ,  $E=9.51, 9.61, 9.72$  MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ . REPT TUNL-XLVIII,P97,Gai
- 2009MOZW NUCLEAR REACTIONS  $^1\text{H}(\text{n}, \text{n}')$ ,  $E=100$  eV-15 keV;  $^{12}\text{C}(\text{n}, \text{n}')$ ,  $E=64$ -15 keV; measured  $E\text{n}$ ,  $I\text{n}$ ,  $\theta(\text{n})$ ; deduced ( $^{12}\text{C}$   $\text{H}_2$ ) /  $^{12}\text{C}$  intensity ratio.  $^1\text{H}$  in the  $\text{CH}_2$  compound;  $^{12}\text{C}$  both as an element compound and in the form of  $\text{CH}_2$  compound. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P102,Moreh
- 2009MUZW NUCLEAR REACTIONS  $^{12}\text{C}(\text{}^{88}\text{Kr}, \text{}^{88}\text{Kr}')$ ,  $E$  not given;  $^{109}\text{Ag}(\text{}^{92}\text{Kr}, \text{}^{92}\text{Kr}')$ ,  $E$  not given; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ; deduced  $^{88,92}\text{Kr}$  B(E2).  $^{92}\text{Kr}$  B(E2) in contrast to what was supposed. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P587,Mucher
- 2009MUZX NUCLEAR REACTIONS  $^{12}\text{C}(\text{}^{70}\text{Zn}, \text{}^{70}\text{Zn}')$ ,  $E=200$  MeV; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ,  $\gamma\gamma(\theta)$ -coin.; deduced  $^{70}\text{Zn}$   $T_{1/2}$ ,  $g$ -factor,  $\nu$  orbital in the wavefunction. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P512,Mucher
- 2009PIZW NUCLEAR REACTIONS  $^{12}\text{C}(\text{}^{134}\text{Xe}, \text{}^{134}\text{Xe}')$ ,  $E=435$  MeV;  $^{12}\text{C}(\text{}^{136}\text{Ba}, \text{}^{136}\text{Ba}')$ ,  $^{12}\text{C}(\text{}^{138}\text{Ce}, \text{}^{138}\text{Ce}')$ ,  $E$  not given; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ; deduced low-lying levels,  $J$ ,  $\pi$ , B(M1); calculated low-lying levels,  $J$ ,  $\pi$ , B(M1) using IBM with mixed-symmetry states. CONF Dub(Nucl Struct and Dynamics,09) Proc,P225
- 2009RAZY NUCLEAR REACTIONS  $^{12}\text{C}(\text{}^{124}\text{Xe}, \text{}^{124}\text{Xe}')$ ,  $E=394$  MeV; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $E$ ,  $J$ ,  $\pi$ , B(E2); calculated  $E$ ,  $J$ ,  $\pi$ , B(E2) using IBM-1. Compared together, discussed O(5) and O(6) symmetry realizations. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P263,Rainovski
- 2010AG04 NUCLEAR REACTIONS  $^6,7\text{Li}$ ,  $^9\text{Be}$ ,  $^{12,13}\text{C}$ ,  $^{16}\text{O}(\text{K}^-, \pi^-)$ ,  $E$  at rest; measured  $E\text{p}$ ,  $I\text{p}$  from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247
- 2010AL10 NUCLEAR REACTIONS  $^{13}\text{C}(\text{}^{12}\text{C}, \text{}^{13}\text{C})$ ,  $(\text{}^{12}\text{C}, \text{}^{12}\text{C})$ ,  $E=10.6$  MeV / nucleon;  $^{12}\text{C}(\text{}^{22}\text{Ne}, \text{}^{22}\text{Ne})$ ,  $(\text{}^{22}\text{Ne}, \text{}^{22}\text{Ne}')$ ,  $^{13}\text{C}(\text{}^{22}\text{Ne}, \text{}^{22}\text{Ne})$ ,  $(\text{}^{22}\text{Ne}, \text{}^{23}\text{Ne})$ ,  $E=12$  MeV / nucleon; measured particle spectra,  $\sigma$  and  $\sigma(\theta)$ ; deduced optical model parameters and asymptotic normalization coefficients (ANC).  $^{22}\text{Mg}(\text{p}, \gamma)$ ; deduced direct and resonant capture rates, and effect on the depletion of  $^{22}\text{Na}$  in O-Ne Novae. JOUR PRVCA 81 035802
- 2010BE08 RADIOACTIVITY  $^{12}\text{C}(\beta^+)$ ,  $(\beta^-)$ , (n), (p), (IT); measured  $\gamma$ , particle spectra, limits of half-lives for Pauli-forbidden transitions using Borexino detector. Comparison with previous measurements. Test of Pauli exclusion principle for nucleons in  $^{12}\text{C}$  through search for  $\gamma$ , neutron, proton,  $\beta^-$  or  $\beta^+$  emission in Pauli-forbidden transition from  $1\text{p}_{3/2}$ -shell nucleons to the filled  $1\text{s}_{1/2}$  shell in nuclei. JOUR PRVCA 81 034317

**A=12 (continued)**

- 2010CH17 NUCLEAR REACTIONS  $^{12}\text{C}(e, e')$ ,  $E=29-78$  MeV; measured reaction products; deduced transition form factors, charge density, pair decay width of the Hoyle state. JOUR PRLTA 105 022501
- 2010C009 NUCLEAR REACTIONS  $^{12}\text{C}(^{130}\text{Xe}, ^{130}\text{Xe}')$ ,  $E=409$  MeV;  $^{12}\text{C}(^{132}\text{Xe}, ^{132}\text{Xe}')$ ,  $E=414$  MeV; measured  $E\gamma$ ,  $I\gamma$ , and  $\sigma$  using Gammasphere array.  $^{130}\text{Xe}$ ,  $^{132}\text{Xe}$ ; deduced  $J$ ,  $\pi$ ,  $B(E2)$ ,  $B(M1)$ , and one-phonon mixed symmetry  $2+$  states. Projectile Coulomb excitation. Systematics of level energies and  $B(M1)$  strengths of one-phonon mixed symmetry states in even-even  $^{124-134}\text{Xe}$  nuclei. JOUR PRVCA 82 024317
- 2010DE32 NUCLEAR REACTIONS  $^{12}\text{C}(^{12}\text{C}, ^{12}\text{C})$ ,  $E=240$  MeV;  $^{12}\text{C}(^{13}\text{C}, ^{13}\text{C})$ ,  $E=250$  MeV; measured  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using different optical potentials; analyzed Airy minima. JOUR NUPAB 834 473c
- 2010FR03 NUCLEAR REACTIONS  $^{12}\text{C}(p, p')$ ,  $E=66$  MeV; measured  $E_p$ ,  $I_p(\theta=10^\circ, 16^\circ, 28^\circ)$ .  $^9\text{Be}(^{16}\text{O}, ^{14}\text{O})$ ,  $E=234$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ .  $^{11}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{11}\text{Be}$ ,  $^{12}\text{C}$  calculated levels,  $J$ ,  $\pi$ , rotational and vibrational bands assuming  $2\alpha+3n$  for  $^{11}\text{Be}$  and  $3\alpha$  for  $^{12}\text{C}$ . JOUR NUPAB 834 621c
- 2010HY01 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ ,  $^{12}\text{B}(\beta^-)$ ; measured  $3\alpha$  summed spectra and associated branching ratios for breakup via the  $^8\text{Be}$  ground-state and via excited states of  $^8\text{Be}$ .  $^{12}\text{C}$ ; deduced levels, resonances, Gamow-Teller strengths and widths using multilevel, many-channel R-matrix formalism. JOUR PRVCA 81 024303
- 2010KI08 NUCLEAR REACTIONS  $^{11}\text{B}(^3\text{He}, d)$ ,  $E=8.5$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha$ - $\alpha$  coin.  $^{12}\text{C}$ ; deduced levels, resonances,  $J$ ,  $\pi$ , decays through  $^8\text{Be}$ , simulations of the Dalitz distributions based on four different theoretical models. Discussed mechanisms of sequential, democratic and three body decay modes of  $^{12}\text{C}$  resonances. JOUR PRVCA 81 064313
- 2010MA26 NUCLEAR REACTIONS  $^{14}\text{N}(p, \gamma)^{15}\text{O}$ ,  $E=278, 1058$  keV;  $^{15}\text{N}(p, \alpha)^{12}\text{C}$ ,  $E=430, 897$  keV; measured  $\gamma$ -ray spectra, yield, angular distributions, branching ratio, and resonance strengths.  $^{15}\text{O}$ ; deduced resonances. Comparison with previous measurements. JOUR PRVCA 81 055807
- 2010M014 NUCLEAR REACTIONS  $^{12}\text{C}(^{68}\text{Zn}, ^{68}\text{Zn}')$ ,  $E=180$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $(\text{particle})\gamma(\theta, H)$ , precession angles in transient fields.  $^{68}\text{Zn}$ ; deduced  $g$  factors. Coulomb excitation.  $^{62,64,66,70}\text{Zn}$ ; reanalyzed  $g$  factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
- 2010MU05 NUCLEAR REACTIONS  $^{12}\text{C}(^{12}\text{C}, 3\alpha)^{12}\text{C}$ ,  $E=101.5$  MeV; measured reaction products,  $E\alpha$ ,  $I\alpha$ ; deduced excitation energy spectrum,  $J$ ,  $\pi$ , no evidence of  $2^+$  state. JOUR JPGPE 37 105104
- 2010G03 NUCLEAR REACTIONS  $^{12}\text{C}(\alpha, \alpha')$ ,  $E(\text{cm})\approx 45-300$  MeV;  $^{12}\text{C}(^3\text{He}, ^3\text{He}')$ ,  $E(\text{cm})\approx 25-95$  MeV;  $^{12}\text{C}(d, d')$ ,  $E(\text{cm})\approx 45-170$  MeV;  $^{12}\text{C}(^6\text{Li}, ^6\text{Li}')$ ,  $E(\text{cm})\approx 82-115$  MeV;  $^{12}\text{C}(^{12}\text{C}, ^{12}\text{C}')$ ,  $E(\text{cm})\approx 61-80$  MeV; measured particle spectra, angular distributions; deduced ground and excited state diffraction radii, radii.  $^{13}\text{C}$ ; deduced neutron halo using diffractive and rainbow scattering. JOUR NUPAB 834 143c

**A=12 (continued)**

- 20100K01 NUCLEAR REACTIONS  $^{12}\text{C}(\text{p}, \text{p}')$ ,  $E=300$  MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma$ ,  $\sigma(\theta)$ ; deduced levels,  $J$ ,  $\pi$ , deformation parameters. Comparison with DWBA calculations and  $\alpha$ -cluster condensation model. JOUR PRVCA 81 054604
- 2010PIZZ NUCLEAR REACTIONS  $^{12}\text{C}(^{124}\text{Xe}, ^{124}\text{Xe}')$ ,  $E\approx 435$  MeV;  $^{12}\text{C}(^{126}\text{Xe}, ^{126}\text{Xe}')$ ,  $E\approx 435$  MeV;  $^{12}\text{C}(^{128}\text{Xe}, ^{128}\text{Xe}')$ ,  $E\approx 435$  MeV;  $^{12}\text{C}(^{130}\text{Xe}, ^{130}\text{Xe}')$ ,  $E\approx 435$  MeV;  $^{12}\text{C}(^{132}\text{Xe}, ^{132}\text{Xe}')$ ,  $E\approx 435$  MeV;  $^{12}\text{C}(^{134}\text{Xe}, ^{134}\text{Xe}')$ ,  $E\approx 435$  MeV; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ; deduced  $B(\text{M1})$  transition strength,  $E$ ,  $J$ ,  $\pi$ ; calculated transition strengths; deduced quadrupole-quadrupole proton-neutron interaction,  $^{124}\text{Xe}$   $O(6)$  symmetry breaking. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.1, P173
- 2010RA05 NUCLEAR REACTIONS  $^{12}\text{C}(^{124}\text{Xe}, ^{124}\text{Xe}')$ ,  $E=394$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using DSA technique and the Gammasphere array.  $^{124}\text{Xe}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(E2)$ . Comparison with interacting boson model. JOUR PYLBB 683 11
- 2010TA05 RADIOACTIVITY  $^{16}\text{N}(\beta^- \alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha^{12}\text{C}$ -coin, half-life; deduced  $E1$  component of the  $S$  factor for  $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$  reaction using a set of twin ionization chambers. R-matrix analysis. Comparison with previous studies. JOUR PRVCA 81 045809
- 2010T003 NUCLEAR REACTIONS  $^{12}\text{C}, ^{28}\text{Si}(\text{p}, \text{p})$ ,  $E=4.9-6.1$  MeV; measured scattered protons; deduced yields, stopping  $\sigma$ , sharp nuclear resonances. JOUR NIMBE 268 1749
- $^{12}\text{N}$  2010AB05 NUCLEAR REACTIONS  $\text{C}, \text{N}, \text{O}(\mu, \text{X})^1\text{n} / ^6\text{He} / ^8\text{He} / ^8\text{Li} / ^9\text{Li} / ^7\text{Be} / ^{10}\text{Be} / ^{11}\text{Be} / ^8\text{B} / ^{10}\text{B} / ^{12}\text{B} / ^{13}\text{B} / ^9\text{C} / ^{10}\text{C} / ^{11}\text{C} / ^{12}\text{N} / ^{13}\text{N} / ^{15}\text{O}$ ,  $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
- 2010BE08 RADIOACTIVITY  $^{12}\text{C}(\beta^+)$ ,  $(\beta^-)$ ,  $(\text{n})$ ,  $(\text{p})$ ,  $(\text{IT})$ ; measured  $\gamma$ , particle spectra, limits of half-lives for Pauli-forbidden transitions using Borexino detector. Comparison with previous measurements. Test of Pauli exclusion principle for nucleons in  $^{12}\text{C}$  through search for  $\gamma$ , neutron, proton,  $\beta^-$  or  $\beta^+$  emission in Pauli-forbidden transition from  $1\text{p}_{3/2}$ -shell nucleons to the filled  $1\text{s}_{1/2}$  shell in nuclei. JOUR PRVCA 81 034317
- 2010HY01 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ ,  $^{12}\text{B}(\beta^-)$ ; measured  $3\alpha$  summed spectra and associated branching ratios for breakup via the  $^8\text{Be}$  ground-state and via excited states of  $^8\text{Be}$ .  $^{12}\text{C}$ ; deduced levels, resonances, Gamow-Teller strengths and widths using multilevel, many-channel R-matrix formalism. JOUR PRVCA 81 024303
- 2010ZH03 NUCLEAR MOMENTS  $^{12}\text{B}, ^{12}\text{N}$ ; measured  $\beta$ -NMR spectra; deduced magnetic moments, magic numbers. Comparison with shell model calculations. JOUR CPLEE 27 022102

## A=13

<sup>13</sup> Be	2010K017	NUCLEAR REACTIONS <sup>1</sup> H( <sup>14</sup> Be, X) <sup>13</sup> Be, E=69 MeV / nucleon; measured reaction fragments; deduced $\sigma$ , $\sigma(E)$ , p- and d-wave resonance energies and widths, J, $\pi$ . Comparison with shell model calculations. JOUR PYLBB 690 245
<sup>13</sup> B	2008WUZY	NUCLEAR REACTIONS <sup>7,8</sup> Li(d, <sup>3</sup> He), E not given; <sup>7</sup> Li(d, t), E not given; <sup>2</sup> H( <sup>12</sup> B, p), E not given; measured E(particle), I(particle, $\theta$ ); deduced $d\sigma(\theta)$ , spectroscopic factors; calculated $d\sigma(\theta)$ , spectroscopic factors. Results on CD only. CONF E.Lansing (NS2008),P57,Wuosmaa
	2009IWZZ	NUCLEAR REACTIONS <sup>7</sup> Li( <sup>7</sup> Li, p), E not given; measured E $\gamma$ , I $\gamma$ , $\theta(\gamma)$ ; deduced 3.68 MeV state half-life, B(E1). Compared to near-by nuclei. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P440,Iwasaki
	2009LI51	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>26</sup> Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup> He, <sup>7,8,9</sup> Li, <sup>9,10,11,12</sup> Be, <sup>12,13,14,15,17</sup> B, <sup>15,16,17,18,19</sup> C, <sup>19,20,21</sup> N, <sup>22,23</sup> O; measured yields. JOUR PRVCA 80 054315
	2010AB05	NUCLEAR REACTIONS C, N, O( $\mu$ , X) <sup>1</sup> n / <sup>6</sup> He / <sup>8</sup> He / <sup>8</sup> Li / <sup>9</sup> Li / <sup>7</sup> Be / <sup>10</sup> Be / <sup>11</sup> Be / <sup>8</sup> B / <sup>10</sup> B / <sup>12</sup> B / <sup>13</sup> B / <sup>9</sup> C / <sup>10</sup> C / <sup>11</sup> C / <sup>12</sup> N / <sup>13</sup> N / <sup>15</sup> O, E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807
	2010BA06	NUCLEAR REACTIONS <sup>12</sup> B(d, p), E=75 MeV; measured E <sub>p</sub> , I <sub>p</sub> , recoil ions; deduced $\sigma(\theta)$ , spectroscopic factors, constrained J, $\pi$ . JOUR PRLTA 104 132501
	2010LE02	NUCLEAR REACTIONS <sup>2</sup> H( <sup>11</sup> B, p), E=81 MeV; <sup>2</sup> H( <sup>12</sup> B, p), E=75 MeV; measured proton and <sup>11,12,13</sup> B particle spectra, $\sigma(\theta)$ . <sup>12,13</sup> B; deduced levels, J, $\pi$ , l-transfers. Comparison with DWBA calculations. <sup>11</sup> B, <sup>12</sup> B(n, $\gamma$ ); deduced reaction rates of astrophysical relevance, and abundances of <sup>11</sup> B and <sup>12</sup> B in r process. JOUR PRVCA 81 015802
	2010MA44	RADIOACTIVITY <sup>28</sup> P( $\beta^+$ ); measured $\mu$ ; deduced spin components. <sup>13</sup> B( $\beta^-$ ); measured E $\beta$ , I $\beta(\theta)$ from aligned <sup>13</sup> B; deduced alignment correlation coefficient, G-parity tensor coupling constant. Discussed <sup>9</sup> C- <sup>9</sup> Li mirror pair $\mu$ and spin expectation value. JOUR NUPAB 834 424c
<sup>13</sup> C	2008GIZY	NUCLEAR REACTIONS <sup>16</sup> O(n, $\alpha$ ), E=3.95-9 MeV; measured E $\alpha$ , I $\alpha$ ; deduced $\sigma(E^*)$ . Compared to other data, ENDF / B-VI.8, ENDF / B-VII.0. CONF Nice (Nucl Data for Sci and Technol) Proc,P525
	2009AG13	NUCLEAR REACTIONS <sup>6,7</sup> Li, <sup>9</sup> Be, <sup>12,13</sup> C, <sup>16</sup> O(K <sup>-</sup> , $\pi^-$ ), E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus. <sup>5</sup> He, <sup>7</sup> Li, <sup>9</sup> Be, <sup>11</sup> B, <sup>12,13</sup> C, <sup>15</sup> N, <sup>16</sup> O; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
	2010AG04	NUCLEAR REACTIONS <sup>6,7</sup> Li, <sup>9</sup> Be, <sup>12,13</sup> C, <sup>16</sup> O(K <sup>-</sup> , $\pi^-$ ), E at rest; measured E <sub>p</sub> , I <sub>p</sub> from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247

**A=13 (continued)**

- 2010AL10 NUCLEAR REACTIONS  $^{13}\text{C}(^{12}\text{C}, ^{13}\text{C})$ ,  $(^{12}\text{C}, ^{12}\text{C})$ ,  $E=10.6$  MeV / nucleon;  $^{12}\text{C}(^{22}\text{Ne}, ^{22}\text{Ne})$ ,  $(^{22}\text{Ne}, ^{22}\text{Ne}')$ ,  $^{13}\text{C}(^{22}\text{Ne}, ^{22}\text{Ne})$ ,  $(^{22}\text{Ne}, ^{23}\text{Ne})$ ,  $E=12$  MeV / nucleon; measured particle spectra,  $\sigma$  and  $\sigma(\theta)$ ; deduced optical model parameters and asymptotic normalization coefficients (ANC).  $^{22}\text{Mg}(p, \gamma)$ ; deduced direct and resonant capture rates, and effect on the depletion of  $^{22}\text{Na}$  in O-Ne Novae. JOUR PRVCA 81 035802
- 2010KA24 NUCLEAR REACTIONS  $^2\text{H}(^{11}\text{Be}, ^{12}\text{Be})$ ,  $E=5$  MeV / nucleon; measured  $E_p$ ,  $I_p(\theta)$ , (particle)p-coin; deduced  $\sigma(\theta)$  to isolated states, spectroscopic factor.  $^{12}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{12}\text{C}(^{24}\text{O}, ^{23}\text{O})$ ,  $E=920$  MeV / nucleon; measured momentum distribution, spectroscopic factor. Comparison with systematics. Secondary radioactive beams. JOUR NUPAB 834 505c
- 2010KAZZ NUCLEAR REACTIONS  $^{11}\text{B}$ ,  $^{13}\text{C}(\alpha, \alpha')$ ,  $E=388$  MeV; measured  $E_\alpha$ ,  $I_\alpha(\theta)$ ; deduced  $d\sigma(\theta)$  to individual states,  $B(E0)$ ; calculated  $d\sigma(\theta)$  using DWBA with parameters from elastic scattering on  $^{12}\text{C}$ . CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.1, P95
- 2010MA44 RADIOACTIVITY  $^{28}\text{P}(\beta^+)$ ; measured  $\mu$ ; deduced spin components.  $^{13}\text{B}(\beta^-)$ ; measured  $E_\beta$ ,  $I_\beta(\theta)$  from aligned  $^{13}\text{B}$ ; deduced alignment correlation coefficient, G-parity tensor coupling constant. Discussed  $^9\text{C}$ - $^9\text{Li}$  mirror pair  $\mu$  and spin expectation value. JOUR NUPAB 834 424c
- 2010OG03 NUCLEAR REACTIONS  $^{12}\text{C}(\alpha, \alpha')$ ,  $E(\text{cm})\approx 45-300$  MeV;  $^{12}\text{C}(^3\text{He}, ^3\text{He}')$ ,  $E(\text{cm})\approx 25-95$  MeV;  $^{12}\text{C}(d, d')$ ,  $E(\text{cm})\approx 45-170$  MeV;  $^{12}\text{C}(^6\text{Li}, ^6\text{Li}')$ ,  $E(\text{cm})\approx 82-115$  MeV;  $^{12}\text{C}(^{12}\text{C}, ^{12}\text{C}')$ ,  $E(\text{cm})\approx 61-80$  MeV; measured particle spectra, angular distributions; deduced ground and excited state diffraction radii, radii.  $^{13}\text{C}$ ; deduced neutron halo using diffractive and rainbow scattering. JOUR NUPAB 834 143c
- 2010ROZZ NUCLEAR REACTIONS  $^9\text{Be}(^6\text{Li}, d)$ ,  $E=25.5$  MeV; measured  $E_d$ ,  $I_d(\theta)$ ; deduced  $d\sigma(\theta)$ ; calculated  $d\sigma(\theta)$  using DWBA code DWUCK5. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.2, P331
- $^{13}\text{N}$  2009R029 NUCLEAR REACTIONS  $^{12}\text{C}(^8\text{He}, ^7\text{H})$ ,  $E=15.4$  MeV / nucleon; measured  $E_t$ ,  $I_t$ , recoil spectra, (recoil)(triton)-coin; deduced correlations.  $^2\text{H}(^{56}\text{Ni}, ^{56}\text{Ni}')$ ,  $E=50$  MeV / nucleon; measured recoiling  $E_d$ ,  $I_d$ .  $^{56}\text{Ni}$ ; deduced isoscaler giant monopole and giant quadrupole resonance parameters.  $^1\text{H}(^{11}\text{Li}, ^9\text{Li})$ ,  $E=33$  MeV; measured  $E_t$ ,  $I_t$ , recoil spectra; deduced  $\sigma(\theta)$ , configurations. MAYA active target and SPIRAL radioactive beam facility at GANIL. JOUR ZAANE 42 447
- 2009WA25 NUCLEAR REACTIONS  $^1\text{H}(^{13}\text{N}, p)$ ,  $E=47.8$  MeV; measured reaction products;  $^{14}\text{O}$ ; deduced  $\sigma$ , resonance parameters,  $J$ ,  $\pi$ . Monte-Carlo simulations. JOUR CPCHC 33 181
- 2010AB05 NUCLEAR REACTIONS C, N, O( $\mu$ , X) $^1\text{n}$  /  $^6\text{He}$  /  $^8\text{He}$  /  $^8\text{Li}$  /  $^9\text{Li}$  /  $^7\text{Be}$  /  $^{10}\text{Be}$  /  $^{11}\text{Be}$  /  $^8\text{B}$  /  $^{10}\text{B}$  /  $^{12}\text{B}$  /  $^{13}\text{B}$  /  $^9\text{C}$  /  $^{10}\text{C}$  /  $^{11}\text{C}$  /  $^{12}\text{N}$  /  $^{13}\text{N}$  /  $^{15}\text{O}$ ,  $E=\text{cosmic ray muons}$ ; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807

KEYNUMBERS AND KEYWORDS

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**A=13 (continued)**

2010LI38 NUCLEAR REACTIONS  $^2\text{H}(^6\text{He}, ^7\text{Li})$ , E not given;  $^{12}\text{C}(^7\text{Li}, ^6\text{He})$ , E=44.0 MeV; measured  $\sigma(\theta)$ ; deduced  $^{12}\text{C}(p, \gamma)$  S-factor; calculated S-factor using DWBA and asymptotic normalization coefficient. Comparison with other data. JOUR NUPAB 834 661c

**A=14**

$^{14}\text{Be}$  2008SPZV RADIOACTIVITY  $^{15}\text{Be}(n)$ [from 2p knockout from  $^{17}\text{C}$  at 54 MeV / nucleon]; measured E(particle,  $\theta$ ), Z(particle),  $E_n$ ,  $\ln(\theta)$ , (particle)n-coin.  $^{14,15}\text{Be}$  deduced mass excess, Q-value. Results on CD only. CONF E.Lansing (NS2008),P177,Spyrou

$^{14}\text{B}$  2009LI51 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Mg}, X)$ , E=68.8 MeV; measured isotopic yields.  $^6\text{He}$ ,  $^7,8,9\text{Li}$ ,  $^9,10,11,12\text{Be}$ ,  $^{12,13,14,15,17}\text{B}$ ,  $^{15,16,17,18,19}\text{C}$ ,  $^{19,20,21}\text{N}$ ,  $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315

$^{14}\text{C}$  2009FRZW NUCLEAR REACTIONS  $^{11}\text{B}(\alpha, \alpha)$ , E=1.5-8 MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ .  $^{11}\text{B}(\alpha, p)$ , E=4-7 MeV; measured  $E_p$ ,  $I_p(\theta)$ . Results to be analyzed. REPT TUNL-XLVIII,P65,France

$^{14}\text{N}$  2010BU04 RADIOACTIVITY  $^7\text{Li}$ ,  $^9\text{Be}$ ,  $^{11}\text{B}$ ,  $^{15}\text{N}(p\pi^-)$ ; measured hypernuclei mesonic weak decay  $\pi^-$  spectra; deduced branching ratios, J,  $\pi$ . JOUR IMPEE 19 1109

2010MI11 NUCLEAR REACTIONS  $^{16}\text{O}(e, e'np)^{14}\text{N}$ , E=215 MeV;  $^{16}\text{O}(\gamma, pn)^{14}\text{N}$ , E=100-800 MeV; measured reaction products; deduced  $\sigma$ . Comparison with Pavia model of two-nucleon knockout predictions. JOUR ZAANE 43 137

2010PA17 NUCLEAR REACTIONS  $^{16}\text{O}(n, t)$  E=81.8-33.1 MeV; measured  $E_e$ ,  $I_e$ ; deduced yields,  $\sigma$ . Comparison with other measurements. JOUR JRNCD 285 399

2010SE06 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ , E=41 MeV;  $^1\text{H}(^{17}\text{O}, \alpha)$ , E=41 MeV; measured reaction products; deduced neutron momentum distribution,  $\sigma(\theta, E)$ ,  $\sigma$ , resonances. Trojan Horse Method. JOUR NIFBA 125 457

2010SE11 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ , E=41 MeV; measured  $\sigma$ ,  $\sigma(\theta)$ .  $^{17}\text{O}(p, \alpha)$ , E=0-0.7 MeV; deduced  $\sigma(\theta)$ .  $^{18}\text{F}$ ; deduced levels using Trojan Horse Method. JOUR NUPAB 834 676c

2010SE13 NUCLEAR REACTIONS  $^2\text{H}(^{17}\text{O}, \alpha^{14}\text{N})$ , E=41 MeV; measured  $^{14}\text{N}$  spectrum,  $\sigma(\theta)$ , momentum distribution and differential  $\sigma$  for resonances above the  $^{18}\text{F}$  proton threshold.  $^{18}\text{F}$ ; deduced resonances and levels. Comparison of experimental momentum distribution with plane-wave impulse approximation (PWIA) and distorted-wave Born approximation (DWBA) calculations.  $^{17}\text{O}(p, \alpha)^{14}\text{N}$ ; deduced reaction rates of astrophysical relevance. JOUR PRVCA 82 032801

2011GU01 NUCLEAR REACTIONS  $^{14}\text{N}(\alpha, \alpha)$ , E=2.5-4 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$ , resonance parameters. JOUR NIMBE 269 40

$^{14}\text{O}$  2008FAZT NUCLEAR REACTIONS  $^9\text{Be}$ ,  $^{12}\text{C}(^{32}\text{Mg}, ^{30}\text{Ne})$ , E=87.6, 91.6 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $^{30}\text{Ne}$ ,  $^{32}\text{Mg}$ ,  $^{34}\text{Si}$  E, J,  $\pi$ ,  $\sigma$ ; calculated E, J,  $\pi$ ,  $\sigma$ . Experiment about 50% of theoretical results; deduced details on occupied proton orbitals. Results on CD only. CONF E.Lansing (NS2008),P45,Fallon



KEYNUMBERS AND KEYWORDS

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**A=14 (continued)**

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| 2009MU17        |          | RADIOACTIVITY $^{16}\text{Ne}$ , $^{19}\text{Mg}(2p)$ , $^{15}\text{F}(p)$ [from $^9\text{Be}(^{17}\text{Ne}, ^{16}\text{Ne})$ , $E=410$ MeV / nucleon and $^9\text{Be}(^{20}\text{Mg}, ^{19}\text{Mg})$ , $E=450$ MeV / nucleon]; measured p-spectra, particle-spectra, p(particle)-coin, angular distributions / correlations; deduced $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421 |
| 2009WA25        |          | NUCLEAR REACTIONS $^1\text{H}(^{13}\text{N}, p)$ , $E=47.8$ MeV; measured reaction products; $^{14}\text{O}$ ; deduced $\sigma$ , resonance parameters, $J$ , $\pi$ . Monte-Carlo simulations. JOUR CPCHC 33 181   |
| 2010HA15        |          | NUCLEAR REACTIONS $^4\text{He}(^{14}\text{O}, \alpha)$ , $E=24, 35$ MeV; $^{18}\text{Ne}$ ; measured reaction products; deduced $^{18}\text{Ne}$ resonance parameters, $\sigma(\theta)$ . JOUR KPSJA 57 40   |
| 2010JI02        |          | NUCLEAR REACTIONS $^1\text{H}(^{17}\text{F}, \alpha)$ , $(^{17}\text{F}, \gamma)$ , $E=55.5$ MeV; measured recoil nuclei, $E\alpha$ , $I\alpha$ ; deduced $\sigma(\theta)$ , excitation function, $^{18}\text{Ne}$ resonance states, $J$ , $\pi$ . JOUR CPLEE 27 032102  |
| 2010WA18        |          | NUCLEAR REACTIONS $^2\text{H}(^{12}\text{C}, ^{13}\text{N})$ , $(^{16}\text{O}, ^{17}\text{F})$ , $E$ not given; $^1\text{H}(^{13}\text{N}, ^{13}\text{N})$ , $(^{17}\text{F}, ^{17}\text{F})$ , $E=47.8$ MeV; measured reaction products, proton spectrum; $^{14}\text{O}$ , $^{18}\text{Ne}$ ; deduced resonance parameters, $J$ , $\pi$ , $\sigma(\theta)$ ; R-matrix analysis. JOUR NUPAB 834 100c                                 |
| $^{14}\text{F}$ | 2010G016 | NUCLEAR REACTIONS $^1\text{H}(^{13}\text{O}, X)^{14}\text{F}$ , $E=31$ MeV / nucleon; $^1\text{H}(^{14}\text{O}, ^{14}\text{O})$ , $E=154$ MeV; measured reaction products, proton spectra; deduced $\sigma(\theta)$ , $J$ , $\pi$ , level scheme, resonances. Comparison with shell model calculations. JOUR PYLBB 692 307  |

**A=15**

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| $^{15}\text{Be}$ | 2008SPZV | RADIOACTIVITY $^{15}\text{Be}(n)$ [from 2p knockout from $^{17}\text{C}$ at 54 MeV / nucleon]; measured $E(\text{particle}, \theta)$ , $Z(\text{particle})$ , $E_n$ , $\ln(\theta)$ , (particle)n-coin. $^{14,15}\text{Be}$ deduced mass excess, Q-value. Results on CD only. CONF E.Lansing (NS2008),P177,Spyrou  |
| $^{15}\text{B}$  | 2009LI51 | NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Mg}, X)$ , $E=68.8$ MeV; measured isotopic yields. $^6\text{He}$ , $^{7,8,9}\text{Li}$ , $^{9,10,11,12}\text{Be}$ , $^{12,13,14,15,17}\text{B}$ , $^{15,16,17,18,19}\text{C}$ , $^{19,20,21}\text{N}$ , $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315   |
| $^{15}\text{C}$  | 2009LI51 | NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Mg}, X)$ , $E=68.8$ MeV; measured isotopic yields. $^6\text{He}$ , $^{7,8,9}\text{Li}$ , $^{9,10,11,12}\text{Be}$ , $^{12,13,14,15,17}\text{B}$ , $^{15,16,17,18,19}\text{C}$ , $^{19,20,21}\text{N}$ , $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315   |
|                  | 2010CAZX | NUCLEAR REACTIONS $^{13}\text{C}(^{18}\text{O}, ^{16}\text{O})$ , $E=84$ MeV; measured $E(\text{particle})$ , $Z(\text{particle})$ , $I(\text{particle}, \theta)$ ; deduced $d\sigma(\theta)$ , $^{15}\text{C}$ energies of levels. CONF Varenna (Nucl Reaction Mechanisms),Proc.Vol.1,P187  |
|                  | 2010GL02 | NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}(\gamma, \pi^+p)$ , $E<450$ MeV; measured pion and proton spectra; deduced differential yield, number of isobars per nucleon. JOUR BRSPE 74 747  |
| $^{15}\text{N}$  | 2009AG13 | NUCLEAR REACTIONS $^{6,7}\text{Li}$ , $^9\text{Be}$ , $^{12,13}\text{C}$ , $^{16}\text{O}(K^-, \pi^-)$ , $E$ at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus. $^5\text{He}$ , $^7\text{Li}$ , $^9\text{Be}$ , $^{11}\text{B}$ , $^{12,13}\text{C}$ , $^{15}\text{N}$ , $^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c |

KEYNUMBERS AND KEYWORDS

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**A=15 (continued)**

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|                   | 2010BU04 | RADIOACTIVITY ${}^7\text{Li}$ , ${}^9\text{Be}$ , ${}^{11}\text{B}$ , ${}^{15}\text{N}(p\pi^-)$ ; measured hypernuclei mesonic weak decay $\pi^-$ spectra; deduced branching ratios, J, $\pi$ . JOUR IMPEE 19 1109  |
|                   | 2010TA05 | NUCLEAR REACTIONS ${}^2\text{H}({}^{15}\text{N}, p){}^{15}\text{N} / {}^{16}\text{N} / {}^{16}\text{O} / {}^{20}\text{Ne}$ , E=82 MeV; measured fragment yields. JOUR PRVCA 81 045809   |
| ${}^{15}\text{O}$ | 2009LU24 | NUCLEAR REACTIONS ${}^{12}\text{C}({}^{17}\text{Ne}, X){}^{16}\text{F} / {}^{15}\text{O}$ , E=30.8 MeV / nucleon; measured reaction products, proton spectrum; deduced coincidences between protons and ${}^{15}\text{O}$ events. JOUR CPCHC 33 s01 170   |
|                   | 2009XUZZ | RADIOACTIVITY ${}^{17}\text{Ne}(2p)$ [from ${}^9\text{Be}({}^{20}\text{Ne}, X)$ ], ${}^{29}\text{S}(2p)$ [from ${}^9\text{Be}({}^{32}\text{S}, X)$ ]; measured $E_p$ , $I_p$ , pp-coin, E(particle), I(particle), (particle)p-coin. CONF Dub(Nucl Struct and Dynamics,09) Proc,P106   |
|                   | 2010AB05 | NUCLEAR REACTIONS C, N, O( $\mu$ , X) ${}^1\text{n} / {}^6\text{He} / {}^8\text{He} / {}^8\text{Li} / {}^9\text{Li} / {}^7\text{Be} / {}^{10}\text{Be} / {}^{11}\text{Be} / {}^8\text{B} / {}^{10}\text{B} / {}^{12}\text{B} / {}^{13}\text{B} / {}^9\text{C} / {}^{10}\text{C} / {}^{11}\text{C} / {}^{12}\text{N} / {}^{13}\text{N} / {}^{15}\text{O}$ , E=cosmic ray muons; measured yields of muon induced spallations produced in KamLAND scintillation detector; MUSIC, FLUKA, and GEANT4 Monte Carlo simulations. JOUR PRVCA 81 025807 |
|                   | 2010LI33 | RADIOACTIVITY ${}^{17,18}\text{Ne}$ , ${}^{29}\text{S}(2p)$ ; deduced possible 2p-decay or ${}^2\text{He}$ -decay branching ratios. JOUR NUPAB 834 450c   |
|                   | 2010MA26 | NUCLEAR REACTIONS ${}^{14}\text{N}(p, \gamma){}^{15}\text{O}$ , E=278, 1058 keV; ${}^{15}\text{N}(p, \alpha){}^{12}\text{C}$ , E=430, 897 keV; measured $\gamma$ -ray spectra, yield, angular distributions, branching ratio, and resonance strengths. ${}^{15}\text{O}$ ; deduced resonances. Comparison with previous measurements. JOUR PRVCA 81 055807  |
| ${}^{15}\text{F}$ | 2009MU17 | RADIOACTIVITY ${}^{16}\text{Ne}$ , ${}^{19}\text{Mg}(2p)$ , ${}^{15}\text{F}(p)$ [from ${}^9\text{Be}({}^{17}\text{Ne}, {}^{16}\text{Ne})$ , E=410 MeV / nucleon and ${}^9\text{Be}({}^{20}\text{Mg}, {}^{19}\text{Mg})$ , E=450 MeV / nucleon]; measured p-spectra, particle-spectra, p(particle)-coin, angular distributions / correlations; deduced $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421  |

**A=16**

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| ${}^{16}\text{B}$ | 2010SP02 | NUCLEAR REACTIONS $\text{Be}({}^{19}\text{C}, pX){}^{18}\text{B}$ , E=62 MeV / nucleon; $\text{Be}({}^{17}\text{C}, pX){}^{16}\text{B}$ , E=55 MeV / nucleon; measured decay energy spectra, (fragment)(neutron)-coin using time of flight technique with Modular Neutron Array (MoNA). ${}^{16}\text{B}$ ; deduced ground state energies. ${}^{17}\text{B}$ ; deduced level energies, J, $\pi$ . ${}^{18}\text{B}$ ; calculated level energies, J, $\pi$ . Comparison with shell model calculations using WBP interaction and other data. Secondary radioactive beam. JOUR PYLBB 683 129 |
| ${}^{16}\text{C}$ | 2008AOZX | RADIOACTIVITY ${}^{16}\text{C}(\beta^-)$ , ${}^{18}\text{C}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , E(particle), (particle) $\gamma$ -coin; deduced $T_{1/2}$ , B(E2). Results on CD only. CONF E.Lansing (NS2008),P52,Aoi   |
|                   | 2008WIZR | NUCLEAR REACTIONS ${}^9\text{Be}({}^9\text{Be}, 2p)$ , E=40 MeV; measured $E_\gamma$ , $I_\gamma$ , $E_p$ , $I_p$ , 2p $\gamma$ -coin; deduced ${}^{16}\text{C}$ 2 $^+$ state $T_{1/2}$ lifetime 2 $^+$ , B(E2), n, p transition matrix elements. Results on CD only. CONF E.Lansing (NS2008),P53,Wiedeking   |

A=16 (*continued*)

- 2008WIZT NUCLEAR REACTIONS  ${}^9\text{Be}({}^{11}\text{B}, 2\text{p})$ , E=50 MeV;  ${}^9\text{Be}({}^9\text{Be}, 2\text{p})$ , E=40 MeV; measured Ep, Ip, pp-coin, E $\gamma$ , I $\gamma$ , pp $\gamma$ -coin, pn $\gamma$ -coin; deduced  ${}^{16}\text{O}$  B(E2),  ${}^{18}\text{N}$  B(M1), low-lying state T $_{1/2}$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P548
- 2009IWZZ RADIOACTIVITY  ${}^{16,18}\text{C}(\beta^-)$ [from RIPS fragment separator]; measured E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$ ; deduced 2 $^+$ -state half-life, B(E2) using recoil shadow method. Compared to near-by nuclei. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P440,Iwasaki
- 2009LI51 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{26}\text{Mg}, \text{X})$ , E=68.8 MeV; measured isotopic yields.  ${}^6\text{He}$ ,  ${}^7,8,9\text{Li}$ ,  ${}^9,10,11,12\text{Be}$ ,  ${}^{12,13,14,15,17}\text{B}$ ,  ${}^{15,16,17,18,19}\text{C}$ ,  ${}^{19,20,21}\text{N}$ ,  ${}^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009ON02 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{16}\text{C}, {}^{16}\text{C}')$ , ( ${}^{18}\text{C}, {}^{18}\text{C}'$ ), E=72.79 MeV / nucleon;  ${}^{16,18}\text{C}$ ; measured measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, half-lives using the upgraded recoil shadow method; deduced mean lifetime, B(E2), hinderance of transition strength, proton-shell closure.  ${}^{22}\text{Ne}$  secondary beams. JOUR ZAANE 42 393
- 2010WU06 NUCLEAR REACTIONS  ${}^2\text{H}({}^{15}\text{C}, \text{p}){}^{16}\text{C}$ , E=123 MeV; measured proton spectra; deduced  $\sigma(\theta)$ , relative spectroscopic factors, excitation energies, wave functions. Comparison with shell model calculations. JOUR PRLTA 105 132501
- ${}^{16}\text{N}$  2008AOZX RADIOACTIVITY  ${}^{16}\text{C}(\beta^-)$ ,  ${}^{18}\text{C}(\beta^-)$ ; measured E $\gamma$ , I $\gamma$ , E(particle), (particle) $\gamma$ -coin; deduced T $_{1/2}$ , B(E2). Results on CD only. CONF E.Lansing (NS2008),P52,Aoi
- 2009IWZZ RADIOACTIVITY  ${}^{16,18}\text{C}(\beta^-)$ [from RIPS fragment separator]; measured E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$ ; deduced 2 $^+$ -state half-life, B(E2) using recoil shadow method. Compared to near-by nuclei. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P440,Iwasaki
- 2010TA05 RADIOACTIVITY  ${}^{16}\text{N}(\beta^- \alpha)$ ; measured E $\alpha$ , I $\alpha$ ,  $\alpha$  ${}^{12}\text{C}$ -coin, half-life; deduced E1 component of the S factor for  ${}^{12}\text{C}(\alpha, \gamma){}^{16}\text{O}$  reaction using a set of twin ionization chambers. R-matrix analysis. Comparison with previous studies. JOUR PRVCA 81 045809
- 2010TA05 NUCLEAR REACTIONS  ${}^2\text{H}({}^{15}\text{N}, \text{p}){}^{15}\text{N} / {}^{16}\text{N} / {}^{16}\text{O} / {}^{20}\text{Ne}$ , E=82 MeV; measured fragment yields. JOUR PRVCA 81 045809
- ${}^{16}\text{O}$  2008MEZW NUCLEAR REACTIONS  ${}^{1,2}\text{H}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{n}, \text{n})$ , E $\approx$ 95 MeV;  ${}^{1,2}\text{H}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{n}, \text{n}')$ , E $\approx$ 95 MeV; measured En, In( $\theta$ ), Ep, Ip( $\theta$ ), Ed, Id( $\theta$ ); deduced d $\sigma$ (E), d $\sigma$ ( $\theta$ ); calculated d $\sigma$  using different forces with and without 3N component. Compared to other data and calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P1039
- 2009AG13 NUCLEAR REACTIONS  ${}^{6,7}\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion spectra, proton spectra, p(pion)-coin from decaying hypernucleus.  ${}^5\text{He}$ ,  ${}^7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{11}\text{B}$ ,  ${}^{12,13}\text{C}$ ,  ${}^{15}\text{N}$ ,  ${}^{16}\text{O}$ ; deduced decay rates, widths and decay ratio for these hypernuclei. Comparison with other data. JOUR NUPAB 827 303c
- 2009FU17 NUCLEAR REACTIONS  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}$ ,  ${}^{40,42,48}\text{Ca}({}^7\text{Li}, \text{t}\alpha){}^{12}\text{C} / {}^{16}\text{O} / {}^{40}\text{Ca} / {}^{42}\text{Ca} / {}^{48}\text{Ca} / {}^{44}\text{Ti} / {}^{46}\text{Ti} / {}^{52}\text{Ti}$ , E=26.0 MeV; measured particle-spectra, t $\alpha$ -coin, and t $\alpha$ ( $\theta$ ); deduced relative ratios of reaction cross sections.  ${}^{44,46,52}\text{Ti}$ ; deduced levels, J,  $\pi$ ,  $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613

**A=16 (continued)**

- 2009MA70 NUCLEAR REACTIONS  $^{13}\text{C}(\alpha, \gamma)$ ,  $(\alpha, n)$ ,  $E=2.000, 2.270$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ ,  $E_n$ ,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data.  $^{27}\text{Al}$ ,  $^{127}\text{I}$ ,  $^{206,207,208}\text{Pb}(n, n')$ ,  $E=3.5-4.4$  MeV;  $^{127}\text{I}(n, \gamma)$ ,  $E=10.1-11.3$  MeV; measured  $E\gamma$ . JOUR PRVCA 80 065802
- 2010AG04 NUCLEAR REACTIONS  $^{6,7}\text{Li}$ ,  $^9\text{Be}$ ,  $^{12,13}\text{C}$ ,  $^{16}\text{O}(K^-, \pi^-)$ ,  $E$  at rest; measured  $E_p$ ,  $I_p$  from decaying hypernucleus; analyzed reaction mechanism features, final state interactions and decay width ratios. JOUR PYLBB 685 247
- 2010GI05 RADIOACTIVITY  $^{18}\text{Ne}(2p)$  [from  $\text{Pb}(^{18}\text{Ne}, ^{18}\text{Ne}')$ ,  $E=33$  MeV / nucleon]; measured reaction fragments; deduced excitation energy spectrum,  $J$ ,  $\pi$ , two-proton emission, branching ratio. JOUR IMPEE 19 1141
- 2010HA02 NUCLEAR REACTIONS  $^{12}\text{C}(^{13}\text{C}, ^9\text{Be})$ ,  $E=141$  MeV; measured reaction fragments; deduced high-spin states in  $^{16}\text{O}$ ; decay widths, precise values for the  $\alpha$ -decay branching ratios from the high-spin states. JOUR JPGPE 37 035103
- 2010LA05 NUCLEAR REACTIONS  $^2\text{H}$ ,  $^{16}\text{O}(n, n)$ ,  $E=\text{ultracold}$ ; measured  $\sigma$ ,  $\gamma$ -spectra, Bragg reflection spectra, low-temperature dependence on yield of ultracold neutrons. Liquid orthodeuterium and solid oxygen targets. Pulse-neutron incident beam. JOUR PRVCA 82 015502
- 2010LI33 RADIOACTIVITY  $^{17,18}\text{Ne}$ ,  $^{29}\text{S}(2p)$ ; deduced possible  $2p$ -decay or  $^2\text{He}$ -decay branching ratios. JOUR NUPAB 834 450c
- 2010RA14 RADIOACTIVITY  $^{18}\text{Ne}(p)$ ,  $(2p)$  [from  $^9\text{Be}(^{20}\text{Ne}, 2n)$ ,  $E=45$  MeV / nucleon]; measured excitation energy and momentum spectra; deduced decay mechanism features. JOUR NUPAB 834 464c
- 2010TA05 NUCLEAR REACTIONS  $^2\text{H}(^{15}\text{N}, p)^{15}\text{N} / ^{16}\text{N} / ^{16}\text{O} / ^{20}\text{Ne}$ ,  $E=82$  MeV; measured fragment yields. JOUR PRVCA 81 045809
- $^{16}\text{F}$  2009LU24 NUCLEAR REACTIONS  $^{12}\text{C}(^{17}\text{Ne}, X)^{16}\text{F} / ^{15}\text{O}$ ,  $E=30.8$  MeV / nucleon; measured reaction products, proton spectrum; deduced coincidences between protons and  $^{15}\text{O}$  events. JOUR CPCHC 33 s01 170
- $^{16}\text{Ne}$  2009MU17 NUCLEAR REACTIONS  $^9\text{Be}(^{20}\text{Mg}, X)^{19}\text{Mg}$ ,  $E=450$  MeV / nucleon;  $^9\text{Be}(^{17}\text{Ne}, X)^{16}\text{Ne}$ ,  $E=410$  MeV / nucleon; measured p-spectra, particle-spectra, p(particle)-coin, angular distributions / correlations.  $^{19}\text{Mg}$ ,  $^{16}\text{Ne}$ ; deduced  $2p$   $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421
- 2009MU17 RADIOACTIVITY  $^{16}\text{Ne}$ ,  $^{19}\text{Mg}(2p)$ ,  $^{15}\text{F}(p)$  [from  $^9\text{Be}(^{17}\text{Ne}, ^{16}\text{Ne})$ ,  $E=410$  MeV / nucleon and  $^9\text{Be}(^{20}\text{Mg}, ^{19}\text{Mg})$ ,  $E=450$  MeV / nucleon]; measured p-spectra, particle-spectra, p(particle)-coin, angular distributions / correlations; deduced  $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421
- 2010EL05 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{40}\text{Ar}, X)^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / E=63$  MeV / nucleon; measured yields. JOUR PRVCA 82 027305

## A=17

- <sup>17</sup>B      2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- 2010SP02      NUCLEAR REACTIONS Be(<sup>19</sup>C, pX)<sup>18</sup>B, E=62 MeV / nucleon; Be(<sup>17</sup>C, pX)<sup>16</sup>B, E=55 MeV / nucleon; measured decay energy spectra, (fragment)(neutron)-coin using time of flight technique with Modular Neutron Array (MoNA). <sup>16</sup>B; deduced ground state energies. <sup>17</sup>B; deduced level energies, J,  $\pi$ . <sup>18</sup>B; calculated level energies, J,  $\pi$ . Comparison with shell model calculations using WBP interaction and other data. Secondary radioactive beam. JOUR PYLBB 683 129
- <sup>17</sup>C      2008STZO      RADIOACTIVITY <sup>17</sup>C; <sup>19</sup>C; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced E, J; calculated E, J,  $\pi$  using shell model with WBT interaction. REPT ATOMKI 2008 Annual,P20,Stanoiu
- 2008STZO      NUCLEAR REACTIONS <sup>17</sup>C(p, p'), E not given; measured reaction products; deduced E, J,  $\pi$ . REPT ATOMKI 2008 Annual,P20,Stanoiu
- 2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- <sup>17</sup>N      2008RIZX      RADIOACTIVITY <sup>9</sup>Li, <sup>17</sup>N, <sup>87</sup>Br, <sup>88</sup>Br( $\beta^-$ )[from Pb, <sup>209</sup>Bi, Fe(p, x), E=1 GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- <sup>17</sup>O      2008RIZX      RADIOACTIVITY <sup>9</sup>Li, <sup>17</sup>N, <sup>87</sup>Br, <sup>88</sup>Br( $\beta^-$ )[from Pb, <sup>209</sup>Bi, Fe(p, x), E=1 GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- 2009CH64      NUCLEAR REACTIONS <sup>1</sup>H(<sup>17</sup>F,  $\gamma$ )<sup>18</sup>Ne, E=14.3 MeV; <sup>1</sup>H(<sup>17</sup>O,  $\gamma$ )<sup>18</sup>F, E=18.65 MeV; <sup>20</sup>Ne(<sup>17</sup>O, <sup>20</sup>Ne), E=18.65 MeV; measured recoils,  $\sigma$  at HRIBF facility; deduced widths of resonances, abundances of <sup>17,18</sup>F and <sup>17</sup>O in novae and x-ray bursts, and reaction rates for <sup>17</sup>F( $\pi$ ,  $\gamma$ )<sup>18</sup>Ne reaction; discussed astrophysical implications. JOUR PRVCA 80 065810
- 2009MA70      NUCLEAR REACTIONS <sup>13</sup>C( $\alpha$ ,  $\gamma$ ), ( $\alpha$ , n), E=2.000, 2.270 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma(\theta)$ , En,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data. <sup>27</sup>Al, <sup>127</sup>I, <sup>206,207,208</sup>Pb(n, n'), E=3.5-4.4 MeV; <sup>127</sup>I(n,  $\gamma$ ), E=10.1-11.3 MeV; measured E $\gamma$ . JOUR PRVCA 80 065802
- <sup>17</sup>F      2009BA59      NUCLEAR REACTIONS <sup>1</sup>H(<sup>7</sup>Be,  $\gamma$ ), (<sup>17</sup>F,  $\gamma$ ), (<sup>24</sup>Mg,  $\gamma$ ), E=12 MeV; <sup>7</sup>Be, <sup>17</sup>F, <sup>24</sup>Mg; measured reaction products; deduced yields,  $\sigma$  for (p,  $\gamma$ ) reactions. JOUR ZAANE 42 457
- 2010HE17      NUCLEAR REACTIONS <sup>1</sup>H(<sup>17</sup>F, p), E=44.2 MeV; measured thick target Ep, Ip( $\theta$ ), E $\gamma$ , I $\gamma$ , p $\gamma$ -coin. <sup>18</sup>Ne deduced resonance parameters using R-matrix fit. JOUR NUPAB 834 670c
- 2010RA14      RADIOACTIVITY <sup>18</sup>Ne(p), (2p) [from <sup>9</sup>Be(<sup>20</sup>Ne, 2n), E=45 MeV / nucleon]; measured excitation energy and momentum spectra; deduced decay mechanism features. JOUR NUPAB 834 464c

KEYNUMBERS AND KEYWORDS

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**A=17 (continued)**

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| $^{17}\text{Ne}$ | 2008KOYY | RADIOACTIVITY $^{17}\text{Ne}$ ; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; $^{38}\text{Ca}$ ; $^{26}\text{Al}$ ; $^{80}\text{Zn}$ ; $^{81}\text{Zn}$ ; $^{132}\text{Sn}$ ; $^{134}\text{Sn}$ ; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in $^{17}\text{Ne}$ spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska |
|                  | 2008VOZU | RADIOACTIVITY $^{19}\text{Mg}(2p)$ [from $^{24}\text{Mg}$ on $^9\text{Be}$ target]; measured E(particle), I(particle), (particle)(particle)-coin. Preliminary. Abstract is on other paper, not contained on CD. Results on CD only. CONF E.Lansing (NS2008),P190,Voss   |
|                  | 2009MU17 | RADIOACTIVITY $^{16}\text{Ne}$ , $^{19}\text{Mg}(2p)$ , $^{15}\text{F}(p)$ [from $^9\text{Be}(^{17}\text{Ne}, ^{16}\text{Ne})$ , $E=410$ MeV / nucleon and $^9\text{Be}(^{20}\text{Mg}, ^{19}\text{Mg})$ , $E=450$ MeV / nucleon]; measured p-spectra, particle-spectra, p(particle)-coin, angular distributions / correlations; deduced $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421  |
|                  | 2009XUZZ | RADIOACTIVITY $^{17}\text{Ne}(2p)$ [from $^9\text{Be}(^{20}\text{Ne}, X)$ ], $^{29}\text{S}(2p)$ [from $^9\text{Be}(^{32}\text{S}, X)$ ]; measured $E_p$ , $I_p$ , pp-coin, E(particle), I(particle), (particle)p-coin. CONF Dub(Nucl Struct and Dynamics,09) Proc,P106   |
|                  | 2010EL05 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{40}\text{Ar}, X)^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / E=63$ MeV / nucleon; measured yields. JOUR PRVCA 82 027305  |
|                  | 2010LI33 | RADIOACTIVITY $^{17,18}\text{Ne}$ , $^{29}\text{S}(2p)$ ; deduced possible 2p-decay or $^2\text{He}$ -decay branching ratios. JOUR NUPAB 834 450c   |

**A=18**

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| $^{18}\text{B}$ | 2010SP02 | NUCLEAR REACTIONS $\text{Be}(^{19}\text{C}, pX)^{18}\text{B}$ , $E=62$ MeV / nucleon; $\text{Be}(^{17}\text{C}, pX)^{16}\text{B}$ , $E=55$ MeV / nucleon; measured decay energy spectra, (fragment)(neutron)-coin using time of flight technique with Modular Neutron Array (MoNA). $^{16}\text{B}$ ; deduced ground state energies. $^{17}\text{B}$ ; deduced level energies, $J$ , $\pi$ . $^{18}\text{B}$ ; calculated level energies, $J$ , $\pi$ . Comparison with shell model calculations using WBP interaction and other data. Secondary radioactive beam. JOUR PYLBB 683 129 |
| $^{18}\text{C}$ | 2008AOZX | RADIOACTIVITY $^{16}\text{C}(\beta^-)$ , $^{18}\text{C}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , E(particle), (particle) $\gamma$ -coin; deduced $T_{1/2}$ , B(E2). Results on CD only. CONF E.Lansing (NS2008),P52,Aoi   |
|                 | 2009IWZZ | RADIOACTIVITY $^{16,18}\text{C}(\beta^-)$ [from RIPS fragment separator]; measured $E_\gamma$ , $I_\gamma$ , $\theta(\gamma)$ ; deduced $2^+$ -state half-life, B(E2) using recoil shadow method. Compared to near-by nuclei. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P440,Iwasaki   |
|                 | 2009LI51 | NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Mg}, X)$ , $E=68.8$ MeV; measured isotopic yields. $^6\text{He}$ , $^{7,8,9}\text{Li}$ , $^{9,10,11,12}\text{Be}$ , $^{12,13,14,15,17}\text{B}$ , $^{15,16,17,18,19}\text{C}$ , $^{19,20,21}\text{N}$ , $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315  |

KEYNUMBERS AND KEYWORDS

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**A=18 (continued)**

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|                   | 20090N02 | NUCLEAR REACTIONS ${}^9\text{Be}({}^{16}\text{C}, {}^{16}\text{C}')$ , ( ${}^{18}\text{C}, {}^{18}\text{C}'$ ), $E=72.79$ MeV / nucleon; ${}^{16,18}\text{C}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, half-lives using the upgraded recoil shadow method; deduced mean lifetime, $B(E2)$ , hinderance of transition strength, proton-shell closure. ${}^{22}\text{Ne}$ secondary beams. JOUR ZAANE 42 393  |
| ${}^{18}\text{N}$ | 2008AOZX | RADIOACTIVITY ${}^{16}\text{C}(\beta^-)$ , ${}^{18}\text{C}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $E(\text{particle})$ , $(\text{particle})\gamma$ -coin; deduced $T_{1/2}$ , $B(E2)$ . Results on CD only. CONF E.Lansing (NS2008),P52,Aoi  |
|                   | 2008WIZT | NUCLEAR REACTIONS ${}^9\text{Be}({}^{11}\text{B}, 2\text{p})$ , $E=50$ MeV; ${}^9\text{Be}({}^9\text{Be}, 2\text{p})$ , $E=40$ MeV; measured $E\text{p}$ , $I\text{p}$ , $\text{pp}$ -coin, $E\gamma$ , $I\gamma$ , $\text{pp}\gamma$ -coin, $\text{pn}\gamma$ -coin; deduced ${}^{16}\text{O}$ $B(E2)$ , ${}^{18}\text{N}$ $B(M1)$ , low-lying state $T_{1/2}$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P548  |
|                   | 2009IWZZ | RADIOACTIVITY ${}^{16,18}\text{C}(\beta^-)$ [from RIPS fragment separator]; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ ; deduced $2^+$ -state half-life, $B(E2)$ using recoil shadow method. Compared to near-by nuclei. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P440,Iwasaki   |
| ${}^{18}\text{O}$ | 2009J008 | NUCLEAR REACTIONS ${}^4\text{He}({}^{14}\text{C}, {}^{14}\text{C})$ , $E=25$ MeV; measured $\sigma(E, \theta)$ . ${}^{18}\text{O}$ ; deduced levels, widths, $J$ , $\pi$ using R-matrix analysis. JOUR ZAANE 42 135   |
|                   | 2009VOZX | NUCLEAR REACTIONS ${}^{12,14}\text{C}({}^7\text{Li}, \text{p})$ , $E=44$ MeV; measured $E\text{p}$ , $I\text{p}(\theta)$ , ${}^{18,20}\text{O}$ deduced rotational, cluster, molecular bands. CONF Dub(Nucl Struct and Dynamics,09) Proc,P19  |
|                   | 2010GA04 | RADIOACTIVITY ${}^{18}\text{F}(\text{EC})$ [from ${}^{18}\text{O}(\text{p}, \text{n})$ ]; measured $E\gamma$ , $I\gamma$ , $E\text{e}$ , $I\text{e}$ ; deduced $T_{1/2}$ . JOUR ARISE 68 1561   |
|                   | 2010NE03 | NUCLEAR REACTIONS ${}^{17}\text{O}(\text{p}, \gamma){}^{18}\text{O}$ , $E=151, 275, 300, 325, 400, 450, 500, 519$ keV; measured $E\gamma$ , $I\gamma$ ; deduced levels, total yields, $\sigma$ , and total S factors. Compared with previous work. JOUR PRVCA 81 045801   |
|                   | 2010V004 | NUCLEAR REACTIONS ${}^{12}\text{C}({}^7\text{Li}, \text{p})$ , $E=44$ MeV; measured reaction products; deduced proton energy spectrum and ${}^{18}\text{O}$ excitation energies, cluster, molecular and rotational bands, $\sigma(\theta)$ , $J$ , $\pi$ , resonance widths. JOUR ZAANE 43 17   |
| ${}^{18}\text{F}$ | 2009CH64 | NUCLEAR REACTIONS ${}^1\text{H}({}^{17}\text{F}, \gamma){}^{18}\text{Ne}$ , $E=14.3$ MeV; ${}^1\text{H}({}^{17}\text{O}, \gamma){}^{18}\text{F}$ , $E=18.65$ MeV; ${}^{20}\text{Ne}({}^{17}\text{O}, {}^{20}\text{Ne})$ , $E=18.65$ MeV; measured recoils, $\sigma$ at HRIBF facility; deduced widths of resonances, abundances of ${}^{17,18}\text{F}$ and ${}^{17}\text{O}$ in novae and x-ray bursts, and reaction rates for ${}^{17}\text{F}(\pi, \gamma){}^{18}\text{Ne}$ reaction; discussed astrophysical implications. JOUR PRVCA 80 065810 |
|                   | 2009NEZZ | NUCLEAR REACTIONS ${}^{17}\text{O}(\text{p}, \gamma)$ , $E=275-500$ keV; measured $E\gamma$ , $I\gamma$ . Results still to be analyzed. REPT TUNL-XLVIII,P44,Newton   |
|                   | 2010GA04 | RADIOACTIVITY ${}^{18}\text{F}(\text{EC})$ [from ${}^{18}\text{O}(\text{p}, \text{n})$ ]; measured $E\gamma$ , $I\gamma$ , $E\text{e}$ , $I\text{e}$ ; deduced $T_{1/2}$ . JOUR ARISE 68 1561   |
|                   | 2010NE03 | NUCLEAR REACTIONS ${}^{17}\text{O}(\text{p}, \gamma){}^{18}\text{O}$ , $E=151, 275, 300, 325, 400, 450, 500, 519$ keV; measured $E\gamma$ , $I\gamma$ ; deduced levels, total yields, $\sigma$ , and total S factors. Compared with previous work. JOUR PRVCA 81 045801   |
|                   | 2010SE11 | NUCLEAR REACTIONS ${}^2\text{H}({}^{17}\text{O}, \alpha){}^{14}\text{N}$ , $E=41$ MeV; measured $\sigma$ , $\sigma(\theta)$ . ${}^{17}\text{O}(\text{p}, \alpha)$ , $E=0-0.7$ MeV; deduced $\sigma(\theta)$ . ${}^{18}\text{F}$ ; deduced levels using Trojan Horse Method. JOUR NUPAB 834 676c   |

KEYNUMBERS AND KEYWORDS

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A=18 (*continued*)

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| 2010SE13                  | NUCLEAR REACTIONS $^2\text{H}(^{17}\text{O}, \alpha)^{14}\text{N}$ , E=41 MeV; measured $^{14}\text{N}$ spectrum, $\sigma(\theta)$ , momentum distribution and differential $\sigma$ for resonances above the $^{18}\text{F}$ proton threshold. $^{18}\text{F}$ ; deduced resonances and levels. Comparison of experimental momentum distribution with plane-wave impulse approximation (PWIA) and distorted-wave Born approximation (DWBA) calculations. $^{17}\text{O}(\text{p}, \alpha)^{14}\text{N}$ ; deduced reaction rates of astrophysical relevance. JOUR PRVCA 82 032801   |
| $^{18}\text{Ne}$ 2008SVZX | RADIOACTIVITY $^{62}\text{Ga}$ ; measured $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft, branching ratio; calculated isospin symmetry breaking using shell model; $^{26}\text{Na}(\beta^-)$ ; measured $I\beta(t)$ , $I\gamma(t)$ ; deduced $T_{1/2}$ ; $^{18}\text{Ne}$ ; measured $E\gamma$ , $I\gamma$ , $I\beta(t)$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ ; $^{38}\text{K}$ ; measured $I\beta(t)$ ; deduced isomer decay, $T_{1/2}$ , M3 branching ratio, log ft; $^{74}\text{Rb}$ ; measured decay products; deduced $T_{1/2}$ , branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008),P19,Svensson |
| 2009BA59                  | NUCLEAR REACTIONS $^1\text{H}(^7\text{Be}, \gamma)$ , $(^{17}\text{F}, \gamma)$ , $(^{24}\text{Mg}, \gamma)$ , E=12 MeV; $^7\text{Be}$ , $^{17}\text{F}$ , $^{24}\text{Mg}$ ; measured reaction products; deduced yields, $\sigma$ for (p, $\gamma$ ) reactions. JOUR ZAANE 42 457   |
| 2009CH64                  | NUCLEAR REACTIONS $^1\text{H}(^{17}\text{F}, \gamma)^{18}\text{Ne}$ , E=14.3 MeV; $^1\text{H}(^{17}\text{O}, \gamma)^{18}\text{F}$ , E=18.65 MeV; $^{20}\text{Ne}(^{17}\text{O}, ^{20}\text{Ne})$ , E=18.65 MeV; measured recoils, $\sigma$ at HRIBF facility; deduced widths of resonances, abundances of $^{17,18}\text{F}$ and $^{17}\text{O}$ in novae and x-ray bursts, and reaction rates for $^{17}\text{F}(\pi, \gamma)^{18}\text{Ne}$ reaction; discussed astrophysical implications. JOUR PRVCA 80 065810  |
| 2009CHZW                  | NUCLEAR REACTIONS $^1\text{H}(^{17}\text{F}, \gamma)$ , E not given; measured E(recoils), I(recoils); deduced reaction rate for $T_9=0.1-1.0$ . Compared to other papers. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P471,Chippis  |
| 2010EL05                  | NUCLEAR REACTIONS $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / \text{E}=63 \text{ MeV} / \text{nucleon}$ ; measured yields. JOUR PRVCA 82 027305   |
| 2010GI05                  | RADIOACTIVITY $^{18}\text{Ne}(2\text{p})$ [from $\text{Pb}(^{18}\text{Ne}, ^{18}\text{Ne}')$ , E=33 MeV / nucleon]; measured reaction fragments; deduced excitation energy spectrum, J, $\pi$ , two-proton emission, branching ratio. JOUR IMPEE 19 1141   |
| 2010HA15                  | NUCLEAR REACTIONS $^4\text{He}(^{14}\text{O}, \alpha)$ , E=24, 35 MeV; $^{18}\text{Ne}$ ; measured reaction products; deduced $^{18}\text{Ne}$ resonance parameters, $\sigma(\theta)$ . JOUR KPSJA 57 40   |
| 2010HE17                  | NUCLEAR REACTIONS $^1\text{H}(^{17}\text{F}, \text{p})$ , E=44.2 MeV; measured thick target $E_p$ , $I_p(\theta)$ , $E\gamma$ , $I\gamma$ , $\text{p}\gamma$ -coin. $^{18}\text{Ne}$ deduced resonance parameters using R-matrix fit. JOUR NUPAB 834 670c  |
| 2010JI02                  | NUCLEAR REACTIONS $^1\text{H}(^{17}\text{F}, \alpha)$ , $(^{17}\text{F}, \gamma)$ , E=55.5 MeV; measured recoil nuclei, $E\alpha$ , $I\alpha$ ; deduced $\sigma(\theta)$ , excitation function, $^{18}\text{Ne}$ resonance states, J, $\pi$ . JOUR CPLEE 27 032102   |
| 2010LI33                  | RADIOACTIVITY $^{17,18}\text{Ne}$ , $^{29}\text{S}(2\text{p})$ ; deduced possible 2p-decay or $^2\text{He}$ -decay branching ratios. JOUR NUPAB 834 450c   |



KEYNUMBERS AND KEYWORDS

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**A=18 (continued)**

- 2010RA14 NUCLEAR REACTIONS Pb( $^{18}\text{Ne}$ ,  $^{18}\text{Ne}'$ ), E not given; measured Coulomb excitation Ep, Ip( $\theta$ ), pp-coin, A(particle), Z(particle), excitation energy spectrum.  $^{18}\text{Ne}$ ; deduced levels, J,  $\pi$ , 2-proton decay mode. Comparison with Monte Carlo calculations. Secondary radioactive beams and kinematically complete experiment. JOUR NUPAB 834 464c
- 2010RA14 RADIOACTIVITY  $^{18}\text{Ne}(p)$ , ( $2p$ ) [from  $^9\text{Be}(^{20}\text{Ne}$ ,  $2n$ ), E=45 MeV / nucleon]; measured excitation energy and momentum spectra; deduced decay mechanism features. JOUR NUPAB 834 464c
- 2010RAZZ RADIOACTIVITY  $^{18}\text{Ne}$ [from  $^{20}\text{Ne}+^9\text{Be}$  fragmentation at 45 MeV / nucleon]; measured reaction products of proton decay and two-proton decay; deduced  $^{17}\text{F}$ ,  $^{16}\text{O}$  E, J,  $\pi$ , relative momentum spectra and angular distributions in  $^{16}\text{O}+2p$  system. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P283
- 2010TA17 NUCLEAR REACTIONS  $^{16}\text{O}$ ,  $^{28}\text{Si}(^3\text{He}$ ,  $n$ ), E=15 MeV; measured ToF neutron  $\sigma(E)$ .  $^{18}\text{Ne}$ ,  $^{30}\text{S}$ ; deduced energies of levels. JOUR NUPAB 834 679c
- 2010WA18 NUCLEAR REACTIONS  $^2\text{H}(^{12}\text{C}$ ,  $^{13}\text{N})$ , ( $^{16}\text{O}$ ,  $^{17}\text{F}$ ), E not given;  $^1\text{H}(^{13}\text{N}$ ,  $^{13}\text{N})$ , ( $^{17}\text{F}$ ,  $^{17}\text{F}$ ), E=47.8 MeV; measured reaction products, proton spectrum;  $^{14}\text{O}$ ,  $^{18}\text{Ne}$ ; deduced resonance parameters, J,  $\pi$ ,  $\sigma(\theta)$ ; R-matrix analysis. JOUR NUPAB 834 100c

**A=19**

- $^{19}\text{C}$  2008STZ0 RADIOACTIVITY  $^{17}\text{C}$ ;  $^{19}\text{C}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced E, J; calculated E, J,  $\pi$  using shell model with WBT interaction. REPT ATOMKI 2008 Annual,P20,Stanoiu
- 2009LI51 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Mg}$ , X), E=68.8 MeV; measured isotopic yields.  $^6\text{He}$ ,  $^7,8,9\text{Li}$ ,  $^9,10,11,12\text{Be}$ ,  $^{12,13,14,15,17}\text{B}$ ,  $^{15,16,17,18,19}\text{C}$ ,  $^{19,20,21}\text{N}$ ,  $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315
- 2009NA39 NUCLEAR REACTIONS Pb, C( $^{31}\text{Ne}$ ,  $^{30}\text{Ne}$ ), ( $^{19}\text{C}$ ,  $^{18}\text{C}$ ) E=230-243 MeV / nucleon;  $^{31}\text{Ne}$ ,  $^{19}\text{C}$ ; measured reaction fragments; deduced inclusive one-neutron removal  $\sigma$ , soft E1 excitations for  $^{31}\text{Ne}$ , B(E1). Secondary beams from  $^{48}\text{Ca}$  fragmentation. JOUR PRLTA 103 262501
- 2010TA04 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{C}$ ,  $^{19}\text{C}'$ ), ( $^{20}\text{C}$ ,  $^{20}\text{C}'$ ), ( $^{22}\text{C}$ ,  $^{22}\text{C}'$ ), E=40 MeV / nucleon; measured reaction products;  $^{19,20,22}\text{C}$ ; deduced  $\sigma$ , rms matter radii, neutron halo. Secondary beams from  $^{40}\text{Ar}$  fragmentation. JOUR PRLTA 104 062701
- $^{19}\text{N}$  2008SUZN RADIOACTIVITY  $^{19}\text{N}(\beta^-)$ ;  $^{20}\text{N}(\beta^-)$ ;  $^{22}\text{N}(\beta^-)$ ; measured  $I\beta$ ,  $E\gamma$ ,  $I\gamma(t)$ ,  $\beta\gamma$ -coin,  $\beta$ -delayed En, In( $\theta$ , t); deduced B(GT) distribution,  $^{22}\text{O}$  new negative parity states;  $^{23}\text{O}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ ,  $E\gamma$ ,  $I\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2009LI51 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Mg}$ , X), E=68.8 MeV; measured isotopic yields.  $^6\text{He}$ ,  $^7,8,9\text{Li}$ ,  $^9,10,11,12\text{Be}$ ,  $^{12,13,14,15,17}\text{B}$ ,  $^{15,16,17,18,19}\text{C}$ ,  $^{19,20,21}\text{N}$ ,  $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315

**A=19 (continued)**

- 2010EL05 NUCLEAR REACTIONS  $^1\text{H}(^{21}\text{N}, ^{21}\text{N}')$ , ( $^{21}\text{N}, \text{X}$ ),  $E=52.0$  MeV;  $^{208}\text{Pb}(^{21}\text{N}, ^{21}\text{N}')$ , ( $^{21}\text{N}, \text{X}$ ),  $E=48.1$  MeV, [secondary  $^{21}\text{N}$  beam from  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})$ ,  $E=63$  MeV / nucleon primary reaction]; measured particle spectra,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, cross sections.  $^{19,21}\text{N}$ ; deduced levels,  $B(E2)$ . GEANT4 simulation of  $\gamma$ -ray spectra. JOUR PRVCA 82 027305
- 2010EL05 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / E=63$  MeV / nucleon; measured yields. JOUR PRVCA 82 027305
- $^{19}\text{O}$  2008SUZN RADIOACTIVITY  $^{19}\text{N}(\beta^-)$ ;  $^{20}\text{N}(\beta^-)$ ;  $^{22}\text{N}(\beta^-)$ ; measured  $I\beta$ ,  $E_\gamma$ ,  $I_\gamma(t)$ ,  $\beta\gamma$ -coin,  $\beta$ -delayed En,  $\ln(\theta, t)$ ; deduced  $B(\text{GT})$  distribution,  $^{22}\text{O}$  new negative parity states;  $^{23}\text{O}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$ ,  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ ; calculated  $E$ ,  $J$ ,  $\pi$ ,  $E_\gamma$ ,  $I_\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumitharachchi
- 2009RAZW NUCLEAR REACTIONS  $^2\text{H}(^{20}\text{O}, \text{p})$ , ( $^{20}\text{O}, \text{t}$ ), ( $^{26}\text{Ne}, \text{p}$ ), ( $^{26}\text{Ne}, \text{t}$ ),  $E=10$  MeV / nucleon; measured heavy fragments,  $E_p$ ,  $I_p$ ,  $E_t$ ,  $I_t$ ,  $E_\gamma$ ,  $I_\gamma$ ; deduced excitation energy spectra, level scheme, energies, angular momenta, spectroscopic factors, shell closure data. REPT IPNO-T-09-07,Ramus
- 2010BE23 NUCLEAR REACTIONS  $^2\text{H}(^{20}\text{O}, ^{19}\text{O})$ ,  $E=11$  MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $(\text{particle})\gamma$ -coin.  $^{19}\text{O}$  deduced low-lying levels,  $J$ ,  $\pi$ , spectroscopic factor.  $^1\text{H}(^{14}\text{O}, ^{12}\text{O})$ ,  $E=51$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$ , excitation energy spectra,  $\sigma(\theta)$ ; deduced levels,  $J$ ,  $\pi$ ; calculated  $\sigma(\theta)$  using DWBA. MUST2, TIARA and EXOGAM detector arrays and VAMOS spectrometer. Secondary radioactive beams. JOUR NUPAB 834 446c
- 2010CAZY NUCLEAR REACTIONS  $^{19}\text{F}(^7\text{Li}, ^7\text{Be})$ ,  $E=52.2$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced  $d\sigma(\theta)$ . Preliminary. CONF Varenna (Nucl Reaction Mechanisms),Proc.Vol.1,P181
- $^{19}\text{Ne}$  2010EL05 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / E=63$  MeV / nucleon; measured yields. JOUR PRVCA 82 027305
- $^{19}\text{Mg}$  2008VOZU RADIOACTIVITY  $^{19}\text{Mg}(2p)$ [from  $^{24}\text{Mg}$  on  $^9\text{Be}$  target]; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $(\text{particle})(\text{particle})$ -coin. Preliminary. Abstract is on other paper, not contained on CD. Results on CD only. CONF E.Lansing (NS2008),P190,Voss
- 2009MU17 NUCLEAR REACTIONS  $^9\text{Be}(^{20}\text{Mg}, \text{X})^{19}\text{Mg}$ ,  $E=450$  MeV / nucleon;  $^9\text{Be}(^{17}\text{Ne}, \text{X})^{16}\text{Ne}$ ,  $E=410$  MeV / nucleon; measured p-spectra, particle-spectra,  $p(\text{particle})$ -coin, angular distributions / correlations.  $^{19}\text{Mg}$ ,  $^{16}\text{Ne}$ ; deduced  $2p T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421
- 2009MU17 RADIOACTIVITY  $^{16}\text{Ne}$ ,  $^{19}\text{Mg}(2p)$ ,  $^{15}\text{F}(p)$  [from  $^9\text{Be}(^{17}\text{Ne}, ^{16}\text{Ne})$ ,  $E=410$  MeV / nucleon and  $^9\text{Be}(^{20}\text{Mg}, ^{19}\text{Mg})$ ,  $E=450$  MeV / nucleon]; measured p-spectra, particle-spectra,  $p(\text{particle})$ -coin, angular distributions / correlations; deduced  $T_{1/2}$ . Comparison with model calculations. Secondary radioactive beam. JOUR ZAANE 42 421

## A=20

- <sup>20</sup>C      2009A0ZZ      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, X), E=345 MeV / nucleon. <sup>20,22</sup>C, <sup>29,30,31,32</sup>Ne, <sup>40,42</sup>Si measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76
- 2010TA04      NUCLEAR REACTIONS <sup>1</sup>H(<sup>19</sup>C, <sup>19</sup>C'), (<sup>20</sup>C, <sup>20</sup>C'), (<sup>22</sup>C, <sup>22</sup>C'), E=40 MeV / nucleon; measured reaction products; <sup>19,20,22</sup>C; deduced  $\sigma$ , rms matter radii, neutron halo. Secondary beams from <sup>40</sup>Ar fragmentation. JOUR PRLTA 104 062701
- <sup>20</sup>N      2008SOZT      RADIOACTIVITY <sup>20</sup>N; <sup>22</sup>N; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced E, J; calculated E, J,  $\pi$  using shell model with WBT, WBTM interactions. REPT ATOMKI 2008 Annual,P21,Sohler
- 2008SUZN      RADIOACTIVITY <sup>19</sup>N( $\beta^-$ ); <sup>20</sup>N( $\beta^-$ ); <sup>22</sup>N( $\beta^-$ ); measured I $\beta$ , E $\gamma$ , I $\gamma$ (t),  $\beta\gamma$ -coin,  $\beta$ -delayed En, In( $\theta$ , t); deduced B(GT) distribution, <sup>22</sup>O new negative parity states; <sup>23</sup>O( $\beta^-$ ); measured E $\beta$ , I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ , E $\gamma$ , I $\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-$ n) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta$ n-,  $\beta\gamma$ -,  $\beta\gamma$ n-coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- 2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- <sup>20</sup>O      2008SUZN      RADIOACTIVITY <sup>19</sup>N( $\beta^-$ ); <sup>20</sup>N( $\beta^-$ ); <sup>22</sup>N( $\beta^-$ ); measured I $\beta$ , E $\gamma$ , I $\gamma$ (t),  $\beta\gamma$ -coin,  $\beta$ -delayed En, In( $\theta$ , t); deduced B(GT) distribution, <sup>22</sup>O new negative parity states; <sup>23</sup>O( $\beta^-$ ); measured E $\beta$ , I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ , E $\gamma$ , I $\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-$ n) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta$ n-,  $\beta\gamma$ -,  $\beta\gamma$ n-coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- 2009V0ZX      NUCLEAR REACTIONS <sup>12,14</sup>C(<sup>7</sup>Li, p), E=44 MeV; measured Ep, Ip( $\theta$ ).<sup>18,20</sup>O deduced rotational, cluster, molecular bands. CONF Dub(Nucl Struct and Dynamics,09) Proc,P19
- 2010SU03      RADIOACTIVITY <sup>22</sup>N( $\beta^-$ ), ( $\beta^-$ n), ( $\beta^-$ 2n)[from Be(<sup>48</sup>Ca, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , E $\nu$ , I $\nu$ ,  $\beta\gamma$ -coin, half-lives, branching ratios; deduced logft. <sup>20,21,22</sup>O; deduced levels, J,  $\pi$ , B(GT) values. Comparison with shell model calculations. Discussed halo structure and shell closure. JOUR PRVCA 81 014302

## A=20 (continued)

- <sup>20</sup>F      2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-$ n) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta$ n-,  $\beta\gamma$ -,  $\beta\gamma$ n-coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- <sup>20</sup>Ne      2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-$ n) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta$ n-,  $\beta\gamma$ -,  $\beta\gamma$ n-coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- 2010C012      NUCLEAR REACTIONS <sup>16</sup>O( $\alpha$ ,  $\gamma$ ), E=2.5 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E $\alpha$ , I $\alpha$ . <sup>20</sup>Ne; deduced levels, J,  $\pi$ , resonances, width, yields, branching ratios, S factors, reaction rates. R-matrix analysis. JOUR PRVCA 82 035802
- 2010EL05      NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>40</sup>Ar, X)<sup>16</sup>Ne / <sup>17</sup>Ne / <sup>18</sup>Ne / <sup>19</sup>Ne / <sup>20</sup>Ne / <sup>21</sup>Ne / <sup>22</sup>Ne / E=63 MeV / nucleon; measured yields. JOUR PRVCA 82 027305
- 2010TA05      NUCLEAR REACTIONS <sup>2</sup>H(<sup>15</sup>N, p)<sup>15</sup>N / <sup>16</sup>N / <sup>16</sup>O / <sup>20</sup>Ne, E=82 MeV; measured fragment yields. JOUR PRVCA 81 045809
- 2010ZH15      RADIOACTIVITY <sup>23</sup>Al, <sup>22</sup>Mg(2p) [from <sup>12</sup>C(<sup>23</sup>Al, X), (<sup>22</sup>Mg, X), (<sup>21</sup>Na, X), (<sup>20</sup>Ne, X), E=60-70 MeV / nucleon]; measured decay products; deduced trajectories, di-proton emission. JOUR IMPEE 19 957
- <sup>20</sup>Na      2009SC28      NUCLEAR REACTIONS Ti(<sup>20</sup>Na, <sup>20</sup>Na'), (<sup>21</sup>Na, <sup>21</sup>Na'), E=1.7 MeV / nucleon; <sup>20,21</sup>Na, <sup>48</sup>Ti; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin, angular correlations and  $\gamma$ -ray yield; deduced B(E2), levels, J,  $\pi$ , mixing ratios, transition matrix elements. Tigress and Bambino arrays at TRIUMF-ISAC facility. GOSIA analysis of Coulomb excitation data. Comparisons with shell-model calculations using the USD, USDB and p-sd effective interactions employing OXBASH shell-model code. JOUR ZAANE 42 477
- 2010WR01      NUCLEAR REACTIONS <sup>20</sup>Ne, <sup>24</sup>Mg, <sup>28</sup>Si, <sup>32</sup>S, <sup>36</sup>Ar(<sup>3</sup>He, t), E=32 MeV; measured triton spectra using Q3D magnetic spectrograph; deduced levels, Q values, mass excesses. JOUR PRVCA 81 055503
- 2010WR01      ATOMIC MASSES <sup>20</sup>Na, <sup>24</sup>Al, <sup>28</sup>P, <sup>32</sup>Cl; measured mass excesses using (<sup>3</sup>He, t) reaction. <sup>36</sup>Ar(<sup>3</sup>He, t)<sup>36</sup>K used for calibration. Comparison with AME-2003. JOUR PRVCA 81 055503
- 2010WR02      NUCLEAR REACTIONS <sup>20</sup>Ne, <sup>24</sup>Mg, <sup>28</sup>Si, <sup>32</sup>S, <sup>36</sup>Ar(<sup>3</sup>He, t), E=32 MeV; measured E(t), I(t); deduced levels and resonances. <sup>19</sup>Ne, <sup>23</sup>Mg, <sup>27</sup>Si, <sup>31</sup>S, <sup>35</sup>Ar(p,  $\gamma$ ); deduced improved thermonuclear reaction rates. <sup>36</sup>Cl, <sup>36</sup>Ar, <sup>36</sup>K; analyzed A=36, T=1 triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805

## A=21

- <sup>21</sup>N      2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-n$ ) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta n^-$ ,  $\beta\gamma^-$ ,  $\beta\gamma n$ -coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- 2009LI51      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV; measured isotopic yields. <sup>6</sup>He, <sup>7,8,9</sup>Li, <sup>9,10,11,12</sup>Be, <sup>12,13,14,15,17</sup>B, <sup>15,16,17,18,19</sup>C, <sup>19,20,21</sup>N, <sup>22,23</sup>O; measured yields. JOUR PRVCA 80 054315
- 2010EL05      NUCLEAR REACTIONS <sup>1</sup>H(<sup>21</sup>N, <sup>21</sup>N'), (<sup>21</sup>N, X), E=52.0 MeV; <sup>208</sup>Pb(<sup>21</sup>N, <sup>21</sup>N'), (<sup>21</sup>N, X), E=48.1 MeV, [secondary <sup>21</sup>N beam from <sup>181</sup>Ta(<sup>40</sup>Ar, X), E=63 MeV / nucleon primary reaction]; measured particle spectra, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, cross sections. <sup>19,21</sup>N; deduced levels, B(E2). GEANT4 simulation of  $\gamma$ -ray spectra. JOUR PRVCA 82 027305
- 2010EL05      NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>40</sup>Ar, X)<sup>16</sup>Ne / <sup>17</sup>Ne / <sup>18</sup>Ne / <sup>19</sup>Ne / <sup>20</sup>Ne / <sup>21</sup>Ne / <sup>22</sup>Ne / E=63 MeV / nucleon; measured yields. JOUR PRVCA 82 027305
- <sup>21</sup>O      2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-n$ ) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta n^-$ ,  $\beta\gamma^-$ ,  $\beta\gamma n$ -coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315
- 2009NOZY      RADIOACTIVITY <sup>24</sup>O( $\beta^-$ ), (n); measured Z(particle), A(particle) using in-flight fragment separator. <sup>23</sup>O deduced spectroscopic factors,  $\sigma$ (parallel, p); calculated  $\sigma$ (parallel, p) using eikonal model. <sup>21,22,23,24</sup>O( $\beta^-$ ); measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- 2009RAZV      NUCLEAR REACTIONS <sup>2</sup>H(<sup>20</sup>O, p), (<sup>20</sup>O, t), (<sup>26</sup>Ne, p), (<sup>26</sup>Ne, t), E=10 MeV / nucleon; measured heavy fragments, Ep, Ip, Et, It, E $\gamma$ , I $\gamma$ ; deduced excitation energy spectra, level scheme, energies, angular momenta, spectroscopic factors, shell closure data. REPT IPNO-T-09-07,Ramus
- 2010SU03      RADIOACTIVITY <sup>22</sup>N( $\beta^-$ ), ( $\beta^-n$ ), ( $\beta^-2n$ )[from Be(<sup>48</sup>Ca, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , E $\nu$ , I $\nu$ ,  $\beta\gamma$ -coin, half-lives, branching ratios; deduced logft. <sup>20,21,22</sup>O; deduced levels, J,  $\pi$ , B(GT) values. Comparison with shell model calculations. Discussed halo structure and shell closure. JOUR PRVCA 81 014302
- <sup>21</sup>F      2008Y0ZV      RADIOACTIVITY <sup>21</sup>Mg;<sup>21</sup>F;<sup>71</sup>Cu;<sup>72</sup>Cu; measured  $\beta$  asymmetry using laser spectroscopy; deduced ground state  $\mu$ , quadrupole moment, spin. Results on CD only. CONF E.Lansing (NS2008),P63,Yordanov
- 2009LI51      RADIOACTIVITY <sup>21</sup>N( $\beta^-$ ), ( $\beta^-n$ ) [from <sup>9</sup>Be(<sup>26</sup>Mg, X), E=68.8 MeV]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , En, In,  $\beta n^-$ ,  $\beta\gamma^-$ ,  $\beta\gamma n$ -coin, half-lives and. delayed-neutron emission probabilities. <sup>20,21</sup>O; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations. <sup>20,21</sup>F, <sup>20,21</sup>O( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 80 054315

A=21 (*continued*)

- 2009NOZY RADIOACTIVITY  $^{24}\text{O}(\beta^-)$ , (n); measured Z(particle), A(particle) using in-flight fragment separator.  $^{23}\text{O}$  deduced spectroscopic factors,  $\sigma(\text{parallel, p})$ ; calculated  $\sigma(\text{parallel, p})$  using eikonal model.  $^{21,22,23,24}\text{O}(\beta^-)$ ; measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- $^{21}\text{Ne}$  2009ACZZ RADIOACTIVITY  $^{21}\text{Na}(\beta^+)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma(\text{GT}) / \sigma$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P362,Achouri
- 2009LI51 RADIOACTIVITY  $^{21}\text{N}(\beta^-)$ , ( $\beta^-$ n) [from  $^9\text{Be}(^{26}\text{Mg}, \text{X})$ ,  $E=68.8$  MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E_\beta$ ,  $I_\beta$ ,  $E_n$ ,  $I_n$ ,  $\beta n^-$ ,  $\beta\gamma n^-$ -coin, half-lives and. delayed-neutron emission probabilities.  $^{20,21}\text{O}$ ; deduced levels, J,  $\pi$ , branching ratios, logft values and B(GT). Comparison with shell model calculations.  $^{20,21}\text{F}$ ,  $^{20,21}\text{O}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 80 054315
- 2010AC01 RADIOACTIVITY  $^{21}\text{Na}(\beta^+)$  [from  $^1\text{H}(^{21}\text{Ne}, \text{n})$ ,  $E=30$  MeV / nucleon]; measured TOF,  $E_\gamma$ ,  $I_\gamma$ ; deduced Gamow-Teller branching ratios. JOUR JPGPE 37 045103
- 2010EL05 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / E=63$  MeV / nucleon; measured yields. JOUR PRVCA 82 027305
- 2010FR04 NUCLEAR REACTIONS  $^{12}\text{C}(^{13}\text{C}, \alpha)^{21}\text{Ne}$ ,  $E=20$  MeV; measured reaction products,  $E_\alpha$ ,  $I_\alpha$ ;  $^{21}\text{Ne}$  deduced excitation energy spectrum, J,  $\pi$ , strengths, neutron decay mode. Comparison with compilations. JOUR JPGPE 37 125102
- 2010WI07 RADIOACTIVITY  $^{21}\text{Na}$ ,  $^{213}\text{Ra}(\text{EC})$ ,  $^{225}\text{Ra}(\beta^-)$ ,  $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with  $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163
- $^{21}\text{Na}$  2009ACZZ RADIOACTIVITY  $^{21}\text{Na}(\beta^+)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma(\text{GT}) / \sigma$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P362,Achouri
- 2009MA68 NUCLEAR REACTIONS  $^{24}\text{Mg}(\text{p}, \text{t})$ ,  $E=98.7$  MeV; measured  $E(\text{t})$ ,  $I(\text{t})$ ,  $\sigma(\theta)$  using Grand-Raiden spectrometer at RCNP facility.  $^{22}\text{Mg}$ ; deduced levels, J,  $\pi$ ,  $S_\alpha$ , proton resonances. DWBA and R-matrix analyses. Comparison of level systematics with mirror nucleus  $^{22}\text{Ne}$ .  $^{18}\text{Ne}(\alpha, \text{p})^{21}\text{Na}$ ; deduced stellar reaction rates. JOUR PRVCA 80 055804
- 2009SC28 NUCLEAR REACTIONS  $\text{Ti}(^{20}\text{Na}, ^{20}\text{Na}')$ , ( $^{21}\text{Na}, ^{21}\text{Na}'$ ),  $E=1.7$  MeV / nucleon;  $^{20,21}\text{Na}$ ,  $^{48}\text{Ti}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma^-$ , (particle) $\gamma$ -coin, angular correlations and  $\gamma$ -ray yield; deduced B(E2), levels, J,  $\pi$ , mixing ratios, transition matrix elements. Tigress and Bambino arrays at TRIUMF-ISAC facility. GOSIA analysis of Coulomb excitation data. Comparisons with shell-model calculations using the USD, USDB and p-sd effective interactions employing OXBASH shell-model code. JOUR ZAANE 42 477
- 2010AC01 RADIOACTIVITY  $^{21}\text{Na}(\beta^+)$  [from  $^1\text{H}(^{21}\text{Ne}, \text{n})$ ,  $E=30$  MeV / nucleon]; measured TOF,  $E_\gamma$ ,  $I_\gamma$ ; deduced Gamow-Teller branching ratios. JOUR JPGPE 37 045103

KEYNUMBERS AND KEYWORDS

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**A=21 (continued)**

- 2010WI07 RADIOACTIVITY  $^{21}\text{Na}$ ,  $^{213}\text{Ra}(\text{EC})$ ,  $^{225}\text{Ra}(\beta^-)$ ,  $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with  $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163
- 2010ZH15 RADIOACTIVITY  $^{23}\text{Al}$ ,  $^{22}\text{Mg}(2p)$  [from  $^{12}\text{C}(^{23}\text{Al}, \text{X})$ ,  $(^{22}\text{Mg}, \text{X})$ ,  $(^{21}\text{Na}, \text{X})$ ,  $(^{20}\text{Ne}, \text{X})$ ,  $E=60\text{-}70$  MeV / nucleon]; measured decay products; deduced trajectories, di-proton emission. JOUR IMPEE 19 957
- $^{21}\text{Mg}$  2008YOZV RADIOACTIVITY  $^{21}\text{Mg}$ ;  $^{21}\text{F}$ ;  $^{71}\text{Cu}$ ;  $^{72}\text{Cu}$ ; measured  $\beta$  asymmetry using laser spectroscopy; deduced ground state  $\mu$ , quadrupole moment, spin. Results on CD only. CONF E.Lansing (NS2008),P63,Yordanov

**A=22**

- $^{22}\text{C}$  2009AOZZ NUCLEAR REACTIONS  $^9\text{Be}(^{48}\text{Ca}, \text{X})$ ,  $E=345$  MeV / nucleon.  $^{20,22}\text{C}$ ,  $^{29,30,31,32}\text{Ne}$ ,  $^{40,42}\text{Si}$  measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76
- 2010TA04 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{C}, ^{19}\text{C}')$ ,  $(^{20}\text{C}, ^{20}\text{C}')$ ,  $(^{22}\text{C}, ^{22}\text{C}')$ ,  $E=40$  MeV / nucleon; measured reaction products;  $^{19,20,22}\text{C}$ ; deduced  $\sigma$ , rms matter radii, neutron halo. Secondary beams from  $^{40}\text{Ar}$  fragmentation. JOUR PRLTA 104 062701
- $^{22}\text{N}$  2008SOZT RADIOACTIVITY  $^{20}\text{N}$ ;  $^{22}\text{N}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced E, J; calculated E, J,  $\pi$  using shell model with WBT, WBTM interactions. REPT ATOMKI 2008 Annual,P21,Sohler
- 2008SUZN RADIOACTIVITY  $^{19}\text{N}(\beta^-)$ ;  $^{20}\text{N}(\beta^-)$ ;  $^{22}\text{N}(\beta^-)$ ; measured  $I\beta$ ,  $E\gamma$ ,  $I\gamma(t)$ ,  $\beta\gamma$ -coin,  $\beta$ -delayed En,  $\text{In}(\theta, t)$ ; deduced B(GT) distribution,  $^{22}\text{O}$  new negative parity states;  $^{23}\text{O}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ ,  $E\gamma$ ,  $I\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2010SU03 RADIOACTIVITY  $^{22}\text{N}(\beta^-)$ ,  $(\beta^-n)$ ,  $(\beta^-2n)$ [from  $\text{Be}(^{48}\text{Ca}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $E\nu$ ,  $I\nu$ ,  $\beta\gamma$ -coin, half-lives, branching ratios; deduced logft.  $^{20,21,22}\text{O}$ ; deduced levels, J,  $\pi$ , B(GT) values. Comparison with shell model calculations. Discussed halo structure and shell closure. JOUR PRVCA 81 014302
- $^{22}\text{O}$  2008SUZN RADIOACTIVITY  $^{19}\text{N}(\beta^-)$ ;  $^{20}\text{N}(\beta^-)$ ;  $^{22}\text{N}(\beta^-)$ ; measured  $I\beta$ ,  $E\gamma$ ,  $I\gamma(t)$ ,  $\beta\gamma$ -coin,  $\beta$ -delayed En,  $\text{In}(\theta, t)$ ; deduced B(GT) distribution,  $^{22}\text{O}$  new negative parity states;  $^{23}\text{O}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ ,  $E\gamma$ ,  $I\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2009LI51 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Mg}, \text{X})$ ,  $E=68.8$  MeV; measured isotopic yields.  $^6\text{He}$ ,  $^7,8,9\text{Li}$ ,  $^9,10,11,12\text{Be}$ ,  $^{12,13,14,15,17}\text{B}$ ,  $^{15,16,17,18,19}\text{C}$ ,  $^{19,20,21}\text{N}$ ,  $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315

## A=22 (continued)

- 2009NOZY RADIOACTIVITY  $^{24}\text{O}(\beta^-)$ , (n); measured Z(particle), A(particle) using in-flight fragment separator.  $^{23}\text{O}$  deduced spectroscopic factors,  $\sigma(\text{parallel, p})$ ; calculated  $\sigma(\text{parallel, p})$  using eikonal model.  $^{21,22,23,24}\text{O}(\beta^-)$ ; measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- 2010SU03 RADIOACTIVITY  $^{22}\text{N}(\beta^-)$ ,  $(\beta^-n)$ ,  $(\beta^-2n)$ [from  $\text{Be}(^{48}\text{Ca, X})$ , E=140 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $E\nu$ ,  $I\nu$ ,  $\beta\gamma$ -coin, half-lives, branching ratios; deduced logft.  $^{20,21,22}\text{O}$ ; deduced levels, J,  $\pi$ , B(GT) values. Comparison with shell model calculations. Discussed halo structure and shell closure. JOUR PRVCA 81 014302
- $^{22}\text{F}$  2008MIZM RADIOACTIVITY  $^{22}\text{F}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$  using NMR; deduced  $\mu$ , quadrupole moment. Abstract only. CONF E.Lansing (NS2008),P140,Mihara
- 2008OHZS RADIOACTIVITY  $^{22}\text{F}(\beta^-)$ ,  $^{24m}\text{Al}(\beta^+)$ ,  $^{28}\text{P}(\beta^+)$ [from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo
- 2009NOZY RADIOACTIVITY  $^{24}\text{O}(\beta^-)$ , (n); measured Z(particle), A(particle) using in-flight fragment separator.  $^{23}\text{O}$  deduced spectroscopic factors,  $\sigma(\text{parallel, p})$ ; calculated  $\sigma(\text{parallel, p})$  using eikonal model.  $^{21,22,23,24}\text{O}(\beta^-)$ ; measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- 2010MI13 RADIOACTIVITY  $^{22}\text{F}(\beta^-)$  [from  $^9\text{Be}(^{22}\text{Ne, X})$ , E=100 MeV / nucleon]; measured polarized  $^{22}\text{F}$   $\beta$ -NMR, NQR spectra, momentum distribution; deduced electric quadrupole moment,  $\mu$ . JOUR NUPAB 834 75c
- $^{22}\text{Ne}$  2008MIZM RADIOACTIVITY  $^{22}\text{F}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta$  using NMR; deduced  $\mu$ , quadrupole moment. Abstract only. CONF E.Lansing (NS2008),P140,Mihara
- 2008OHZS RADIOACTIVITY  $^{22}\text{F}(\beta^-)$ ,  $^{24m}\text{Al}(\beta^+)$ ,  $^{28}\text{P}(\beta^+)$ [from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo
- 2009ON02 NUCLEAR REACTIONS  $^9\text{Be}(^{16}\text{C}, ^{16}\text{C}')$ ,  $(^{18}\text{C}, ^{18}\text{C}')$ , E=72.79 MeV / nucleon;  $^{16,18}\text{C}$ ; measured measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives using the upgraded recoil shadow method; deduced mean lifetime, B(E2), hinderance of transition strength, proton-shell closure.  $^{22}\text{Ne}$  secondary beams. JOUR ZAANE 42 393
- 2010EL05 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{40}\text{Ar, X})^{16}\text{Ne} / ^{17}\text{Ne} / ^{18}\text{Ne} / ^{19}\text{Ne} / ^{20}\text{Ne} / ^{21}\text{Ne} / ^{22}\text{Ne} / \text{E}=63 \text{ MeV} / \text{nucleon}$ ; measured yields. JOUR PRVCA 82 027305
- 2010MI13 RADIOACTIVITY  $^{22}\text{F}(\beta^-)$  [from  $^9\text{Be}(^{22}\text{Ne, X})$ , E=100 MeV / nucleon]; measured polarized  $^{22}\text{F}$   $\beta$ -NMR, NQR spectra, momentum distribution; deduced electric quadrupole moment,  $\mu$ . JOUR NUPAB 834 75c
- 2010TOZZ NUCLEAR REACTIONS  $^{14}\text{C}(^{12}\text{C}, \alpha)$ , E( $^{12}\text{C}$ )=44 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha\alpha$ -coin.  $^{22}\text{Ne}$ ; deduced levels, J,  $\pi$ , rotational structure. No detail of experiment was done. CONF St.-Petersburg,P105,Torilov
- $^{22}\text{Na}$  2010AC01 RADIOACTIVITY  $^{22}\text{Mg}(\text{EC})$ ; measured TOF,  $E\gamma$ ,  $I\gamma$ ; deduced Gamow-Teller branching ratios. JOUR JPGPE 37 045103



KEYNUMBERS AND KEYWORDS

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**A=22 (continued)**

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| 2010CH46         | NUCLEAR REACTIONS $^{24}\text{Mg}(p, ^3\text{He})$ , $E=41, 41.5$ MeV; measured $E(^3\text{He})$ , $I(^3\text{He})$ , $\sigma(\theta)$ , differential $\sigma$ $^{22}\text{Na}$ ; deduced levels, $J$ , $\pi$ , $l$ -transfers. Distorted-wave Born approximation (DWBA) analysis of $s(\theta)$ data. JOUR PRVCA 82 047302  |
| 2011TA02         | NUCLEAR REACTIONS $^{27}\text{Al}(d, X)^{22}\text{Na} / ^{24}\text{Na}$ , $\text{Ti}(d, X)^{48}\text{V}$ , $\text{In}(d, X)^{113}\text{Sn} / ^{111}\text{In} / ^{113}\text{In} / ^{114}\text{In} / ^{115}\text{In} / ^{116}\text{In} / ^{111}\text{Cd} / ^{115}\text{Cd}$ , $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thick target yields, $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26   |
| $^{22}\text{Mg}$ | 2009MA68 NUCLEAR REACTIONS $^{24}\text{Mg}(p, t)$ , $E=98.7$ MeV; measured $E(t)$ , $I(t)$ , $\sigma(\theta)$ using Grand-Raiden spectrometer at RCNP facility. $^{22}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , $S_\alpha$ , proton resonances. DWBA and R-matrix analyses. Comparison of level systematics with mirror nucleus $^{22}\text{Ne}$ . $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ ; deduced stellar reaction rates. JOUR PRVCA 80 055804 |
| 2010AC01         | RADIOACTIVITY $^{22}\text{Mg}(\text{EC})$ ; measured TOF, $E\gamma$ , $I\gamma$ ; deduced Gamow-Teller branching ratios. JOUR JPGPE 37 045103  |
| 2010ZH15         | RADIOACTIVITY $^{23}\text{Al}$ , $^{22}\text{Mg}(2p)$ [from $^{12}\text{C}(^{23}\text{Al}, X)$ , $(^{22}\text{Mg}, X)$ , $(^{21}\text{Na}, X)$ , $(^{20}\text{Ne}, X)$ , $E=60-70$ MeV / nucleon]; measured decay products; deduced trajectories, di-proton emission. JOUR IMPEE 19 957  |

**A=23**

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| $^{23}\text{O}$ | 2008FRZY NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Ne}, 2pX)^{23}\text{O} / ^{24}\text{O}$ , $E=86$ MeV / nucleon; measured reaction products; $^{23}\text{O}$ deduced energy levels, $J$ , $\pi$ for unbound states. Two-proton knockout reactions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P23, Frank  |
| 2008SUZN        | RADIOACTIVITY $^{19}\text{N}(\beta^-)$ ; $^{20}\text{N}(\beta^-)$ ; $^{22}\text{N}(\beta^-)$ ; measured $I\beta$ , $E\gamma$ , $I\gamma(t)$ , $\beta\gamma$ -coin, $\beta$ -delayed $E_n$ , $\text{In}(\theta, t)$ ; deduced B(GT) distribution, $^{22}\text{O}$ new negative parity states; $^{23}\text{O}(\beta^-)$ ; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $E$ , $J$ , $\pi$ ; calculated $E$ , $J$ , $\pi$ , $E\gamma$ , $I\gamma$ using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi |
| 2009LI51        | NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Mg}, X)$ , $E=68.8$ MeV; measured isotopic yields. $^6\text{He}$ , $^{7,8,9}\text{Li}$ , $^{9,10,11,12}\text{Be}$ , $^{12,13,14,15,17}\text{B}$ , $^{15,16,17,18,19}\text{C}$ , $^{19,20,21}\text{N}$ , $^{22,23}\text{O}$ ; measured yields. JOUR PRVCA 80 054315  |
| 2009NOZY        | RADIOACTIVITY $^{24}\text{O}(\beta^-)$ , (n); measured $Z(\text{particle})$ , $A(\text{particle})$ using in-flight fragment separator. $^{23}\text{O}$ deduced spectroscopic factors, $\sigma(\text{parallel}, p)$ ; calculated $\sigma(\text{parallel}, p)$ using eikonal model. $^{21,22,23,24}\text{O}(\beta^-)$ ; measured $\text{In removal } \sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90   |

**A=23 (continued)**

- <sup>23</sup>F      2008SUZN      RADIOACTIVITY <sup>19</sup>N( $\beta^-$ ); <sup>20</sup>N( $\beta^-$ ); <sup>22</sup>N( $\beta^-$ ); measured I $\beta$ , E $\gamma$ , I $\gamma$ (t),  $\beta\gamma$ -coin,  $\beta$ -delayed En, In( $\theta$ , t); deduced B(GT) distribution, <sup>22</sup>O new negative parity states; <sup>23</sup>O( $\beta^-$ ); measured E $\beta$ , I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ ; calculated E, J,  $\pi$ , E $\gamma$ , I $\gamma$  using sd-shell model space with USDB interactions; deduced neutron emission probability. Results on CD only. CONF E.Lansing (NS2008),P11,Sumithrarachchi
- 2009NOZY      RADIOACTIVITY <sup>24</sup>O( $\beta^-$ ), (n); measured Z(particle), A(particle) using in-flight fragment separator. <sup>23</sup>O deduced spectroscopic factors,  $\sigma$ (parallel, p); calculated  $\sigma$ (parallel, p) using eikonal model. <sup>21,22,23,24</sup>O( $\beta^-$ ); measured ln removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- <sup>23</sup>Ne      2008MAZE      RADIOACTIVITY <sup>23</sup>Al(EC), <sup>23</sup>Ne( $\beta^-$ ), <sup>24m</sup>Al(IT), (EC), <sup>28</sup>P(EC), <sup>28</sup>Al( $\beta^-$ ); measured  $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta
- 2009BEZQ      NUCLEAR REACTIONS <sup>22</sup>Ne(n,  $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ,  $\sigma$ (E $\gamma$ ). CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P367,Belgys
- <sup>23</sup>Na      2008MAZE      RADIOACTIVITY <sup>23</sup>Al(EC), <sup>23</sup>Ne( $\beta^-$ ), <sup>24m</sup>Al(IT), (EC), <sup>28</sup>P(EC), <sup>28</sup>Al( $\beta^-$ ); measured  $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta
- 2010L005      NUCLEAR REACTIONS <sup>22</sup>Ne, <sup>27</sup>Al(p,  $\gamma$ ), E=400-505 keV; measured E $\gamma$ , I $\gamma$ , yields and resonance strengths. Comparison with previous data. Relevance to of resonance strengths in the <sup>22</sup>Ne(p,  $\gamma$ )<sup>23</sup>Na hydrogen-burning reaction and in the <sup>22</sup>Ne( $\alpha$ ,  $\gamma$ ) s-process neutron-source reactions. JOUR PRVCA 81 055804
- <sup>23</sup>Mg      2008MAZE      RADIOACTIVITY <sup>23</sup>Al(EC), <sup>23</sup>Ne( $\beta^-$ ), <sup>24m</sup>Al(IT), (EC), <sup>28</sup>P(EC), <sup>28</sup>Al( $\beta^-$ ); measured  $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta
- 2009IC06      RADIOACTIVITY <sup>24</sup>Si( $\beta^+$ ), ( $\beta^+$ p) [from <sup>9</sup>Be, Ni(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , Ep, Ip,  $\beta\gamma^-$ ,  $\gamma\gamma$ -coin, T<sub>1/2</sub> at RIKEN RIPS facility. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J,  $\pi$ , branching ratios, emission probabilities. JOUR ZAANE 42 375
- 2010FUZZ      NUCLEAR REACTIONS <sup>9</sup>Be, <sup>23</sup>Na, <sup>25</sup>Mg, <sup>42</sup>Ca, <sup>46</sup>Ti, <sup>50</sup>Cr, <sup>54</sup>Fe, <sup>58</sup>Ni, <sup>118</sup>Sn(<sup>3</sup>He, t), E=140 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , reaction products; deduced d $\sigma$ (E); GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39
- 2010SA26      NUCLEAR REACTIONS <sup>22</sup>Na(p,  $\gamma$ ), E not given; measured E $\gamma$ , I $\gamma$ ; deduced proton resonances energies and strengths,  $\sigma$ , reaction rates. JOUR PRLTA 105 152501
- <sup>23</sup>Al      2008MAZE      RADIOACTIVITY <sup>23</sup>Al(EC), <sup>23</sup>Ne( $\beta^-$ ), <sup>24m</sup>Al(IT), (EC), <sup>28</sup>P(EC), <sup>28</sup>Al( $\beta^-$ ); measured  $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta

**A=23 (continued)**

- 2009NAZV RADIOACTIVITY  $^{23}\text{Al}$ [from  $^9\text{Be}+^{24}\text{Mg}$  at 100 MeV / nucleon]; measured  $\beta$ -NMR from polarized source; deduced electric quadrupole moment. REPT RIKEN 2008 Annual,P23,Nagatomo
- 2010AL10 NUCLEAR REACTIONS  $^{13}\text{C}(^{12}\text{C}, ^{13}\text{C}), (^{12}\text{C}, ^{12}\text{C}), E=10.6$  MeV / nucleon;  $^{12}\text{C}(^{22}\text{Ne}, ^{22}\text{Ne}), (^{22}\text{Ne}, ^{22}\text{Ne}'), ^{13}\text{C}(^{22}\text{Ne}, ^{22}\text{Ne}), (^{22}\text{Ne}, ^{23}\text{Ne}), E=12$  MeV / nucleon; measured particle spectra,  $\sigma$  and  $\sigma(\theta)$ ; deduced optical model parameters and asymptotic normalization coefficients (ANC).  $^{22}\text{Mg}(p, \gamma)$ ; deduced direct and resonant capture rates, and effect on the depletion of  $^{22}\text{Na}$  in O-Ne Novae. JOUR PRVCA 81 035802
- 2010ZH15 RADIOACTIVITY  $^{23}\text{Al}, ^{22}\text{Mg}(2p)$  [from  $^{12}\text{C}(^{23}\text{Al}, X), (^{22}\text{Mg}, X), (^{21}\text{Na}, X), (^{20}\text{Ne}, X), E=60-70$  MeV / nucleon]; measured decay products; deduced trajectories, di-proton emission. JOUR IMPEE 19 957

**A=24**

- $^{24}\text{O}$  2008FRZY NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Ne}, 2pX)^{23}\text{O} / ^{24}\text{O}, E=86$  MeV / nucleon; measured reaction products;  $^{23}\text{O}$  deduced energy levels, J,  $\pi$  for unbound states. Two-proton knockout reactions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P23, Frank
- 2009NOZY RADIOACTIVITY  $^{24}\text{O}(\beta^-), (n)$ ; measured Z(particle), A(particle) using in-flight fragment separator.  $^{23}\text{O}$  deduced spectroscopic factors,  $\sigma(\text{parallel}, p)$ ; calculated  $\sigma(\text{parallel}, p)$  using eikonal model.  $^{21,22,23,24}\text{O}(\beta^-)$ ; measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- $^{24}\text{F}$  2009NOZY RADIOACTIVITY  $^{24}\text{O}(\beta^-), (n)$ ; measured Z(particle), A(particle) using in-flight fragment separator.  $^{23}\text{O}$  deduced spectroscopic factors,  $\sigma(\text{parallel}, p)$ ; calculated  $\sigma(\text{parallel}, p)$  using eikonal model.  $^{21,22,23,24}\text{O}(\beta^-)$ ; measured 1n removal  $\sigma$ , FWHM. Compared to other data. CONF Dub(Nucl Struct and Dynamics,09) Proc,P90
- $^{24}\text{Ne}$  2010R023 NUCLEAR REACTIONS  $\text{Be}(^{14}\text{C}, ^{13}\text{C}), (^{15}\text{C}, ^{14}\text{C}), (^{16}\text{C}, ^{15}\text{C}), (^{17}\text{C}, ^{16}\text{C}), (^{18}\text{C}, ^{17}\text{C}), (^{19}\text{C}, ^{18}\text{C}), (^{16}\text{N}, ^{15}\text{N}), (^{17}\text{N}, ^{16}\text{N}), (^{18}\text{N}, ^{17}\text{N}), (^{19}\text{N}, ^{18}\text{N}), (^{20}\text{N}, ^{19}\text{N}), (^{21}\text{N}, ^{20}\text{N}), (^{22}\text{N}, ^{21}\text{N}), (^{19}\text{O}, ^{18}\text{O}), (^{20}\text{O}, ^{19}\text{O}), (^{21}\text{O}, ^{20}\text{O}), (^{22}\text{O}, ^{21}\text{O}), (^{23}\text{O}, ^{22}\text{O}), (^{21}\text{F}, ^{20}\text{F}), (^{22}\text{F}, ^{21}\text{F}), (^{23}\text{F}, ^{22}\text{F}), (^{24}\text{F}, ^{23}\text{F}), (^{25}\text{F}, ^{24}\text{F}), (^{26}\text{F}, ^{25}\text{F}), (^{24}\text{Ne}, ^{23}\text{Ne}), (^{25}\text{Ne}, ^{24}\text{Ne}), (^{26}\text{Ne}, ^{25}\text{Ne}), (^{27}\text{Ne}, ^{26}\text{Ne}), (^{28}\text{Ne}, ^{27}\text{Ne}), (^{27}\text{Na}, ^{26}\text{Na}), (^{28}\text{Na}, ^{27}\text{Na}), (^{29}\text{Na}, ^{28}\text{Na}), (^{30}\text{Na}, ^{29}\text{Na}), (^{31}\text{Na}, ^{30}\text{Na}), (^{31}\text{Mg}, ^{30}\text{Mg}), (^{32}\text{Mg}, ^{31}\text{Mg}), (^{33}\text{Mg}, ^{32}\text{Mg}), (^{34}\text{Al}, ^{33}\text{Al}), (^{35}\text{Al}, ^{34}\text{Al}), E<700$  MeV / nucleon, [secondary beams from  $\text{Be}(^{40}\text{Ar}, X), E=700$  MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions.  $^{26}\text{F}$ ; possible anomalous structure.  $^{24,25,26,27,28}\text{Ne}$ ; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305

KEYNUMBERS AND KEYWORDS

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**A=24 (continued)**

$^{24}\text{Na}$	2008BEZI	NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{p}\alpha)$ , $E \approx 3\text{-}22$ MeV; $^{27}\text{Al}(\text{d}, 2\text{p})$ , $E \approx 3\text{-}20$ MeV; $^{27}\text{Al}(\text{d}, \text{p})$ , $E \approx 3\text{-}20$ MeV; $^{63,65}\text{Cu}(\text{d}, 2\text{n})$ , $E \approx 3\text{-}20$ MeV; $^{63}\text{Cu}(\text{d}, \text{p})$ , $E \approx 3\text{-}20$ MeV; $^{65}\text{Cu}(\text{d}, 2\text{p})$ , $E \approx 3\text{-}20$ MeV; $^{65}\text{Cu}(\text{d}, 3\text{p})$ , $E \approx 3\text{-}20$ MeV; measured $E\gamma$ , $I\gamma(\text{t})$ ; deduced $\sigma$ , $T_{1/2}$ . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
	2008MIZT	NUCLEAR REACTIONS $^{23}\text{Na}$ , $^{27}\text{Al}(\text{n}, \gamma)$ , $E=\text{thermal}$ ; measured $E\gamma$ , $I\gamma$ ; deduced $\gamma$ emission probability. New method suggested, shown to be consistent. CONF Nice (Nucl Data for Sci and Technol) Proc,P451
	2008OCZZ	NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{x})^{24}\text{Na}$ , $^{51}\text{V}(\text{d}, 4\text{n})$ , $\text{Fe}(\text{d}, \text{x})^{54}\text{Mn}$ , $\text{Fe}(\text{d}, \text{x})^{56}\text{Co}$ , $\text{Ni}(\text{d}, \text{x})^{57}\text{Co}$ , $\text{Cu}(\text{d}, \text{x})^{63}\text{Zn}$ , $\text{Ta}(\text{d}, \text{x})^{180}\text{Ta}$ , $\text{W}(\text{d}, \text{x})^{182}\text{Re}$ , $^{197}\text{Au}(\text{d}, \text{x})^{194}\text{Au}$ , $E=25, 35, 41, 50$ MeV; $\text{Cr}(\text{d}, \text{x})^{48}\text{V}$ , $\text{Cr}(\text{d}, \text{x})^{52}\text{Mn}$ , $^{55}\text{Mn}(\text{d}, \text{x})^{54}\text{Mn}$ , $\text{Ni}(\text{d}, \text{x})^{56}\text{Co}$ , $E=39.5$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011
	2010KR02	NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{197}\text{Au}$ , $^{59}\text{Co}$ , $\text{In}$ , $^{181}\text{Ta}(\text{n}, \gamma)$ , $(\text{n}, \alpha)$ , $(\text{n}, \text{xn})$ , $E=1$ GeV; $^{191,192,193,194,196,198}\text{Au}$ , $^{24}\text{Na}$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced yields, $\sigma$ . JOUR NIMAE 615 70
	2010LU01	NUCLEAR REACTIONS $^{152,154,160}\text{Gd}$ , $^{93}\text{Nb}(\text{n}, 2\text{n})$ , $^{156,157,158}\text{Gd}(\text{n}, \text{p})$ , $^{27}\text{Al}$ , $^{158}\text{Gd}(\text{n}, \alpha)$ , $E=13.5\text{-}14.8$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127
	2010N004	NUCLEAR REACTIONS $^{12}\text{C}(\text{C}^{13}, \text{p})$ , $E(\text{cm})=2.6\text{-}5.0$ MeV; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma\text{-coin}$ , thick target yield; deduced $\sigma$ , astrophysical S-factor. Comparison with data and calculations. JOUR NUPAB 834 192c
	2010SZ03	NUCLEAR REACTIONS $^{192}\text{Os}(\text{p}, \text{n})$ , $(\text{p}, 3\text{n})$ , $(\text{p}, 4\text{n})$ , $(\text{p}, 5\text{n})$ , $(\text{p}, 6\text{n})$ , $\text{Cu}(\text{p}, \text{n})^{65}\text{Zn}$ , $\text{Al}(\text{p}, \text{X})^{24}\text{Na}$ , $\text{Cu}(\text{p}, \text{X})^{62}\text{Zn}$ $E < 66$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306
	2011TA01	NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{X})^{24}\text{Na}$ , $^{100}\text{Mo}(\text{d}, \text{X})^{99}\text{Tc}$ / $^{99}\text{Mo}$ / $^{98}\text{Nb}$ / $^{97}\text{Nb}$ , $E < 50$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and their uncertainties. Comparison with with ALICE-D, EMPIRE-D and TALYS codes. JOUR ARISE 69 18
	2011TA02	NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{X})^{22}\text{Na}$ / $^{24}\text{Na}$ , $\text{Ti}(\text{d}, \text{X})^{48}\text{V}$ , $\text{In}(\text{d}, \text{X})^{113}\text{Sn}$ / $^{111}\text{In}$ / $^{113}\text{In}$ / $^{114}\text{In}$ / $^{115}\text{In}$ / $^{116}\text{In}$ / $^{111}\text{Cd}$ / $^{115}\text{Cd}$ , $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thick target yields, $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26
	$^{24}\text{Mg}$	2008MAZE
2008OHZS		RADIOACTIVITY $^{22}\text{F}(\beta^-)$ , $^{24\text{m}}\text{Al}(\beta^+)$ , $^{28}\text{P}(\beta^+)$ [from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo

KEYNUMBERS AND KEYWORDS

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**A=24 (continued)**

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|                  | 2008PAZG | NUCLEAR REACTIONS $^{24}\text{Mg}(^{90}\text{Zr}, ^{90}\text{Zr}')$ , $E=2.3$ MeV / nucleon; $^{24}\text{Mg}(^{92}\text{Mo}, ^{92}\text{Mo}')$ , $E=2.3$ MeV / nucleon; measured Coulomb excitation $E\gamma$ , $I\gamma$ ; $^{27}\text{Al}(^{84}\text{Se}, ^{84}\text{Se}')$ , $E=193.2$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $B(E2)$ , $E$ , $J$ , $\pi$ . Compared with Brown's calculations. Results on CD only. CONF E.Lansing (NS2008),P51,Padilla-Rodal                            |
|                  | 2009BA59 | NUCLEAR REACTIONS $^1\text{H}(^7\text{Be}, \gamma)$ , $(^{17}\text{F}, \gamma)$ , $(^{24}\text{Mg}, \gamma)$ , $E=12$ MeV; $^7\text{Be}$ , $^{17}\text{F}$ , $^{24}\text{Mg}$ ; measured reaction products; deduced yields, $\sigma$ for $(p, \gamma)$ reactions. JOUR ZAANE 42 457  |
|                  | 2009Y009 | NUCLEAR REACTIONS $^{24}\text{Mg}(\alpha, \alpha')$ , $E=240$ MeV; measured $E\alpha$ , $I\alpha$ , $\sigma(\theta)$ ; deduced strength distributions, widths, EWSR and other parameters for isoscalar E0-GMR, E1-GDR, E2-GQR and E3-GOR giant excitations in 9-60 MeV region, DWBA analysis. JOUR PRVCA 80 064318   |
| $^{24}\text{Al}$ | 2008MAZE | RADIOACTIVITY $^{23}\text{Al}(EC)$ , $^{23}\text{Ne}(\beta^-)$ , $^{24m}\text{Al}(IT)$ , $(EC)$ , $^{28}\text{P}(EC)$ , $^{28}\text{Al}(\beta^-)$ ; measured $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta  |
|                  | 2008OHZS | RADIOACTIVITY $^{22}\text{F}(\beta^-)$ , $^{24m}\text{Al}(\beta^+)$ , $^{28}\text{P}(\beta^+)$ [from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo   |
|                  | 2009IC06 | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ , $(\beta^+p)$ [from $^9\text{Be}$ , $\text{Ni}(^{28}\text{Si}, X)$ , $E=100$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $E_p$ , $I_p$ , $\beta\gamma^-$ , $\gamma\gamma$ -coin, $T_{1/2}$ at RIKEN RIPS facility. $^{24}\text{Al}$ , $^{23}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , branching ratios, emission probabilities. JOUR ZAANE 42 375   |
|                  | 2009ICZX | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ [from $\text{Ni}(^{28}\text{Si}, X)$ , $E=100$ MeV / nucleon]; measured $E\beta$ , $I\beta$ , $\beta$ -delayed $E\gamma$ , $I\gamma$ , $E(\text{particle})$ ; deduced $B(GT)$ asymmetry; calculated $B(GT)$ . CONF Dub(Nucl Struct and Dynamics,09) Proc,P98   |
|                  | 2010ER02 | NUCLEAR REACTIONS $^{23}\text{Mg}(p, \gamma)^{24}\text{Al}$ , $E=500$ keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma^-$ , (recoil) $\gamma$ -coin, (recoil) $\gamma(t)$ , thick target yields, resonance strengths; deduced resonance, reaction rates. DRAGON recoil spectrometer. GEANT3 simulations. JOUR PRVCA 81 045808   |
|                  | 2010WR01 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured triton spectra using Q3D magnetic spectrograph; deduced levels, $Q$ values, mass excesses. JOUR PRVCA 81 055503   |
|                  | 2010WR01 | ATOMIC MASSES $^{20}\text{Na}$ , $^{24}\text{Al}$ , $^{28}\text{P}$ , $^{32}\text{Cl}$ ; measured mass excesses using $(^3\text{He}, t)$ reaction. $^{36}\text{Ar}(^3\text{He}, t)^{36}\text{K}$ used for calibration. Comparison with AME-2003. JOUR PRVCA 81 055503  |
|                  | 2010WR02 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured $E(t)$ , $I(t)$ ; deduced levels and resonances. $^{19}\text{Ne}$ , $^{23}\text{Mg}$ , $^{27}\text{Si}$ , $^{31}\text{S}$ , $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates. $^{36}\text{Cl}$ , $^{36}\text{Ar}$ , $^{36}\text{K}$ ; analyzed $A=36$ , $T=1$ triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805 |
| $^{24}\text{Si}$ | 2009IC06 | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ , $(\beta^+p)$ [from $^9\text{Be}$ , $\text{Ni}(^{28}\text{Si}, X)$ , $E=100$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $E_p$ , $I_p$ , $\beta\gamma^-$ , $\gamma\gamma$ -coin, $T_{1/2}$ at RIKEN RIPS facility. $^{24}\text{Al}$ , $^{23}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , branching ratios, emission probabilities. JOUR ZAANE 42 375   |

KEYNUMBERS AND KEYWORDS

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**A=24 (continued)**

2009ICZX RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ [from Ni( $^{28}\text{Si}$ , X), E=100 MeV / nucleon]; measured E $\beta$ , I $\beta$ ,  $\beta$ -delayed E $\gamma$ , I $\gamma$ , E(particle); deduced B(GT) asymmetry; calculated B(GT). CONF Dub(Nucl Struct and Dynamics,09) Proc,P98

**A=25**

$^{25}\text{Ne}$  2009RAZW NUCLEAR REACTIONS  $^2\text{H}(^{20}\text{O}, \text{p}), (^{20}\text{O}, \text{t}), (^{26}\text{Ne}, \text{p}), (^{26}\text{Ne}, \text{t})$ , E=10 MeV / nucleon; measured heavy fragments, Ep, Ip, Et, It, E $\gamma$ , I $\gamma$ ; deduced excitation energy spectra, level scheme, energies, angular momenta, spectroscopic factors, shell closure data. REPT IPNO-T-09-07,Ramus

2010CA10 NUCLEAR REACTIONS  $^2\text{H}(^{24}\text{Ne}, \text{p}\gamma)^{25}\text{Ne}$ , E=10.6 MeV / nucleon; measured neutron transfer reaction products, E $\gamma$ , I $\gamma$ , p- $\gamma$ -coin.; deduced  $\sigma(\theta)$ , level energies, J,  $\pi$ , orbital momentum, level inversion, N=16 shell gap. USD shell model. JOUR PRLTA 104 192501

2010R023 NUCLEAR REACTIONS Be( $^{14}\text{C}, ^{13}\text{C}), (^{15}\text{C}, ^{14}\text{C}), (^{16}\text{C}, ^{15}\text{C}), (^{17}\text{C}, ^{16}\text{C}), (^{18}\text{C}, ^{17}\text{C}), (^{19}\text{C}, ^{18}\text{C}), (^{16}\text{N}, ^{15}\text{N}), (^{17}\text{N}, ^{16}\text{N}), (^{18}\text{N}, ^{17}\text{N}), (^{19}\text{N}, ^{18}\text{N}), (^{20}\text{N}, ^{19}\text{N}), (^{21}\text{N}, ^{20}\text{N}), (^{22}\text{N}, ^{21}\text{N}), (^{19}\text{O}, ^{18}\text{O}), (^{20}\text{O}, ^{19}\text{O}), (^{21}\text{O}, ^{20}\text{O}), (^{22}\text{O}, ^{21}\text{O}), (^{23}\text{O}, ^{22}\text{O}), (^{21}\text{F}, ^{20}\text{F}), (^{22}\text{F}, ^{21}\text{F}), (^{23}\text{F}, ^{22}\text{F}), (^{24}\text{F}, ^{23}\text{F}), (^{25}\text{F}, ^{24}\text{F}), (^{26}\text{F}, ^{25}\text{F}), (^{24}\text{Ne}, ^{23}\text{Ne}), (^{25}\text{Ne}, ^{24}\text{Ne}), (^{26}\text{Ne}, ^{25}\text{Ne}), (^{27}\text{Ne}, ^{26}\text{Ne}), (^{28}\text{Ne}, ^{27}\text{Ne}), (^{27}\text{Na}, ^{26}\text{Na}), (^{28}\text{Na}, ^{27}\text{Na}), (^{29}\text{Na}, ^{28}\text{Na}), (^{30}\text{Na}, ^{29}\text{Na}), (^{31}\text{Na}, ^{30}\text{Na}), (^{31}\text{Mg}, ^{30}\text{Mg}), (^{32}\text{Mg}, ^{31}\text{Mg}), (^{33}\text{Mg}, ^{32}\text{Mg}), (^{34}\text{Al}, ^{33}\text{Al}), (^{35}\text{Al}, ^{34}\text{Al})$ , E<700 MeV / nucleon, [secondary beams from Be( $^{40}\text{Ar}$ , X), E=700 MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions.  $^{26}\text{F}$ ; possible anomalous structure.  $^{24,25,26,27,28}\text{Ne}$ ; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305

$^{25}\text{Mg}$  2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}, ^{151}\text{Sm}, \text{Pb}, ^{204,206,207,208}\text{Pb}, ^{209}\text{Bi}, ^{139}\text{La}, ^{232}\text{Th}, ^{24,25,26}\text{Mg}, ^{90,91,92,93,94,95,96}\text{Zr}, ^{186,187,188}\text{Os}, ^{233,234,235,236,238}\text{U}, ^{237}\text{Np}, ^{240}\text{Pu}, ^{241,243}\text{Am}, ^{245}\text{Cm}(\text{n}, \gamma)$ , E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

2010ZH44 NUCLEAR REACTIONS Si(n,  $\gamma$ ) $^{25}\text{Mg} / ^{26}\text{Mg} / ^{27}\text{Al} / ^{28}\text{Al} / ^{28}\text{Si} / ^{29}\text{Si} / ^{30}\text{Si}$ , E=14.9 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma(\theta)$ ; deduced  $\sigma, \sigma(\theta)$ , total  $\gamma$  radiation yield. Prompt and delayed  $\gamma$ .  $^{28}\text{Si}(\text{n}, \text{p}), (\text{n}, \text{n}'), (\text{n}, \alpha), (\text{n}, \text{np}), (\text{n}, \text{d}), ^{29}\text{Si}(\text{n}, \text{n}'), (\text{n}, \alpha), ^{30}\text{Si}(\text{n}, \text{n}')$ , E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602

$^{25}\text{Al}$  2009BA59 NUCLEAR REACTIONS  $^1\text{H}(^7\text{Be}, \gamma), (^{17}\text{F}, \gamma), (^{24}\text{Mg}, \gamma)$ , E=12 MeV;  $^7\text{Be}, ^{17}\text{F}, ^{24}\text{Mg}$ ; measured reaction products; deduced yields,  $\sigma$  for (p,  $\gamma$ ) reactions. JOUR ZAANE 42 457

2010FUZZ NUCLEAR REACTIONS  $^9\text{Be}, ^{23}\text{Na}, ^{25}\text{Mg}, ^{42}\text{Ca}, ^{46}\text{Ti}, ^{50}\text{Cr}, ^{54}\text{Fe}, ^{58}\text{Ni}, ^{118}\text{Sn}(^3\text{He}, \text{t})$ , E=140 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , reaction products; deduced  $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39

**A=25 (continued)**

- 2010LI22 NUCLEAR REACTIONS  $^{24}\text{Mg}(p, \gamma)^{25}\text{Al}$ ,  $E=214$  keV;  $^{25}\text{Mg}(p, \gamma)^{26}\text{Al}$ ,  $E=304$  keV;  $^{26}\text{Mg}(p, \gamma)^{27}\text{Al}$ ,  $E=326$  keV; measured  $E\gamma$ ,  $I\gamma$ , resonance strengths and thick target yield curves at LUNA facility.  $^{25,26,27}\text{Al}$ ; deduced levels,  $\gamma$ -ray branching ratios of primary  $\gamma$  rays from capture states. JOUR PRVCA 82 015801
- 2010SZ04 NUCLEAR REACTIONS  $^{24}\text{Mg}(p, \gamma)$ ,  $E=223$  keV; measured  $E\gamma$ ,  $I\gamma$ .  $^{25}\text{Al}$ ; deduced levels,  $J$ ,  $\pi$ , branching ratios. JOUR ZAANE 44 513
- $^{25}\text{Si}$  2010RE05 NUCLEAR REACTIONS  $^9\text{Be}(^{26}\text{Si}, ^{25}\text{Si})$ ,  $E=109$  MeV / nucleon;  $^9\text{Be}(^{30}\text{S}, ^{29}\text{S})$ ,  $E=103$  MeV / nucleon, [secondary beams of  $^{26}\text{Si}$  and  $^{30}\text{S}$  from primary  $^9\text{Be}(^{36}\text{Ar}, X)$ ,  $E=150$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\sigma$  using SeGA array.  $^{25}\text{Si}$ ,  $^{29}\text{S}$ ; deduced levels,  $J$ ,  $\pi$ . Comparisons with previous experimental data, mirror nuclei  $^{25}\text{Na}$  and  $^{29}\text{Al}$ , and shell model calculations. JOUR PRVCA 81 067303

**A=26**

- $^{26}\text{F}$  2010R023 NUCLEAR REACTIONS  $\text{Be}(^{14}\text{C}, ^{13}\text{C})$ ,  $(^{15}\text{C}, ^{14}\text{C})$ ,  $(^{16}\text{C}, ^{15}\text{C})$ ,  $(^{17}\text{C}, ^{16}\text{C})$ ,  $(^{18}\text{C}, ^{17}\text{C})$ ,  $(^{19}\text{C}, ^{18}\text{C})$ ,  $(^{16}\text{N}, ^{15}\text{N})$ ,  $(^{17}\text{N}, ^{16}\text{N})$ ,  $(^{18}\text{N}, ^{17}\text{N})$ ,  $(^{19}\text{N}, ^{18}\text{N})$ ,  $(^{20}\text{N}, ^{19}\text{N})$ ,  $(^{21}\text{N}, ^{20}\text{N})$ ,  $(^{22}\text{N}, ^{21}\text{N})$ ,  $(^{19}\text{O}, ^{18}\text{O})$ ,  $(^{20}\text{O}, ^{19}\text{O})$ ,  $(^{21}\text{O}, ^{20}\text{O})$ ,  $(^{22}\text{O}, ^{21}\text{O})$ ,  $(^{23}\text{O}, ^{22}\text{O})$ ,  $(^{21}\text{F}, ^{20}\text{F})$ ,  $(^{22}\text{F}, ^{21}\text{F})$ ,  $(^{23}\text{F}, ^{22}\text{F})$ ,  $(^{24}\text{F}, ^{23}\text{F})$ ,  $(^{25}\text{F}, ^{24}\text{F})$ ,  $(^{26}\text{F}, ^{25}\text{F})$ ,  $(^{24}\text{Ne}, ^{23}\text{Ne})$ ,  $(^{25}\text{Ne}, ^{24}\text{Ne})$ ,  $(^{26}\text{Ne}, ^{25}\text{Ne})$ ,  $(^{27}\text{Ne}, ^{26}\text{Ne})$ ,  $(^{28}\text{Ne}, ^{27}\text{Ne})$ ,  $(^{27}\text{Na}, ^{26}\text{Na})$ ,  $(^{28}\text{Na}, ^{27}\text{Na})$ ,  $(^{29}\text{Na}, ^{28}\text{Na})$ ,  $(^{30}\text{Na}, ^{29}\text{Na})$ ,  $(^{31}\text{Na}, ^{30}\text{Na})$ ,  $(^{31}\text{Mg}, ^{30}\text{Mg})$ ,  $(^{32}\text{Mg}, ^{31}\text{Mg})$ ,  $(^{33}\text{Mg}, ^{32}\text{Mg})$ ,  $(^{34}\text{Al}, ^{33}\text{Al})$ ,  $(^{35}\text{Al}, ^{34}\text{Al})$ ,  $E<700$  MeV / nucleon, [secondary beams from  $\text{Be}(^{40}\text{Ar}, X)$ ,  $E=700$  MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions.  $^{26}\text{F}$ ; possible anomalous structure.  $^{24,25,26,27,28}\text{Ne}$ ; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305
- $^{26}\text{Ne}$  2010R023 NUCLEAR REACTIONS  $\text{Be}(^{14}\text{C}, ^{13}\text{C})$ ,  $(^{15}\text{C}, ^{14}\text{C})$ ,  $(^{16}\text{C}, ^{15}\text{C})$ ,  $(^{17}\text{C}, ^{16}\text{C})$ ,  $(^{18}\text{C}, ^{17}\text{C})$ ,  $(^{19}\text{C}, ^{18}\text{C})$ ,  $(^{16}\text{N}, ^{15}\text{N})$ ,  $(^{17}\text{N}, ^{16}\text{N})$ ,  $(^{18}\text{N}, ^{17}\text{N})$ ,  $(^{19}\text{N}, ^{18}\text{N})$ ,  $(^{20}\text{N}, ^{19}\text{N})$ ,  $(^{21}\text{N}, ^{20}\text{N})$ ,  $(^{22}\text{N}, ^{21}\text{N})$ ,  $(^{19}\text{O}, ^{18}\text{O})$ ,  $(^{20}\text{O}, ^{19}\text{O})$ ,  $(^{21}\text{O}, ^{20}\text{O})$ ,  $(^{22}\text{O}, ^{21}\text{O})$ ,  $(^{23}\text{O}, ^{22}\text{O})$ ,  $(^{21}\text{F}, ^{20}\text{F})$ ,  $(^{22}\text{F}, ^{21}\text{F})$ ,  $(^{23}\text{F}, ^{22}\text{F})$ ,  $(^{24}\text{F}, ^{23}\text{F})$ ,  $(^{25}\text{F}, ^{24}\text{F})$ ,  $(^{26}\text{F}, ^{25}\text{F})$ ,  $(^{24}\text{Ne}, ^{23}\text{Ne})$ ,  $(^{25}\text{Ne}, ^{24}\text{Ne})$ ,  $(^{26}\text{Ne}, ^{25}\text{Ne})$ ,  $(^{27}\text{Ne}, ^{26}\text{Ne})$ ,  $(^{28}\text{Ne}, ^{27}\text{Ne})$ ,  $(^{27}\text{Na}, ^{26}\text{Na})$ ,  $(^{28}\text{Na}, ^{27}\text{Na})$ ,  $(^{29}\text{Na}, ^{28}\text{Na})$ ,  $(^{30}\text{Na}, ^{29}\text{Na})$ ,  $(^{31}\text{Na}, ^{30}\text{Na})$ ,  $(^{31}\text{Mg}, ^{30}\text{Mg})$ ,  $(^{32}\text{Mg}, ^{31}\text{Mg})$ ,  $(^{33}\text{Mg}, ^{32}\text{Mg})$ ,  $(^{34}\text{Al}, ^{33}\text{Al})$ ,  $(^{35}\text{Al}, ^{34}\text{Al})$ ,  $E<700$  MeV / nucleon, [secondary beams from  $\text{Be}(^{40}\text{Ar}, X)$ ,  $E=700$  MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions.  $^{26}\text{F}$ ; possible anomalous structure.  $^{24,25,26,27,28}\text{Ne}$ ; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305

## A=26 (continued)

- <sup>26</sup>Na      2008SVZX      RADIOACTIVITY <sup>62</sup>Ga; measured I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>, log ft, branching ratio; calculated isospin symmetry breaking using shell model; <sup>26</sup>Na( $\beta^-$ ); measured I $\beta$ (t), I $\gamma$ (t); deduced T<sub>1/2</sub>; <sup>18</sup>Ne; measured E $\gamma$ , I $\gamma$ , I $\beta$ (t),  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>; <sup>38</sup>K; measured I $\beta$ (t); deduced isomer decay, T<sub>1/2</sub>, M3 branching ratio, log ft; <sup>74</sup>Rb; measured decay products; deduced T<sub>1/2</sub>, branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008),P19,Svensson
- <sup>26</sup>Mg      2008SVZX      RADIOACTIVITY <sup>62</sup>Ga; measured I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>, log ft, branching ratio; calculated isospin symmetry breaking using shell model; <sup>26</sup>Na( $\beta^-$ ); measured I $\beta$ (t), I $\gamma$ (t); deduced T<sub>1/2</sub>; <sup>18</sup>Ne; measured E $\gamma$ , I $\gamma$ , I $\beta$ (t),  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>; <sup>38</sup>K; measured I $\beta$ (t); deduced isomer decay, T<sub>1/2</sub>, M3 branching ratio, log ft; <sup>74</sup>Rb; measured decay products; deduced T<sub>1/2</sub>, branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008),P19,Svensson
- 2009L006      NUCLEAR REACTIONS <sup>26</sup>Mg(polarized  $\gamma$ ,  $\gamma'$ ), E=10.8, 11.0, 11.2, 11.4 MeV; measured E $\gamma$ , I $\gamma$ , and  $\gamma\gamma(\theta)$  at TUNL HI $\gamma$ S facility. <sup>26</sup>Mg; deduced levels, J,  $\pi$ , and branching ratios. Comparison with Monte Carlo simulations. Implications for the reaction rates for <sup>22</sup>Ne( $\alpha$ ,  $\gamma$ )<sup>26</sup>Mg of astrophysical interest. JOUR PRVCA 80 055803
- 2009L0ZY      NUCLEAR REACTIONS <sup>26</sup>Mg( $\gamma$ ,  $\gamma'$ ), E=10.8, 11.0, 11.2, 11.4 MeV; measured E $\gamma$ , I $\gamma(\theta)$  using polarized  $\gamma$ ; deduced low-levels E, J,  $\pi$ . REPT TUNL-XLVIII,P103,Longland
- 2010BE01      NUCLEAR REACTIONS <sup>197</sup>Au(<sup>68</sup>Ni, <sup>68</sup>Ni'), E=600 MeV / nucleon; <sup>197</sup>Au(<sup>54</sup>Cr, <sup>54</sup>Cr'), E=100 MeV / nucleon; <sup>197</sup>Au(<sup>132</sup>Xe, <sup>132</sup>Xe'), E=100 MeV / nucleon; <sup>27</sup>Al(p, 2p), E> 100 MeV; Ge, <sup>27</sup>Al(n, n'), E not given; Be(<sup>37</sup>Ca, X)<sup>36</sup>K, E=200 MeV / nucleon; measured reaction fragments, E $\gamma$ , I $\gamma$ ; deduced energy levels, B(E2) values, lifetimes,  $\sigma(\theta)$ . JOUR APOBB 41 505
- 2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010DE26      NUCLEAR REACTIONS <sup>14</sup>C(<sup>18</sup>O, 2p)<sup>26</sup>Mg / <sup>30</sup>Mg / <sup>30</sup>Al / <sup>30</sup>Si, E=37 MeV; measured E $\gamma$  and yields. JOUR PRVCA 82 034305
- 2010DE29      NUCLEAR REACTIONS <sup>26</sup>Mg( $\gamma$ ,  $\gamma'$ ), E=10.5-11.7 MeV; measured E $\gamma$ , I $\gamma$ ; deduced levels, J,  $\pi$ , resonances, branching ratios, total widths, partial widths. GEANT4 Monte-Carlo simulation of  $\gamma$ -ray spectra. Relevance to predictions of neutron production for the s-process in nucleosynthesis. JOUR PRVCA 82 025802
- 2010MA43      NUCLEAR REACTIONS <sup>28</sup>Si(p, t), E=98.7 MeV; measured triton spectra,  $\sigma$ ,  $\sigma(\theta)$ . <sup>26</sup>Si; deduced levels, J,  $\pi$ , proton resonance energies, spectroscopic factors. DWBA analysis. Comparisons with previous measurements. <sup>26</sup>Si, <sup>26</sup>Mg; analyzed mirror states. <sup>25</sup>Al(p,  $\gamma$ )<sup>26</sup>Si; deduced reaction rates from 0.01 to 10 GK, comparisons with previous data and statistical-model calculations. JOUR PRVCA 82 025807



KEYNUMBERS AND KEYWORDS

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**A=26 (continued)**

- 2010ZH44 NUCLEAR REACTIONS Si(n,  $\gamma$ )<sup>25</sup>Mg / <sup>26</sup>Mg / <sup>27</sup>Al / <sup>28</sup>Al / <sup>28</sup>Si / <sup>29</sup>Si / <sup>30</sup>Si, E=14.9 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma(\theta)$ ; deduced  $\sigma$ ,  $\sigma(\theta)$ , total  $\gamma$  radiation yield. Prompt and delayed  $\gamma$ . <sup>28</sup>Si(n, p), (n, n'), (n,  $\alpha$ ), (n, np), (n, d), <sup>29</sup>Si(n, n'), (n,  $\alpha$ ), <sup>30</sup>Si(n, n'), E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602
- <sup>26</sup>Al 2008KOYY RADIOACTIVITY <sup>17</sup>Ne; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; <sup>38</sup>Ca; <sup>26</sup>Al; <sup>80</sup>Zn; <sup>81</sup>Zn; <sup>132</sup>Sn; <sup>134</sup>Sn; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in <sup>17</sup>Ne spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska
- 2009FA15 NUCLEAR REACTIONS <sup>26</sup>Mg, <sup>46,47,48</sup>Ti(<sup>3</sup>He, t), E=27 MeV; measured triton spectra; deduced Q-value. <sup>46,48</sup>Ti(d, p), E=14 MeV; measured Ep, Ip; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339
- 2010IA01 RADIOACTIVITY <sup>26</sup>Si( $\beta^+$ )[from <sup>1</sup>H(<sup>27</sup>Al, 2n), E=30 MeV / nucleon]; measured E $\beta$ , I $\beta$  using a 4 $\pi$  proportional gas counter system, and half-life. Comparison with previous results. JOUR PRVCA 82 035502
- 2010LI22 NUCLEAR REACTIONS <sup>24</sup>Mg(p,  $\gamma$ )<sup>25</sup>Al, E=214 keV; <sup>25</sup>Mg(p,  $\gamma$ )<sup>26</sup>Al, E=304 keV; <sup>26</sup>Mg(p,  $\gamma$ )<sup>27</sup>Al, E=326 keV; measured E $\gamma$ , I $\gamma$ , resonance strengths and thick target yield curves at LUNA facility. <sup>25,26,27</sup>Al; deduced levels,  $\gamma$ -ray branching ratios of primary  $\gamma$  rays from capture states. JOUR PRVCA 82 015801
- <sup>26</sup>Si 2010CH38 NUCLEAR REACTIONS <sup>1</sup>H(<sup>25</sup>Al, <sup>25</sup>Al), E $\approx$ 3.4 MeV / nucleon; measured  $\sigma(\theta)$ . <sup>1</sup>H(<sup>27</sup>Si, <sup>26</sup>Si), E=89 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , E(particle), I(particle), (particle) $\gamma$ -coin. <sup>26</sup>Si deduced levels, J,  $\pi$ , resonance parameteres using R-matrix fit. JOUR NUPAB 834 667c
- 2010CH44 NUCLEAR REACTIONS <sup>28</sup>Si(p, t), E=40 MeV; measured Et, It, Ep, Ip, tp-coin,  $\sigma(\theta)$ . <sup>26</sup>Si; deduced levels, J,  $\pi$ , resonances, l-transfers, and proton decay branching ratios. DWBA analysis. Astrophysical relevance to the reaction rates for <sup>25</sup>Al(p,  $\gamma$ ). JOUR PRVCA 82 045803
- 2010IA01 RADIOACTIVITY <sup>26</sup>Si( $\beta^+$ )[from <sup>1</sup>H(<sup>27</sup>Al, 2n), E=30 MeV / nucleon]; measured E $\beta$ , I $\beta$  using a 4 $\pi$  proportional gas counter system, and half-life. Comparison with previous results. JOUR PRVCA 82 035502
- 2010KW02 ATOMIC MASSES <sup>26</sup>Si; measured mass using LEBIT Penning trap mass spectrometer. Comparison with other experimental results. JOUR PRVCA 81 058501
- 2010MA43 NUCLEAR REACTIONS <sup>28</sup>Si(p, t), E=98.7 MeV; measured triton spectra,  $\sigma$ ,  $\sigma(\theta)$ . <sup>26</sup>Si; deduced levels, J,  $\pi$ , proton resonance energies, spectroscopic factors. DWBA analysis. Comparisons with previous measurements. <sup>26</sup>Si, <sup>26</sup>Mg; analyzed mirror states. <sup>25</sup>Al(p,  $\gamma$ )<sup>26</sup>Si; deduced reaction rates from 0.01 to 10 GK, comparisons with previous data and statistical-model calculations. JOUR PRVCA 82 025807

## A=27

- <sup>27</sup>Ne      2009RAZW      NUCLEAR REACTIONS <sup>2</sup>H(<sup>20</sup>O, p), (<sup>20</sup>O, t), (<sup>26</sup>Ne, p), (<sup>26</sup>Ne, t), E=10 MeV / nucleon; measured heavy fragments, Ep, Ip, Et, It, E $\gamma$ , I $\gamma$ ; deduced excitation energy spectra, level scheme, energies, angular momenta, spectroscopic factors, shell closure data. REPT IPNO-T-09-07,Ramus
- 2010R023      NUCLEAR REACTIONS Be(<sup>14</sup>C, <sup>13</sup>C), (<sup>15</sup>C, <sup>14</sup>C), (<sup>16</sup>C, <sup>15</sup>C), (<sup>17</sup>C, <sup>16</sup>C), (<sup>18</sup>C, <sup>17</sup>C), (<sup>19</sup>C, <sup>18</sup>C), (<sup>16</sup>N, <sup>15</sup>N), (<sup>17</sup>N, <sup>16</sup>N), (<sup>18</sup>N, <sup>17</sup>N), (<sup>19</sup>N, <sup>18</sup>N), (<sup>20</sup>N, <sup>19</sup>N), (<sup>21</sup>N, <sup>20</sup>N), (<sup>22</sup>N, <sup>21</sup>N), (<sup>19</sup>O, <sup>18</sup>O), (<sup>20</sup>O, <sup>19</sup>O), (<sup>21</sup>O, <sup>20</sup>O), (<sup>22</sup>O, <sup>21</sup>O), (<sup>23</sup>O, <sup>22</sup>O), (<sup>21</sup>F, <sup>20</sup>F), (<sup>22</sup>F, <sup>21</sup>F), (<sup>23</sup>F, <sup>22</sup>F), (<sup>24</sup>F, <sup>23</sup>F), (<sup>25</sup>F, <sup>24</sup>F), (<sup>26</sup>F, <sup>25</sup>F), (<sup>24</sup>Ne, <sup>23</sup>Ne), (<sup>25</sup>Ne, <sup>24</sup>Ne), (<sup>26</sup>Ne, <sup>25</sup>Ne), (<sup>27</sup>Ne, <sup>26</sup>Ne), (<sup>28</sup>Ne, <sup>27</sup>Ne), (<sup>27</sup>Na, <sup>26</sup>Na), (<sup>28</sup>Na, <sup>27</sup>Na), (<sup>29</sup>Na, <sup>28</sup>Na), (<sup>30</sup>Na, <sup>29</sup>Na), (<sup>31</sup>Na, <sup>30</sup>Na), (<sup>31</sup>Mg, <sup>30</sup>Mg), (<sup>32</sup>Mg, <sup>31</sup>Mg), (<sup>33</sup>Mg, <sup>32</sup>Mg), (<sup>34</sup>Al, <sup>33</sup>Al), (<sup>35</sup>Al, <sup>34</sup>Al), E<700 MeV / nucleon, [secondary beams from Be(<sup>40</sup>Ar, X), E=700 MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions. <sup>26</sup>F; possible anomalous structure. <sup>24,25,26,27,28</sup>Ne; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305
- <sup>27</sup>Mg      2008BEZI      NUCLEAR REACTIONS <sup>27</sup>Al(d, p $\alpha$ ), E $\approx$ 3-22 MeV; <sup>27</sup>Al(d, 2p), E $\approx$ 3-20 MeV; <sup>27</sup>Al(d, p), E $\approx$ 3-20 MeV; <sup>63,65</sup>Cu(d, 2n), E $\approx$ 3-20 MeV; <sup>63</sup>Cu(d, p), E $\approx$ 3-20 MeV; <sup>65</sup>Cu(d, 2p), E $\approx$ 3-20 MeV; <sup>65</sup>Cu(d, 3p), E $\approx$ 3-20 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced  $\sigma$ , T<sub>1/2</sub>. Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
- 2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010QI02      NUCLEAR REACTIONS <sup>1,2</sup>H, <sup>12</sup>C, <sup>27</sup>Al, <sup>63</sup>Cu, <sup>197</sup>Au(e, e' $\pi^+$ ), E<5.8 GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus Q<sup>2</sup>. JOUR PRVCA 81 055209
- <sup>27</sup>Al      2008PAZG      NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>90</sup>Zr, <sup>90</sup>Zr'), E=2.3 MeV / nucleon; <sup>24</sup>Mg(<sup>92</sup>Mo, <sup>92</sup>Mo'), E=2.3 MeV / nucleon; measured Coulomb excitation E $\gamma$ , I $\gamma$ ; <sup>27</sup>Al(<sup>84</sup>Se, <sup>84</sup>Se'), E=193.2 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced B(E2), E, J,  $\pi$ . Compared with Brown's calculations. Results on CD only. CONF E.Lansing (NS2008),P51,Padilla-Rodal
- 2009MA70      NUCLEAR REACTIONS <sup>13</sup>C( $\alpha$ ,  $\gamma$ ), ( $\alpha$ , n), E=2.000, 2.270 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma(\theta)$ , En,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data. <sup>27</sup>Al, <sup>127</sup>I, <sup>206,207,208</sup>Pb(n, n'), E=3.5-4.4 MeV; <sup>127</sup>I(n,  $\gamma$ ), E=10.1-11.3 MeV; measured E $\gamma$ . JOUR PRVCA 80 065802
- 2010AB06      NUCLEAR REACTIONS <sup>27</sup>Al(<sup>7</sup>Li, <sup>7</sup>Li), E=7-11 MeV; measured reaction products; deduced elastic scattering  $\sigma$ ,  $\sigma(\theta)$ . Optical potentials, comparison with previous experimental data. JOUR NIMBE 268 1793

**A=27 (continued)**

- 2010BE01 NUCLEAR REACTIONS  $^{197}\text{Au}(^{68}\text{Ni}, ^{68}\text{Ni}')$ , E=600 MeV / nucleon;  $^{197}\text{Au}(^{54}\text{Cr}, ^{54}\text{Cr}')$ , E=100 MeV / nucleon;  $^{197}\text{Au}(^{132}\text{Xe}, ^{132}\text{Xe}')$ , E=100 MeV / nucleon;  $^{27}\text{Al}(p, 2p)$ , E> 100 MeV; Ge,  $^{27}\text{Al}(n, n')$ , E not given; Be( $^{37}\text{Ca}, X$ ) $^{36}\text{K}$ , E=200 MeV / nucleon; measured reaction fragments,  $E_\gamma$ ,  $I_\gamma$ ; deduced energy levels, B(E2) values, lifetimes,  $\sigma(\theta)$ . JOUR APOBB 41 505
- 2010LI22 NUCLEAR REACTIONS  $^{24}\text{Mg}(p, \gamma)^{25}\text{Al}$ , E=214 keV;  $^{25}\text{Mg}(p, \gamma)^{26}\text{Al}$ , E=304 keV;  $^{26}\text{Mg}(p, \gamma)^{27}\text{Al}$ , E=326 keV; measured  $E_\gamma$ ,  $I_\gamma$ , resonance strengths and thick target yield curves at LUNA facility.  $^{25,26,27}\text{Al}$ ; deduced levels,  $\gamma$ -ray branching ratios of primary  $\gamma$  rays from capture states. JOUR PRVCA 82 015801
- 2010ZH44 NUCLEAR REACTIONS Si(n,  $\gamma$ ) $^{25}\text{Mg}$  /  $^{26}\text{Mg}$  /  $^{27}\text{Al}$  /  $^{28}\text{Al}$  /  $^{28}\text{Si}$  /  $^{29}\text{Si}$  /  $^{30}\text{Si}$ , E=14.9 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma(\theta)$ ; deduced  $\sigma$ ,  $\sigma(\theta)$ , total  $\gamma$  radiation yield. Prompt and delayed  $\gamma$ .  $^{28}\text{Si}(n, p)$ , (n, n'), (n,  $\alpha$ ), (n, np), (n, d),  $^{29}\text{Si}(n, n')$ , (n,  $\alpha$ ),  $^{30}\text{Si}(n, n')$ , E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602
- $^{27}\text{Si}$  2009L005 NUCLEAR REACTIONS  $^{12}\text{C}(^{16}\text{O}, n)$ , E=26 MeV; measured  $E_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , and half-lives by DSA using Gammasphere array.  $^{27}\text{Si}$ ; deduced levels, J,  $\pi$ , and proton resonances.  $^{26m}\text{Al}(p, \gamma)^{27}\text{Si}$ ; deduced stellar reaction rates. JOUR PRVCA 80 055802
- 2009XUZZ RADIOACTIVITY  $^{17}\text{Ne}(2p)$ [from  $^9\text{Be}(^{20}\text{Ne}, X)$ ],  $^{29}\text{S}(2p)$ [from  $^9\text{Be}(^{32}\text{S}, X)$ ]; measured  $E_p$ ,  $I_p$ , pp-coin, E(particle), I(particle), (particle)p-coin. CONF Dub(Nucl Struct and Dynamics,09) Proc,P106
- 2010LI33 RADIOACTIVITY  $^{17,18}\text{Ne}$ ,  $^{29}\text{S}(2p)$ ; deduced possible 2p-decay or  $^2\text{He}$ -decay branching ratios. JOUR NUPAB 834 450c

**A=28**

- $^{28}\text{Ne}$  2010R023 NUCLEAR REACTIONS Be( $^{14}\text{C}$ ,  $^{13}\text{C}$ ), ( $^{15}\text{C}$ ,  $^{14}\text{C}$ ), ( $^{16}\text{C}$ ,  $^{15}\text{C}$ ), ( $^{17}\text{C}$ ,  $^{16}\text{C}$ ), ( $^{18}\text{C}$ ,  $^{17}\text{C}$ ), ( $^{19}\text{C}$ ,  $^{18}\text{C}$ ), ( $^{16}\text{N}$ ,  $^{15}\text{N}$ ), ( $^{17}\text{N}$ ,  $^{16}\text{N}$ ), ( $^{18}\text{N}$ ,  $^{17}\text{N}$ ), ( $^{19}\text{N}$ ,  $^{18}\text{N}$ ), ( $^{20}\text{N}$ ,  $^{19}\text{N}$ ), ( $^{21}\text{N}$ ,  $^{20}\text{N}$ ), ( $^{22}\text{N}$ ,  $^{21}\text{N}$ ), ( $^{19}\text{O}$ ,  $^{18}\text{O}$ ), ( $^{20}\text{O}$ ,  $^{19}\text{O}$ ), ( $^{21}\text{O}$ ,  $^{20}\text{O}$ ), ( $^{22}\text{O}$ ,  $^{21}\text{O}$ ), ( $^{23}\text{O}$ ,  $^{22}\text{O}$ ), ( $^{21}\text{F}$ ,  $^{20}\text{F}$ ), ( $^{22}\text{F}$ ,  $^{21}\text{F}$ ), ( $^{23}\text{F}$ ,  $^{22}\text{F}$ ), ( $^{24}\text{F}$ ,  $^{23}\text{F}$ ), ( $^{25}\text{F}$ ,  $^{24}\text{F}$ ), ( $^{26}\text{F}$ ,  $^{25}\text{F}$ ), ( $^{24}\text{Ne}$ ,  $^{23}\text{Ne}$ ), ( $^{25}\text{Ne}$ ,  $^{24}\text{Ne}$ ), ( $^{26}\text{Ne}$ ,  $^{25}\text{Ne}$ ), ( $^{27}\text{Ne}$ ,  $^{26}\text{Ne}$ ), ( $^{28}\text{Ne}$ ,  $^{27}\text{Ne}$ ), ( $^{27}\text{Na}$ ,  $^{26}\text{Na}$ ), ( $^{28}\text{Na}$ ,  $^{27}\text{Na}$ ), ( $^{29}\text{Na}$ ,  $^{28}\text{Na}$ ), ( $^{30}\text{Na}$ ,  $^{29}\text{Na}$ ), ( $^{31}\text{Na}$ ,  $^{30}\text{Na}$ ), ( $^{31}\text{Mg}$ ,  $^{30}\text{Mg}$ ), ( $^{32}\text{Mg}$ ,  $^{31}\text{Mg}$ ), ( $^{33}\text{Mg}$ ,  $^{32}\text{Mg}$ ), ( $^{34}\text{Al}$ ,  $^{33}\text{Al}$ ), ( $^{35}\text{Al}$ ,  $^{34}\text{Al}$ ), E<700 MeV / nucleon, [secondary beams from Be( $^{40}\text{Ar}$ , X), E=700 MeV / nucleon primary reaction]; measured fragment longitudinal-momentum distributions,  $\sigma$ , widths. One-neutron knockout reactions.  $^{26}\text{F}$ ; possible anomalous structure.  $^{24,25,26,27,28}\text{Ne}$ ; discussed ground state configurations and relevance to nuclei near the island of inversion. JOUR PRVCA 82 024305
- $^{28}\text{Na}$  2008TRZW RADIOACTIVITY  $^{28,29,30}\text{Na}(\beta^-)$ [from  $^{48}\text{Ca}$  fragmentation]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$ -coin, (fragment) $\beta\gamma$ -coin, (fragment) $\beta\gamma\gamma$ -coin; deduced E, J,  $\pi$ , log ft; calculated E, J,  $\pi$  using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525

KEYNUMBERS AND KEYWORDS

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**A=28 (continued)**

<sup>28</sup> Mg	2008STZU	NUCLEAR REACTIONS Cl(p, x) <sup>28</sup> Mg, E <sub>2s</sub> ≈50-200 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> ; deduced σ, thick target yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P1391
	2008TRZW	RADIOACTIVITY <sup>28,29,30</sup> Na(β <sup>-</sup> )[from <sup>48</sup> Ca fragmentation]; measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin, βγ-coin, (fragment)βγ-coin, (fragment)βγγ-coin; deduced E, J, π, log ft; calculated E, J, π using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525
<sup>28</sup> Al	2008BEZI	NUCLEAR REACTIONS <sup>27</sup> Al(d, pα), E≈3-22 MeV; <sup>27</sup> Al(d, 2p), E≈3-20 MeV; <sup>27</sup> Al(d, p), E≈3-20 MeV; <sup>63,65</sup> Cu(d, 2n), E≈3-20 MeV; <sup>63</sup> Cu(d, p), E≈3-20 MeV; <sup>65</sup> Cu(d, 2p), E≈3-20 MeV; <sup>65</sup> Cu(d, 3p), E≈3-20 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> (t); deduced σ, T <sub>1/2</sub> . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
	2008MAZE	RADIOACTIVITY <sup>23</sup> Al(EC), <sup>23</sup> Ne(β <sup>-</sup> ), <sup>24m</sup> Al(IT), (EC), <sup>28</sup> P(EC), <sup>28</sup> Al(β <sup>-</sup> ); measured μ, g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta
	2008MIZT	NUCLEAR REACTIONS <sup>23</sup> Na, <sup>27</sup> Al(n, γ), E=thermal; measured E <sub>γ</sub> , I <sub>γ</sub> ; deduced γ emission probability. New method suggested, shown to be consistent. CONF Nice (Nucl Data for Sci and Technol) Proc,P451
	2008NOZX	NUCLEAR REACTIONS <sup>27</sup> Al(n, n'x), E=90-110 MeV; <sup>27</sup> Al(n, γ), E=90-110 MeV; measured E <sub>n</sub> , ln(θ), E <sub>γ</sub> , I <sub>γ</sub> (θ); deduced dσ(E, θ); calculated neutron dσ(E, θ) using PHITS, GNASH, TALYS. CONF Nice (Nucl Data for Sci and Technol) Proc,P1043
	2010KR02	NUCLEAR REACTIONS <sup>27</sup> Al, <sup>197</sup> Au, <sup>59</sup> Co, In, <sup>181</sup> Ta(n, γ), (n, α), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup> Au, <sup>24</sup> Na; measured E <sub>α</sub> , I <sub>α</sub> , E <sub>γ</sub> , I <sub>γ</sub> ; deduced yields, σ. JOUR NIMAE 615 70
	2010ZH44	NUCLEAR REACTIONS Si(n, γ) <sup>25</sup> Mg / <sup>26</sup> Mg / <sup>27</sup> Al / <sup>28</sup> Al / <sup>28</sup> Si / <sup>29</sup> Si / <sup>30</sup> Si, E=14.9 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , γ(θ); deduced σ, σ(θ), total γ radiation yield. Prompt and delayed γ. <sup>28</sup> Si(n, p), (n, n'), (n, α), (n, np), (n, d), <sup>29</sup> Si(n, n'), (n, α), <sup>30</sup> Si(n, n'), E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602
	<sup>28</sup> Si	2008MAZE
2008OHZS		RADIOACTIVITY <sup>22</sup> F(β <sup>-</sup> ), <sup>24m</sup> Al(β <sup>+</sup> ), <sup>28</sup> P(β <sup>+</sup> )[from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo
2009LEZU		NUCLEAR REACTIONS <sup>12</sup> C( <sup>16</sup> O, γ), E(cm)=8.5, 8.8, 9 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , particle-γ-coin.; deduced feeding of states located around E* = 11 MeV. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P593,Lebhertz
2009ZH52		RADIOACTIVITY <sup>28</sup> P(β <sup>+</sup> ) [from Be( <sup>28</sup> Si, X) <sup>28</sup> P, E=100 MeV / nucleon]; measured decay products, β-NMR spectra; deduced g factors, magnetic moment. JOUR CPCHC 33 s01 215

## A=28 (continued)

- 2010GA18 NUCLEAR REACTIONS  $^{28}\text{Si}(\alpha, \alpha\gamma)$ , E=30.3 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma(\theta)$ , low-lying states, J,  $\pi$ , dynamical deformation. Comparison with FRESCO and CHUCK codes. JOUR PANUE 73 1339
- 2010K011 NUCLEAR REACTIONS  $\text{K}(p, p)$ ,  $^{27}\text{Al}(p, \gamma)$  E=3-5 MeV; NUCLEAR REACTIONS  $^{39}\text{K}(p, \alpha)$ , E=4-5 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma(\theta)$ . JOUR NIMBE 268 1797
- 2010L005 NUCLEAR REACTIONS  $^{22}\text{Ne}$ ,  $^{27}\text{Al}(p, \gamma)$ , E=400-505 keV; measured  $E\gamma$ ,  $I\gamma$ , yields and resonance strengths. Comparison with previous data. Relevance to of resonance strengths in the  $^{22}\text{Ne}(p, \gamma)^{23}\text{Na}$  hydrogen-burning reaction and in the  $^{22}\text{Ne}(\alpha, \gamma)$  s-process neutron-source reactions. JOUR PRVCA 81 055804
- 2010MA44 RADIOACTIVITY  $^{28}\text{P}(\beta^+)$ ; measured  $\mu$ ; deduced spin components.  $^{13}\text{B}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta(\theta)$  from aligned  $^{13}\text{B}$ ; deduced alignment correlation coefficient, G-parity tensor coupling constant. Discussed  $^9\text{C}$ - $^9\text{Li}$  mirror pair  $\mu$  and spin expectation value. JOUR NUPAB 834 424c
- 2010T003 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{28}\text{Si}(p, p)$ , E=4.9-6.1 MeV; measured scattered protons; deduced yields, stopping  $\sigma$ , sharp nuclear resonances. JOUR NIMBE 268 1749
- 2010ZE05 NUCLEAR REACTIONS  $^{28}\text{Si}(^7\text{Li}, ^7\text{Li})$ , E=5-12 MeV; measured quasielastic  $\sigma(E, \theta)$ ; deduced barrier distributions for elastic and quasielastic channels using optical model and double-folded potentials. Comparison with previous data for  $^{28}\text{Si}(^6\text{Li}, ^6\text{Li})$ , E=5-35 MeV. Continuum-discretized coupled-channel (CDCC) and coupled reaction channel (CRC) calculations for effect of breakup and transfer reactions. JOUR PRVCA 82 044607
- 2010ZH44 NUCLEAR REACTIONS  $\text{Si}(n, \gamma)^{25}\text{Mg} / ^{26}\text{Mg} / ^{27}\text{Al} / ^{28}\text{Al} / ^{28}\text{Si} / ^{29}\text{Si} / ^{30}\text{Si}$ , E=14.9 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ ; deduced  $\sigma$ ,  $\sigma(\theta)$ , total  $\gamma$  radiation yield. Prompt and delayed  $\gamma$ .  $^{28}\text{Si}(n, p)$ ,  $(n, n')$ ,  $(n, \alpha)$ ,  $(n, np)$ ,  $(n, d)$ ,  $^{29}\text{Si}(n, n')$ ,  $(n, \alpha)$ ,  $^{30}\text{Si}(n, n')$ , E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602
- $^{28}\text{P}$  2008MAZE RADIOACTIVITY  $^{23}\text{Al}(\text{EC})$ ,  $^{23}\text{Ne}(\beta^-)$ ,  $^{24m}\text{Al}(\text{IT})$ ,  $(\text{EC})$ ,  $^{28}\text{P}(\text{EC})$ ,  $^{28}\text{Al}(\beta^-)$ ; measured  $\mu$ , g-factor, log ft; calculated particle and spin decomposition. Results on CD only. CONF E.Lansing (NS2008),P137,Matsuta
- 2008OHZS RADIOACTIVITY  $^{22}\text{F}(\beta^-)$ ,  $^{24m}\text{Al}(\beta^+)$ ,  $^{28}\text{P}(\beta^+)$ [from charge-exchange in intermediate energy heavy-ion reactions]; measured polarization. Abstract only. CONF E.Lansing (NS2008),P157,Ohtsubo
- 2009ZH52 RADIOACTIVITY  $^{28}\text{P}(\beta^+)$  [from  $\text{Be}(^{28}\text{Si}, \text{X})^{28}\text{P}$ , E=100 MeV / nucleon]; measured decay products,  $\beta$ -NMR spectra; deduced g factors, magnetic moment. JOUR CPCHC 33 s01 215
- 2010MA44 RADIOACTIVITY  $^{28}\text{P}(\beta^+)$ ; measured  $\mu$ ; deduced spin components.  $^{13}\text{B}(\beta^-)$ ; measured  $E\beta$ ,  $I\beta(\theta)$  from aligned  $^{13}\text{B}$ ; deduced alignment correlation coefficient, G-parity tensor coupling constant. Discussed  $^9\text{C}$ - $^9\text{Li}$  mirror pair  $\mu$  and spin expectation value. JOUR NUPAB 834 424c

KEYNUMBERS AND KEYWORDS

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**A=28 (continued)**

- 2010WR01 NUCLEAR REACTIONS  $^{20}\text{Ne}$ ,  $^{24}\text{Mg}$ ,  $^{28}\text{Si}$ ,  $^{32}\text{S}$ ,  $^{36}\text{Ar}(^3\text{He}, t)$ ,  $E=32$  MeV; measured triton spectra using Q3D magnetic spectrograph; deduced levels, Q values, mass excesses. JOUR PRVCA 81 055503
- 2010WR01 ATOMIC MASSES  $^{20}\text{Na}$ ,  $^{24}\text{Al}$ ,  $^{28}\text{P}$ ,  $^{32}\text{Cl}$ ; measured mass excesses using  $(^3\text{He}, t)$  reaction.  $^{36}\text{Ar}(^3\text{He}, t)^{36}\text{K}$  used for calibration. Comparison with AME-2003. JOUR PRVCA 81 055503
- 2010WR02 NUCLEAR REACTIONS  $^{20}\text{Ne}$ ,  $^{24}\text{Mg}$ ,  $^{28}\text{Si}$ ,  $^{32}\text{S}$ ,  $^{36}\text{Ar}(^3\text{He}, t)$ ,  $E=32$  MeV; measured  $E(t)$ ,  $I(t)$ ; deduced levels and resonances.  $^{19}\text{Ne}$ ,  $^{23}\text{Mg}$ ,  $^{27}\text{Si}$ ,  $^{31}\text{S}$ ,  $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates.  $^{36}\text{Cl}$ ,  $^{36}\text{Ar}$ ,  $^{36}\text{K}$ ; analyzed  $A=36$ ,  $T=1$  triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805
- 2010XU03 NUCLEAR REACTIONS  $^{197}\text{Au}(^{28}\text{P}, ^{28}\text{P}')$ ,  $E=46.5$  MeV / nucleon [ $^{28}\text{P}$  secondary beam from  $^9\text{Be}(^{32}\text{S}, X)$ ,  $E=80.4$  MeV / nucleon primary reaction]; measured  $E_p$ ,  $I_p$ , time of flight,  $(^{26}\text{Al})(p)(p)$ -coin.  $^{28}\text{P}$ ; deduced levels, two-proton emission from excited states.  $^9\text{Be}(^{32}\text{S}, X)^{22}\text{Ne} / ^{23}\text{Na} / ^{24}\text{Mg} / ^{25}\text{Al} / ^{26}\text{Al} / ^{27}\text{Si} / ^{28}\text{P} / ^{29}\text{S}$ ,  $E=80.4$  MeV / nucleon; measured yields. JOUR PRVCA 81 054317

**A=29**

- $^{29}\text{F}$  2010FA04 NUCLEAR REACTIONS  $^9\text{Be}(^{32}\text{Mg}, ^{30}\text{Ne})$ ,  $E=86.7, 99.7$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , and  $\sigma$  using SeGA array.  $^{32}\text{Mg}$  beam from  $^9\text{Be}(^{48}\text{Ca}, X)$ ,  $E=140$  MeV / nucleon.  $^{30}\text{Ne}$ ; deduced levels,  $J$ ,  $\pi$ , intruder configuration.  $^{29,31}\text{F}$ ; discussed implications for binding energies.  $^{32}\text{Mg}$ ; deduced configuration. Comparison with large-scale shell model calculations. JOUR PRVCA 81 041302
- $^{29}\text{Ne}$  2009AOZZ NUCLEAR REACTIONS  $^9\text{Be}(^{48}\text{Ca}, X)$ ,  $E=345$  MeV / nucleon.  $^{20,22}\text{C}$ ,  $^{29,30,31,32}\text{Ne}$ ,  $^{40,42}\text{Si}$  measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76
- $^{29}\text{Na}$  2008TRZW RADIOACTIVITY  $^{28,29,30}\text{Na}(\beta^-)$ [from  $^{48}\text{Ca}$  fragmentation]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$ -coin, (fragment) $\beta\gamma$ -coin, (fragment) $\beta\gamma\gamma$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ , log ft; calculated  $E$ ,  $J$ ,  $\pi$  using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525
- $^{29}\text{Mg}$  2008TRZW RADIOACTIVITY  $^{28,29,30}\text{Na}(\beta^-)$ [from  $^{48}\text{Ca}$  fragmentation]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$ -coin, (fragment) $\beta\gamma$ -coin, (fragment) $\beta\gamma\gamma$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ , log ft; calculated  $E$ ,  $J$ ,  $\pi$  using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525
- $^{29}\text{Si}$  2009ZH53 RADIOACTIVITY  $^{29}\text{P}(\beta^+)$  [from  $^{28}\text{Si}(d, n)^{29}\text{P}$ ,  $E=3$  MeV]; measured decay products,  $\beta$ -NMR spectra; deduced magnetic moment, density distribution of protons, neutrons and matter. JOUR CPCHC 33 s01 218

KEYNUMBERS AND KEYWORDS

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**A=29 (continued)**

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| 2010ZH44        | NUCLEAR REACTIONS Si(n, $\gamma$ ) <sup>25</sup> Mg / <sup>26</sup> Mg / <sup>27</sup> Al / <sup>28</sup> Al / <sup>28</sup> Si / <sup>29</sup> Si / <sup>30</sup> Si, E=14.9 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma(\theta)$ ; deduced $\sigma$ , $\sigma(\theta)$ , total $\gamma$ radiation yield. Prompt and delayed $\gamma$ . <sup>28</sup> Si(n, p), (n, n'), (n, $\alpha$ ), (n, np), (n, d), <sup>29</sup> Si(n, n'), (n, $\alpha$ ), <sup>30</sup> Si(n, n'), E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602 |
| <sup>29</sup> P | 2009ZH53 RADIOACTIVITY <sup>29</sup> P( $\beta^+$ ) [from <sup>28</sup> Si(d, n) <sup>29</sup> P, E=3 MeV]; measured decay products, $\beta$ -NMR spectra; deduced magnetic moment, density distribution of protons, neutrons and matter. JOUR CPCHC 33 s01 218   |
| <sup>29</sup> S | 2009XUZZ RADIOACTIVITY <sup>17</sup> Ne(2p)[from <sup>9</sup> Be( <sup>20</sup> Ne, X)], <sup>29</sup> S(2p)[from <sup>9</sup> Be( <sup>32</sup> S, X)]; measured E <sub>p</sub> , I <sub>p</sub> , pp-coin, E(particle), I(particle), (particle)p-coin. CONF Dub(Nucl Struct and Dynamics,09) Proc,P106  |
|                 | 2010LI33 RADIOACTIVITY <sup>17,18</sup> Ne, <sup>29</sup> S(2p); deduced possible 2p-decay or <sup>2</sup> He-decay branching ratios. JOUR NUPAB 834 450c   |
|                 | 2010RE05 NUCLEAR REACTIONS <sup>9</sup> Be( <sup>26</sup> Si, <sup>25</sup> Si), E=109 MeV / nucleon; <sup>9</sup> Be( <sup>30</sup> S, <sup>29</sup> S), E=103 MeV / nucleon, [secondary beams of <sup>26</sup> Si and <sup>30</sup> S from primary <sup>9</sup> Be( <sup>36</sup> Ar, X), E=150 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, $\sigma$ using SeGA array. <sup>25</sup> Si, <sup>29</sup> S; deduced levels, J, $\pi$ . Comparisons with previous experimental data, mirror nuclei <sup>25</sup> Na and <sup>29</sup> Al, and shell model calculations. JOUR PRVCA 81 067303                     |

**A=30**

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| <sup>30</sup> Ne | 2009A0ZZ NUCLEAR REACTIONS <sup>9</sup> Be( <sup>48</sup> Ca, X), E=345 MeV / nucleon. <sup>20,22</sup> C, <sup>29,30,31,32</sup> Ne, <sup>40,42</sup> Si measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76   |
|                  | 2010FA04 NUCLEAR REACTIONS <sup>9</sup> Be( <sup>32</sup> Mg, <sup>30</sup> Ne), E=86.7, 99.7 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , and $\sigma$ using SeGA array. <sup>32</sup> Mg beam from <sup>9</sup> Be( <sup>48</sup> Ca, X), E=140 MeV / nucleon. <sup>30</sup> Ne; deduced levels, J, $\pi$ , intruder configuration. <sup>29,31</sup> F; discussed implications for binding energies. <sup>32</sup> Mg; deduced configuration. Comparison with large-scale shell model calculations. JOUR PRVCA 81 041302 |
| <sup>30</sup> Na | 2008TRZW RADIOACTIVITY <sup>28,29,30</sup> Na( $\beta^-$ )[from <sup>48</sup> Ca fragmentation]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\beta\gamma$ -coin, (fragment) $\beta\gamma$ -coin, (fragment) $\beta\gamma\gamma$ -coin; deduced E, J, $\pi$ , log ft; calculated E, J, $\pi$ using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525  |
| <sup>30</sup> Mg | 2008DEZM NUCLEAR REACTIONS <sup>14</sup> C( <sup>18</sup> O, 2p), E=37 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, E(particle), I(particle), A(particle), Z(particle), (particle) $\gamma$ -coin; deduced levels, J, $\pi$ , yrast; calculated levels, J, $\pi$ using USD interaction. Results on CD only. CONF E.Lansing (NS2008),P94,Deacon   |

## A=30 (continued)

- 2008TRZW RADIOACTIVITY  $^{28,29,30}\text{Na}(\beta^-)$ [from  $^{48}\text{Ca}$  fragmentation]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$ -coin, (fragment) $\beta\gamma$ -coin, (fragment) $\beta\gamma\gamma$ -coin; deduced E, J,  $\pi$ , log ft; calculated E, J,  $\pi$  using shell model with USDA interaction, Monte Carlo shell model with SDPF-M interaction. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P525
- 2010DE26 NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, 2p)$ , E=37 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -, ( $^{30}\text{Mg}$ ) $\gamma$ -coin,  $\gamma(\theta)$  using Gammasphere array, enriched  $^{14}\text{C}$  target.  $^{30}\text{Mg}$ ; deduced levels, J,  $\pi$ , multipolarities. Comparison with shell-model calculations using the USD and SDPF-M interactions, and the Monte Carlo shell model. Systematics of first 2+ and 4+ states in  $^{24,26,28,30,32,34}\text{Mg}$ . JOUR PRVCA 82 034305
- 2010DE26 NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, 2p)^{26}\text{Mg} / ^{30}\text{Mg} / ^{30}\text{Al} / ^{30}\text{Si}$ , E=37 MeV; measured  $E_\gamma$  and yields. JOUR PRVCA 82 034305
- $^{30}\text{Al}$  2010DE26 NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, 2p)^{26}\text{Mg} / ^{30}\text{Mg} / ^{30}\text{Al} / ^{30}\text{Si}$ , E=37 MeV; measured  $E_\gamma$  and yields. JOUR PRVCA 82 034305
- 2010STZZ NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, X)$ , E=37 MeV; measured  $E_\gamma$ ,  $I_\gamma$ , (residue) $\gamma$ -,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , DCO ratios using the Gammasphere array and Fragment Mass Analyzer.  $^{30}\text{Al}$ ,  $^{30}\text{Si}$ ; deduced levels, J,  $\pi$ , multipolarities. Comparison with shell-model calculations using the USD, USDA, and USDB effective interactions. PREPRINT Steppenbeck,7/26/2010
- $^{30}\text{Si}$  2010DE26 NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, 2p)^{26}\text{Mg} / ^{30}\text{Mg} / ^{30}\text{Al} / ^{30}\text{Si}$ , E=37 MeV; measured  $E_\gamma$  and yields. JOUR PRVCA 82 034305
- 2010SE07 NUCLEAR REACTIONS  $^{32}\text{S}(p, t)$ , E=34.5 MeV; measured triton spectra.  $^{30}\text{S}$ ; deduced level, J,  $\pi$ ,  $\gamma$  widths, proton widths, resonance strengths; deduced astrophysical reaction rates for  $^{29}\text{P}(p, \gamma)$ .  $^{30}\text{Si}$ ,  $^{30}\text{S}$ ; deduced mirror states. JOUR PRVCA 82 022801
- 2010STZZ NUCLEAR REACTIONS  $^{14}\text{C}(^{18}\text{O}, X)$ , E=37 MeV; measured  $E_\gamma$ ,  $I_\gamma$ , (residue) $\gamma$ -,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , DCO ratios using the Gammasphere array and Fragment Mass Analyzer.  $^{30}\text{Al}$ ,  $^{30}\text{Si}$ ; deduced levels, J,  $\pi$ , multipolarities. Comparison with shell-model calculations using the USD, USDA, and USDB effective interactions. PREPRINT Steppenbeck,7/26/2010
- 2010WA20 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{36}\text{S}, X)^{30}\text{Si} / ^{31}\text{Si} / ^{32}\text{Si} / ^{33}\text{Si} / ^{34}\text{Si} / ^{35}\text{Si} / ^{36}\text{Si}$ , E=215 MeV; measured mass spectrum of Si fragments,  $E_\gamma$ ,  $I_\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer.  $^{33}\text{Si}$ ; deduced levels, J,  $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301
- 2010ZH44 NUCLEAR REACTIONS  $\text{Si}(n, \gamma)^{25}\text{Mg} / ^{26}\text{Mg} / ^{27}\text{Al} / ^{28}\text{Al} / ^{28}\text{Si} / ^{29}\text{Si} / ^{30}\text{Si}$ , E=14.9 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma(\theta)$ ; deduced  $\sigma$ ,  $\sigma(\theta)$ , total  $\gamma$  radiation yield. Prompt and delayed  $\gamma$ .  $^{28}\text{Si}(n, p)$ ,  $(n, n')$ ,  $(n, \alpha)$ ,  $(n, np)$ ,  $(n, d)$ ,  $^{29}\text{Si}(n, n')$ ,  $(n, \alpha)$ ,  $^{30}\text{Si}(n, n')$ , E=14.9 MeV; deduced differential and integral isotopic cross sections. Comparisons with other experimental data and with evaluated results. JOUR PRVCA 82 047602



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**A=30 (continued)**

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| $^{30}\text{S}$ | 20090BZY | NUCLEAR REACTIONS $^{32}\text{S}(\text{p}, \text{t})$ , $E^*=4-13$ MeV; $^{34}\text{Ar}(\text{p}, \text{t})$ , $E^*=4-12$ MeV; $^{40}\text{Ca}(\text{p}, \text{t})$ , $E^*=4-13$ MeV; measured $E(\text{particle})$ , $I(\text{particle})$ ; deduced energy levels. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P288,O'Brien                              |
|                 | 2010SE07 | NUCLEAR REACTIONS $^{32}\text{S}(\text{p}, \text{t})$ , $E=34.5$ MeV; measured triton spectra. $^{30}\text{S}$ ; deduced level, $J$ , $\pi$ , $\gamma$ widths, proton widths, resonance strengths; deduced astrophysical reaction rates for $^{29}\text{P}(\text{p}, \gamma)$ . $^{30}\text{Si}$ , $^{30}\text{S}$ ; deduced mirror states. JOUR PRVCA 82 022801 |
|                 | 2010SE08 | NUCLEAR REACTIONS $^{32}\text{S}(\text{p}, \text{t})$ , $E=33.5, 34.5$ MeV; measured $E(\text{triton})$ , $I(\text{triton})$ , $E\gamma$ , $I\gamma$ , $(\text{triton})\gamma$ -coin. $^{30}\text{S}$ deduced levels, $J$ , $\pi$ . JOUR NUPAB 834 205c  |
|                 | 2010TA17 | NUCLEAR REACTIONS $^{16}\text{O}$ , $^{28}\text{Si}(\text{}^3\text{He}, \text{n})$ , $E=15$ MeV; measured ToF neutron $\sigma(E)$ . $^{18}\text{Ne}$ , $^{30}\text{S}$ ; deduced energies of levels. JOUR NUPAB 834 679c   |

**A=31**

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| $^{31}\text{F}$  | 2010FA04 | NUCLEAR REACTIONS $^9\text{Be}(\text{}^{32}\text{Mg}, \text{}^{30}\text{Ne})$ , $E=86.7, 99.7$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , and $\sigma$ using SeGA array. $^{32}\text{Mg}$ beam from $^9\text{Be}(\text{}^{48}\text{Ca}, \text{X})$ , $E=140$ MeV / nucleon. $^{30}\text{Ne}$ ; deduced levels, $J$ , $\pi$ , intruder configuration. $^{29,31}\text{F}$ ; discussed implications for binding energies. $^{32}\text{Mg}$ ; deduced configuration. Comparison with large-scale shell model calculations. JOUR PRVCA 81 041302  |
| $^{31}\text{Ne}$ | 2009A0ZZ | NUCLEAR REACTIONS $^9\text{Be}(\text{}^{48}\text{Ca}, \text{X})$ , $E=345$ MeV / nucleon. $^{20,22}\text{C}$ , $^{29,30,31,32}\text{Ne}$ , $^{40,42}\text{Si}$ measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76  |
|                  | 2009NA39 | NUCLEAR REACTIONS $\text{Pb}$ , $\text{C}(\text{}^{31}\text{Ne}, \text{}^{30}\text{Ne})$ , $(\text{}^{19}\text{C}, \text{}^{18}\text{C})$ $E=230-243$ MeV / nucleon; $^{31}\text{Ne}$ , $^{19}\text{C}$ ; measured reaction fragments; deduced inclusive one-neutron removal $\sigma$ , soft E1 excitations for $^{31}\text{Ne}$ , $B(\text{E}1)$ . Secondary beams from $^{48}\text{Ca}$ fragmentation. JOUR PRLTA 103 262501  |
| $^{31}\text{Na}$ | 2010D005 | NUCLEAR REACTIONS $\text{C}(\text{}^{32}\text{Na}, \text{}^{32}\text{Na}')$ , $(\text{}^{33}\text{Na}, \text{}^{33}\text{Na}')$ , $(\text{}^{32}\text{Na}, \text{}^{31}\text{Na})$ , $(\text{}^{34}\text{Na}, \text{}^{33}\text{Na})$ , $E$ AP 240 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using DALI2 array. $^{31}\text{Na}$ , $^{32}\text{Na}$ , $^{33}\text{Na}$ ; deduced levels, $J$ , $\pi$ , configurations and relevance to island of inversion nuclei. Comparison with shell-model calculations and level systematics of $^{21,23,25,27,29,31,33}\text{Na}$ nuclei. JOUR PRVCA 81 041305 |
| $^{31}\text{Mg}$ | 2008MIZL | RADIOACTIVITY $^{31,33}\text{Mg}(\beta^-)$ [from proton knockout from $^{32}\text{Al}$ , projectile and energy not specified]; measured $E\gamma$ , $I\gamma(\theta)$ ; deduced levels, $J$ , $\pi$ , polarization $\gamma$ spectrum. Results on CD only. CONF E.Lansing (NS2008),P141,Miller   |
| $^{31}\text{Al}$ | 2008MIZL | RADIOACTIVITY $^{31,33}\text{Mg}(\beta^-)$ [from proton knockout from $^{32}\text{Al}$ , projectile and energy not specified]; measured $E\gamma$ , $I\gamma(\theta)$ ; deduced levels, $J$ , $\pi$ , polarization $\gamma$ spectrum. Results on CD only. CONF E.Lansing (NS2008),P141,Miller   |

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**A=31 (continued)**

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| $^{31}\text{Si}$ | 2010WA20 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{30}\text{Si} / ^{31}\text{Si} / ^{32}\text{Si} / ^{33}\text{Si} / ^{34}\text{Si} / ^{35}\text{Si} / ^{36}\text{Si}$ , E=215 MeV; measured mass spectrum of Si fragments, $E\gamma$ , $I\gamma$ , (fragment) $\gamma$ -, $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer. $^{33}\text{Si}$ ; deduced levels, J, $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301 |
| $^{31}\text{P}$  | 2009KA37 | NUCLEAR REACTIONS $^{30}\text{Si}(\text{p}, \gamma)$ , E=1.4-2.7 MeV; measured $E\gamma$ , $I\gamma$ ; deduced excitation function, resonance strength, magnetic dipole resonance strengths for the ground and first excited states. JOUR BRSPE 73 1506  |
|                  | 2009KW02 | ATOMIC MASSES $^{32,33}\text{Si}$ , $^{32}\text{S}$ , $^{31,34}\text{P}$ ; measured masses using LEBIT Penning-trap spectrometer; deduced mass excesses. Discussed validity of quadratic form of isobaric multiplet mass equation (IMME). JOUR PRVCA 80 051302   |
|                  | 2010SU16 | NUCLEAR REACTIONS $^{12}\text{C}(^{22}\text{Mg}, \text{p})$ , ( $^{20}\text{Ne}, \text{p}$ ), E=70 MeV / nucleon; measured reaction products, proton spectrum; deduced angular and momentum correlations between two protons, space-time information. JOUR IMPEE 19 1823   |
| $^{31}\text{S}$  | 2010D003 | NUCLEAR REACTIONS $^9\text{Be}(^{37}\text{Ca}, \text{X})^{34}\text{Cl} / ^{31}\text{S}$ , E=195.7 MeV / nucleon; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced energies, J, $\pi$ , $T_{1/2}$ . $^{40}\text{Ca}$ fragmentation beams. JOUR NIMAE 613 218   |

**A=32**

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| $^{32}\text{Ne}$ | 2009A0ZZ | NUCLEAR REACTIONS $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , E=345 MeV / nucleon. $^{20,22}\text{C}$ , $^{29,30,31,32}\text{Ne}$ , $^{40,42}\text{Si}$ measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76   |
|                  | 2009D0ZX | NUCLEAR REACTIONS $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , E=345 MeV / nucleon; measured A(particle), Z(particle), $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin. $\text{C}(^{32}\text{Ne}, \text{X})$ , E=226 MeV / nucleon; $\text{C}(^{33}\text{Ne}, \text{X})$ , E=245 MeV / nucleon; measured $E\gamma$ , $I\gamma(\theta)$ . $^{32}\text{Ne}$ deduced $E(2_1^+)$ . Comparison with data on other Ne isotopes and Utsuno calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P82   |
| $^{32}\text{Na}$ | 2010D005 | NUCLEAR REACTIONS $\text{C}(^{32}\text{Na}, ^{32}\text{Na}')$ , ( $^{33}\text{Na}, ^{33}\text{Na}'$ ), ( $^{32}\text{Na}, ^{31}\text{Na}$ ), ( $^{34}\text{Na}, ^{33}\text{Na}$ ), E AP 240 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using DALI2 array. $^{31}\text{Na}$ , $^{32}\text{Na}$ , $^{33}\text{Na}$ ; deduced levels, J, $\pi$ , configurations and relevance to island of inversion nuclei. Comparison with shell-model calculations and level systematics of $^{21,23,25,27,29,31,33}\text{Na}$ nuclei. JOUR PRVCA 81 041305 |
| $^{32}\text{Mg}$ | 2008RAZR | NUCLEAR REACTIONS $^9\text{Be}(^{40}\text{Ar}, \text{X})^{32}\text{Mg}$ , E=140 MeV / nucleon; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin, E(particle), I(particle), Z(particle), A(particle). $^{32}\text{Mg}$ deduced levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P168,Ratkiewicz   |

**A=32 (continued)**

- 2010FA04 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{32}\text{Mg}, {}^{30}\text{Ne})$ ,  $E=86.7, 99.7$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , and  $\sigma$  using SeGA array.  ${}^{32}\text{Mg}$  beam from  ${}^9\text{Be}({}^{48}\text{Ca}, X)$ ,  $E=140$  MeV / nucleon.  ${}^{30}\text{Ne}$ ; deduced levels,  $J$ ,  $\pi$ , intruder configuration.  ${}^{29,31}\text{F}$ ; discussed implications for binding energies.  ${}^{32}\text{Mg}$ ; deduced configuration. Comparison with large-scale shell model calculations. JOUR PRVCA 81 041302
- 2010WI11 NUCLEAR REACTIONS  ${}^3\text{H}({}^{30}\text{Mg}, p)$ ,  $E=1.8$  MeV / nucleon; measured recoil proton spectrum,  $E\gamma$ ,  $I\gamma$ ,  $p\gamma$ -coinc.  ${}^{32}\text{Mg}$ ; deduced excitation energies,  $\sigma(\theta)$ , shape coexistence. Comparison with Monte Carlo shell-model calculations. JOUR PRLTA 105 252501
- ${}^{32}\text{Si}$  2009KW02 ATOMIC MASSES  ${}^{32,33}\text{Si}$ ,  ${}^{32}\text{S}$ ,  ${}^{31,34}\text{P}$ ; measured masses using LEBIT Penning-trap spectrometer; deduced mass excesses. Discussed validity of quadratic form of isobaric multiplet mass equation (IMME). JOUR PRVCA 80 051302
- 2010WA20 NUCLEAR REACTIONS  ${}^{208}\text{Pb}({}^{36}\text{S}, X){}^{30}\text{Si} / {}^{31}\text{Si} / {}^{32}\text{Si} / {}^{33}\text{Si} / {}^{34}\text{Si} / {}^{35}\text{Si} / {}^{36}\text{Si}$ ,  $E=215$  MeV; measured mass spectrum of Si fragments,  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer.  ${}^{33}\text{Si}$ ; deduced levels,  $J$ ,  $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301
- ${}^{32}\text{P}$  2008CHZK NUCLEAR REACTIONS  ${}^{18}\text{O}({}^{18}\text{O}, X)$ ,  $E=34$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $E(\text{particle})$ ,  $A(\text{particle})$ ,  $Z(\text{particle})$ ,  $I(\text{particle})$ , polarization.  ${}^{32,33,34}\text{P}$ ,  ${}^{33}\text{S}$  deduced levels,  $J$ ,  $\pi$ ; calculated levels,  $J$ ,  $\pi$ ,  $B(E2)$  using spherical shell model. Results on CD only. CONF E.Lansing (NS2008),P87,Chakrabarti
- 2010GH02 NUCLEAR REACTIONS  ${}^{18}\text{O}({}^{18}\text{O}, \text{xnxp})$ ,  $({}^{16}\text{O}, \text{xnxp}){}^{32}\text{P} / {}^{34}\text{P}$ ,  $E=34$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $J$ ,  $\pi$ , level scheme. Comparison with shell model calculations. JOUR PRAMC 75 13
- ${}^{32}\text{S}$  2009KW02 ATOMIC MASSES  ${}^{32,33}\text{Si}$ ,  ${}^{32}\text{S}$ ,  ${}^{31,34}\text{P}$ ; measured masses using LEBIT Penning-trap spectrometer; deduced mass excesses. Discussed validity of quadratic form of isobaric multiplet mass equation (IMME). JOUR PRVCA 80 051302
- 2010AD03 RADIOACTIVITY  ${}^{33}\text{Ar}(\beta^+)$ ,  $(\text{EC})$ ,  $(\beta^+p)$ ,  $(\text{EC}p)$ ; measured  $E\gamma$ ,  $E_p$ ,  $I_p$ , and  $\beta p$ -,  $\gamma p$ -coin.  ${}^{33}\text{Cl}$ ; deduced levels,  $J$ ,  $\pi$ , IAS, logft, and  $B(\text{GT})$ .  ${}^{32}\text{S}$ ; deduced levels,  $J$ ,  $\pi$ , and proton feedings. Comparison with USD shell-model calculations. Barrier penetration calculations for spin assignments. JOUR PRVCA 81 024311
- 2010PA18 NUCLEAR REACTIONS  ${}^{12}\text{C}({}^{20}\text{Ne}, X)$ ,  $E=145, 160$  MeV;  ${}^{27}\text{Al}({}^{20}\text{Ne}, X)$ ,  $E=160$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  ${}^{32}\text{S}$ ,  ${}^{47}\text{V}$ ; deduced highest spin and high energy excitations from the shapes of giant dipole resonances (GDR), strength functions and parameters using rotating liquid drop model (RLDM) and thermal shape fluctuation model (TSFM). Calculated liquid drop model free energy surfaces, and equilibrium shapes as a function of quadrupole deformation parameters and spin. Possible connection to molecular structure of  ${}^{16}\text{O}+{}^{16}\text{O}$  in the  ${}^{32}\text{S}$  superdeformed band. JOUR PRVCA 81 061302
- ${}^{32}\text{Cl}$  2010WR01 NUCLEAR REACTIONS  ${}^{20}\text{Ne}$ ,  ${}^{24}\text{Mg}$ ,  ${}^{28}\text{Si}$ ,  ${}^{32}\text{S}$ ,  ${}^{36}\text{Ar}({}^3\text{He}, t)$ ,  $E=32$  MeV; measured triton spectra using Q3D magnetic spectrograph; deduced levels,  $Q$  values, mass excesses. JOUR PRVCA 81 055503

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**A=32 (continued)**

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| 2010WR01                  | ATOMIC MASSES $^{20}\text{Na}$ , $^{24}\text{Al}$ , $^{28}\text{P}$ , $^{32}\text{Cl}$ ; measured mass excesses using $(^3\text{He}, t)$ reaction. $^{36}\text{Ar}(^3\text{He}, t)^{36}\text{K}$ used for calibration. Comparison with AME-2003. JOUR PRVCA 81 055503  |
| 2010WR02                  | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured $E(t)$ , $I(t)$ ; deduced levels and resonances. $^{19}\text{Ne}$ , $^{23}\text{Mg}$ , $^{27}\text{Si}$ , $^{31}\text{S}$ , $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates. $^{36}\text{Cl}$ , $^{36}\text{Ar}$ , $^{36}\text{K}$ ; analyzed $A=36$ , $T=1$ triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805 |
| $^{32}\text{Ar}$ 20090BZY | NUCLEAR REACTIONS $^{32}\text{S}(p, t)$ , $E^*=4-13$ MeV; $^{34}\text{Ar}(p, t)$ , $E^*=4-12$ MeV; $^{40}\text{Ca}(p, t)$ , $E^*=4-13$ MeV; measured $E(\text{particle})$ , $I(\text{particle})$ ; deduced energy levels. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P288,O'Brien  |

**A=33**

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| $^{33}\text{Na}$ 2010D005 | NUCLEAR REACTIONS $C(^{32}\text{Na}, ^{32}\text{Na}')$ , $(^{33}\text{Na}, ^{33}\text{Na}')$ , $(^{32}\text{Na}, ^{31}\text{Na})$ , $(^{34}\text{Na}, ^{33}\text{Na})$ , $E$ AP 240 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using DALI2 array. $^{31}\text{Na}$ , $^{32}\text{Na}$ , $^{33}\text{Na}$ ; deduced levels, $J$ , $\pi$ , configurations and relevance to island of inversion nuclei. Comparison with shell-model calculations and level systematics of $^{21,23,25,27,29,31,33}\text{Na}$ nuclei. JOUR PRVCA 81 041305 |
| $^{33}\text{Mg}$ 2008MIZL | RADIOACTIVITY $^{31,33}\text{Mg}(\beta^-)$ [from proton knockout from $^{32}\text{Al}$ , projectile and energy not specified]; measured $E\gamma$ , $I\gamma(\theta)$ ; deduced levels, $J$ , $\pi$ , polarization $\gamma$ spectrum. Results on CD only. CONF E.Lansing (NS2008),P141,Miller  |
| 2010KA05                  | NUCLEAR REACTIONS $C(^{33}\text{Mg}, ^{32}\text{Mg})$ , $E=898$ MeV / nucleon; measured $^{32}\text{Mg}$ fragments using MUSIC setup at GSI, $\sigma$ , longitudinal momentum distribution. $^{33}\text{Mg}$ ; deduced ground state configuration, relevance to 'Island of Inversion'. Monte Carlo shell model (MCSM) calculation with the SDPF-M interaction. $^{33}\text{Mg}$ beam produced in $\text{Be}(^{48}\text{Ca}, X)$ at 1 GeV / nucleon. JOUR PYLBB 685 253   |
| $^{33}\text{Al}$ 2008MIZL | RADIOACTIVITY $^{31,33}\text{Mg}(\beta^-)$ [from proton knockout from $^{32}\text{Al}$ , projectile and energy not specified]; measured $E\gamma$ , $I\gamma(\theta)$ ; deduced levels, $J$ , $\pi$ , polarization $\gamma$ spectrum. Results on CD only. CONF E.Lansing (NS2008),P141,Miller  |
| 2009NA41                  | RADIOACTIVITY $^{33}\text{Al}(\beta^-)$ [from $\text{Be}(^{36}\text{S}, X)$ , $E=77.5$ MeV / nucleon]; measured $\beta$ -NQR spectra from polarized $^{33}\text{Al}$ nuclei. LISE spectrometer at GANIL. JOUR ZAANE 42 383   |
| 2009NA41                  | NUCLEAR MOMENTS $^{33}\text{Al}$ ; measured electric quadrupole moment by $\beta$ -ray detected nuclear quadrupole resonance ( $\beta$ -NQR) method. Relevance to 'Island of Inversion'. Polarized $^{33}\text{Al}$ nuclei. JOUR ZAANE 42 383  |
| 2009UEZZ                  | RADIOACTIVITY $^{33}\text{Al}(\beta^-)$ [from $^9\text{Be}+^{36}\text{S}$ at 77.5 MeV / nucleon]; measured $\beta$ -NMR from polarized source; deduced electric quadrupole moment. REPT RIKEN 2008 Annual,P22,Ueno   |

KEYNUMBERS AND KEYWORDS

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**A=33 (continued)**

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| $^{33}\text{Si}$ | 2009KW02 | ATOMIC MASSES $^{32,33}\text{Si}$ , $^{32}\text{S}$ , $^{31,34}\text{P}$ ; measured masses using LEBIT Penning-trap spectrometer; deduced mass excesses. Discussed validity of quadratic form of isobaric multiplet mass equation (IMME). JOUR PRVCA 80 051302   |
|                  | 2009NA41 | RADIOACTIVITY $^{33}\text{Al}(\beta^-)$ [from $\text{Be}(^{36}\text{S}, \text{X})$ , $E=77.5$ MeV / nucleon]; measured $\beta$ -NQR spectra from polarized $^{33}\text{Al}$ nuclei. LISE spectrometer at GANIL. JOUR ZAANE 42 383  |
|                  | 2009UEZZ | RADIOACTIVITY $^{33}\text{Al}(\beta^-)$ [from $^9\text{Be}+^{36}\text{S}$ at 77.5 MeV / nucleon]; measured $\beta$ -NMR from polarized source; deduced electric quadrupole moment. REPT RIKEN 2008 Annual,P22,Ueno   |
|                  | 2010WA20 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{30}\text{Si} / ^{31}\text{Si} / ^{32}\text{Si} / ^{33}\text{Si} / ^{34}\text{Si} / ^{35}\text{Si} / ^{36}\text{Si}$ , $E=215$ MeV; measured mass spectrum of Si fragments, $E\gamma$ , $I\gamma$ , (fragment) $\gamma^-$ , $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer. $^{33}\text{Si}$ ; deduced levels, $J$ , $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301 |
| $^{33}\text{P}$  | 2008CHZK | NUCLEAR REACTIONS $^{18}\text{O}(^{18}\text{O}, \text{X})$ , $E=34$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $E(\text{particle})$ , $A(\text{particle})$ , $Z(\text{particle})$ , $I(\text{particle})$ , polarization. $^{32,33,34}\text{P}$ , $^{33}\text{S}$ deduced levels, $J$ , $\pi$ ; calculated levels, $J$ , $\pi$ , $B(E2)$ using spherical shell model. Results on CD only. CONF E.Lansing (NS2008),P87,Chakrabarti  |
|                  | 2008CHZK | NUCLEAR REACTIONS $^{18}\text{O}(^{18}\text{O}, \text{X})$ , $E=34$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $E(\text{particle})$ , $A(\text{particle})$ , $Z(\text{particle})$ , $I(\text{particle})$ , polarization. $^{32,33,34}\text{P}$ , $^{33}\text{S}$ deduced levels, $J$ , $\pi$ ; calculated levels, $J$ , $\pi$ , $B(E2)$ using spherical shell model. Results on CD only. CONF E.Lansing (NS2008),P87,Chakrabarti  |
| $^{33}\text{Cl}$ | 2010AD03 | RADIOACTIVITY $^{33}\text{Ar}(\beta^+)$ , (EC), ( $\beta^+\text{p}$ ), (ECp); measured $E\gamma$ , $E\text{p}$ , $I\text{p}$ , and $\beta\text{p}$ -, $\gamma\text{p}$ -coin. $^{33}\text{Cl}$ ; deduced levels, $J$ , $\pi$ , IAS, logft, and $B(\text{GT})$ . $^{32}\text{S}$ ; deduced levels, $J$ , $\pi$ , and proton feedings. Comparison with USD shell-model calculations. Barrier penetration calculations for spin assignments. JOUR PRVCA 81 024311   |
|                  | 2010SU16 | NUCLEAR REACTIONS $^{12}\text{C}(^{22}\text{Mg}, \text{p})$ , ( $^{20}\text{Ne}, \text{p}$ ), $E=70$ MeV / nucleon; measured reaction products, proton spectrum; deduced angular and momentum correlations between two protons, space-time information. JOUR IMPEE 19 1823   |
| $^{33}\text{Ar}$ | 2010AD03 | RADIOACTIVITY $^{33}\text{Ar}(\beta^+)$ , (EC), ( $\beta^+\text{p}$ ), (ECp); measured $E\gamma$ , $E\text{p}$ , $I\text{p}$ , and $\beta\text{p}$ -, $\gamma\text{p}$ -coin. $^{33}\text{Cl}$ ; deduced levels, $J$ , $\pi$ , IAS, logft, and $B(\text{GT})$ . $^{32}\text{S}$ ; deduced levels, $J$ , $\pi$ , and proton feedings. Comparison with USD shell-model calculations. Barrier penetration calculations for spin assignments. JOUR PRVCA 81 024311   |
|                  | 2010LE03 | NUCLEAR REACTIONS $^1\text{H}(^{34}\text{Ar}, \text{d})$ , ( $^{36}\text{Ar}, \text{d}$ ), ( $^{46}\text{Ar}, \text{d}$ ), $E=33$ MeV / nucleon; measured $E\delta$ , $I\delta$ ; $^{34,36,46}\text{Ar}$ ; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701   |

## A=34

- <sup>34</sup>Si      2010WA20      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>30</sup>Si / <sup>31</sup>Si / <sup>32</sup>Si / <sup>33</sup>Si / <sup>34</sup>Si / <sup>35</sup>Si / <sup>36</sup>Si, E=215 MeV; measured mass spectrum of Si fragments, E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer. <sup>33</sup>Si; deduced levels, J,  $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301
- 2010ZE03      NUCLEAR REACTIONS <sup>34</sup>P(<sup>7</sup>Li,  $\gamma$ <sup>7</sup>Be)<sup>34</sup>Si, E=100 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ -particle coin.; deduced  $\sigma(\theta)$ ,  $\beta^+$  Gamow-Teller transition strength distribution. Comparison with shell model calculations. JOUR PRLTA 104 212504
- <sup>34</sup>P      2008CHZK      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, X), E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(particle), A(particle), Z(particle), I(particle), polarization. <sup>32,33,34</sup>P, <sup>33</sup>S deduced levels, J,  $\pi$ ; calculated levels, J,  $\pi$ , B(E2) using spherical shell model. Results on CD only. CONF E.Lansing (NS2008),P87,Chakrabarti
- 2009KW02      ATOMIC MASSES <sup>32,33</sup>Si, <sup>32</sup>S, <sup>31,34</sup>P; measured masses using LEBIT Penning-trap spectrometer; deduced mass excesses. Discussed validity of quadratic form of isobaric multiplet mass equation (IMME). JOUR PRVCA 80 051302
- 2010GH02      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, xnnp), (<sup>16</sup>O, xnnp)<sup>32</sup>P / <sup>34</sup>P, E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced J,  $\pi$ , level scheme. Comparison with shell model calculations. JOUR PRAMC 75 13
- <sup>34</sup>S      2009ER07      RADIOACTIVITY <sup>34</sup>Cl, <sup>38</sup>K(EC); measured cyclotron frequency ratios; deduced Q-values with high precision. Online Penning trap. JOUR PRLTA 103 252501
- 2009KIZW      NUCLEAR REACTIONS <sup>33</sup>S(n,  $\gamma$ ), E=low; measured E $\gamma$ , I $\gamma$ ; deduced <sup>34</sup>S nuclear levels using TELLA-2 analysis. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P575,Kin
- 2010WA12      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>34</sup>S / <sup>35</sup>S / <sup>36</sup>S / <sup>37</sup>S / <sup>38</sup>S / <sup>39</sup>S / <sup>40</sup>S / <sup>41</sup>S, E=215 MeV; measured yields. JOUR PRVCA 81 054305
- <sup>34</sup>Cl      2009ER07      RADIOACTIVITY <sup>34</sup>Cl, <sup>38</sup>K(EC); measured cyclotron frequency ratios; deduced Q-values with high precision. Online Penning trap. JOUR PRLTA 103 252501
- 2010D003      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>37</sup>Ca, X)<sup>34</sup>Cl / <sup>31</sup>S, E=195.7 MeV / nucleon; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced energies, J,  $\pi$ , T<sub>1/2</sub>. <sup>40</sup>Ca fragmentation beams. JOUR NIMAE 613 218
- 2010D01      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>36</sup>Cl / <sup>37</sup>Cl / <sup>38</sup>Cl / <sup>39</sup>Cl / <sup>40</sup>Cl / <sup>41</sup>Cl / <sup>42</sup>Cl, E=215 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA  $\gamma$ -ray detector array. <sup>38</sup>Cl; deduced levels, J,  $\pi$ , and configurations. <sup>34,36,38,40</sup>Cl; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318
- 2011EN01      NUCLEAR REACTIONS <sup>36</sup>Ar, Ar(d,  $\alpha$ )<sup>34</sup>Cl / <sup>38</sup>Cl, E=8.4 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced thick target yields. JOUR ARISE 69 75

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KEYNUMBERS AND KEYWORDS

**A=34 (continued)**

<sup>34</sup>Ar      2010LE03      NUCLEAR REACTIONS <sup>1</sup>H(<sup>34</sup>Ar, d), (<sup>36</sup>Ar, d), (<sup>46</sup>Ar, d), E=33 MeV / nucleon; measured E $\delta$ , I $\delta$ ; <sup>34,36,46</sup>Ar; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701

**A=35**

<sup>35</sup>Si      2010WA20      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>30</sup>Si / <sup>31</sup>Si / <sup>32</sup>Si / <sup>33</sup>Si / <sup>34</sup>Si / <sup>35</sup>Si / <sup>36</sup>Si, E=215 MeV; measured mass spectrum of Si fragments, E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer. <sup>33</sup>Si; deduced levels, J,  $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301

<sup>35</sup>S      2010WA12      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>34</sup>S / <sup>35</sup>S / <sup>36</sup>S / <sup>37</sup>S / <sup>38</sup>S / <sup>39</sup>S / <sup>40</sup>S / <sup>41</sup>S, E=215 MeV; measured yields. JOUR PRVCA 81 054305

<sup>35</sup>Ar      2010LE03      NUCLEAR REACTIONS <sup>1</sup>H(<sup>34</sup>Ar, d), (<sup>36</sup>Ar, d), (<sup>46</sup>Ar, d), E=33 MeV / nucleon; measured E $\delta$ , I $\delta$ ; <sup>34,36,46</sup>Ar; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701

**A=36**

<sup>36</sup>Si      2010WA20      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>30</sup>Si / <sup>31</sup>Si / <sup>32</sup>Si / <sup>33</sup>Si / <sup>34</sup>Si / <sup>35</sup>Si / <sup>36</sup>Si, E=215 MeV; measured mass spectrum of Si fragments, E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin with CLARA array and PRISMA spectrometer. <sup>33</sup>Si; deduced levels, J,  $\pi$ , multipolarity, shell-model configurations. Comparison with large-scale shell model calculations using PSDPFB effective interaction. JOUR PRVCA 81 064301

<sup>36</sup>S      2008BEZH      NUCLEAR MOMENTS <sup>70</sup>Ge, <sup>68</sup>Zn, <sup>92,94</sup>Zr, <sup>36,38,40</sup>S, <sup>38,40,42</sup>Ar; measured hyperfine spectra, Doppler-shifted  $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle

2008CHZL      RADIOACTIVITY <sup>76</sup>Ge(2 $\beta^-$ );<sup>36</sup>Ar(2EC); measured E $\gamma$ , I $\gamma$ , electron spectrum; deduced 2 $\beta$ (0 $\nu$ )-decay T<sub>1/2}. Heidelberg-Moscow and Gerda experiments. PREPRINT arXiv:0812.1206v1 [nucl-ex]</sub>

2010WA12      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>34</sup>S / <sup>35</sup>S / <sup>36</sup>S / <sup>37</sup>S / <sup>38</sup>S / <sup>39</sup>S / <sup>40</sup>S / <sup>41</sup>S, E=215 MeV; measured yields. JOUR PRVCA 81 054305

<sup>36</sup>Cl      2010D01      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>36</sup>S, X)<sup>36</sup>Cl / <sup>37</sup>Cl / <sup>38</sup>Cl / <sup>39</sup>Cl / <sup>40</sup>Cl / <sup>41</sup>Cl / <sup>42</sup>Cl, E=215 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA  $\gamma$ -ray detector array. <sup>38</sup>Cl; deduced levels, J,  $\pi$ , and configurations. <sup>34,36,38,40</sup>Cl; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318

KEYNUMBERS AND KEYWORDS

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**A=36 (continued)**

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|                  | 2010WR02 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured $E(t)$ , $I(t)$ ; deduced levels and resonances. $^{19}\text{Ne}$ , $^{23}\text{Mg}$ , $^{27}\text{Si}$ , $^{31}\text{S}$ , $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates. $^{36}\text{Cl}$ , $^{36}\text{Ar}$ , $^{36}\text{K}$ ; analyzed $A=36$ , $T=1$ triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805   |
| $^{36}\text{Ar}$ | 2008CHZL | RADIOACTIVITY $^{76}\text{Ge}(2\beta^-)$ ; $^{36}\text{Ar}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , electron spectrum; deduced $2\beta(0\nu)$ -decay $T_{1/2}$ . Heidelberg-Moscow and Gerda experiments. PREPRINT arXiv:0812.1206v1 [nucl-ex]  |
|                  | 2010LE03 | NUCLEAR REACTIONS $^1\text{H}(^{34}\text{Ar}, d)$ , $(^{36}\text{Ar}, d)$ , $(^{46}\text{Ar}, d)$ , $E=33$ MeV / nucleon; measured $E\delta$ , $I\delta$ ; $^{34,36,46}\text{Ar}$ ; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701  |
|                  | 2010SC21 | NUCLEAR REACTIONS $^{40}\text{Ca}(^{40}\text{Ca}, \alpha)$ , $E=50$ MeV / nucleon; measured $E\alpha$ , $I\alpha$ , $\sigma$ , $\sigma(\theta)$ . $^{36}\text{Ar}$ ; deduced missing energy spectrum, levels, $J$ , $\pi$ . Comparison of $\sigma(\theta)$ with calculations using time-dependent Schroedinger equation (TDSE). JOUR PRVCA 82 031301   |
|                  | 2010WR02 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured $E(t)$ , $I(t)$ ; deduced levels and resonances. $^{19}\text{Ne}$ , $^{23}\text{Mg}$ , $^{27}\text{Si}$ , $^{31}\text{S}$ , $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates. $^{36}\text{Cl}$ , $^{36}\text{Ar}$ , $^{36}\text{K}$ ; analyzed $A=36$ , $T=1$ triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805   |
| $^{36}\text{K}$  | 2008AMZX | RADIOACTIVITY $^{36,37}\text{Ca}$ [from $^{38}\text{Ca}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{38}\text{Ca})$ , $E=140$ MeV / nucleon]]; $^{36}\text{K}$ [from $^{37}\text{K}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{37}\text{K})$ , $E=140$ MeV / nucleon]]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $E$ , $J$ , $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P74,Amthor  |
|                  | 2010BE01 | NUCLEAR REACTIONS $^{197}\text{Au}(^{68}\text{Ni}, ^{68}\text{Ni}')$ , $E=600$ MeV / nucleon; $^{197}\text{Au}(^{54}\text{Cr}, ^{54}\text{Cr}')$ , $E=100$ MeV / nucleon; $^{197}\text{Au}(^{132}\text{Xe}, ^{132}\text{Xe}')$ , $E=100$ MeV / nucleon; $^{27}\text{Al}(p, 2p)$ , $E > 100$ MeV; $\text{Ge}$ , $^{27}\text{Al}(n, n')$ , $E$ not given; $\text{Be}(^{37}\text{Ca}, X)^{36}\text{K}$ , $E=200$ MeV / nucleon; measured reaction fragments, $E\gamma$ , $I\gamma$ ; deduced energy levels, $B(E2)$ values, lifetimes, $\sigma(\theta)$ . JOUR APOBB 41 505 |
|                  | 2010WR01 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured triton spectra using Q3D magnetic spectrograph; deduced levels, $Q$ values, mass excesses. JOUR PRVCA 81 055503   |
|                  | 2010WR02 | NUCLEAR REACTIONS $^{20}\text{Ne}$ , $^{24}\text{Mg}$ , $^{28}\text{Si}$ , $^{32}\text{S}$ , $^{36}\text{Ar}(^3\text{He}, t)$ , $E=32$ MeV; measured $E(t)$ , $I(t)$ ; deduced levels and resonances. $^{19}\text{Ne}$ , $^{23}\text{Mg}$ , $^{27}\text{Si}$ , $^{31}\text{S}$ , $^{35}\text{Ar}(p, \gamma)$ ; deduced improved thermonuclear reaction rates. $^{36}\text{Cl}$ , $^{36}\text{Ar}$ , $^{36}\text{K}$ ; analyzed $A=36$ , $T=1$ triplet states. Comparison with previous experiments. JOUR PRVCA 82 035805   |
| $^{36}\text{Ca}$ | 2008AMZX | RADIOACTIVITY $^{36,37}\text{Ca}$ [from $^{38}\text{Ca}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{38}\text{Ca})$ , $E=140$ MeV / nucleon]]; $^{36}\text{K}$ [from $^{37}\text{K}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{37}\text{K})$ , $E=140$ MeV / nucleon]]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $E$ , $J$ , $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P74,Amthor  |
|                  | 2008AZZZ | NUCLEAR REACTIONS $^9\text{Be}(^{37}\text{Ca}, n)$ , $E=60$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; $^{36}\text{Ca}$ ; deduced level energies, $J$ , $\pi$ . Comparison with $^{36}\text{S}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez  |



KEYNUMBERS AND KEYWORDS

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**A=37**

$^{37}\text{S}$	2010WA12	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{34}\text{S} / ^{35}\text{S} / ^{36}\text{S} / ^{37}\text{S} / ^{38}\text{S} / ^{39}\text{S} / ^{40}\text{S} / ^{41}\text{S}$ , E=215 MeV; measured yields. JOUR PRVCA 81 054305
$^{37}\text{Cl}$	2010OD01	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, J, $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318
$^{37}\text{Ar}$	2008MIZK	RADIOACTIVITY $^{37}\text{K}(\text{EC})$ ; measured $E\beta$ , $I\beta$ using quadrupole resonance; deduced quadrupole moment. Results on CD only. CONF E.Lansing (NS2008),P142,Minamisono
$^{37}\text{K}$	2008MIZK	RADIOACTIVITY $^{37}\text{K}(\text{EC})$ ; measured $E\beta$ , $I\beta$ using quadrupole resonance; deduced quadrupole moment. Results on CD only. CONF E.Lansing (NS2008),P142,Minamisono
$^{37}\text{Ca}$	2008AMZX	RADIOACTIVITY $^{36,37}\text{Ca}$ [from $^{38}\text{Ca}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{38}\text{Ca})$ , E=140 MeV / nucleon]]; $^{36}\text{K}$ [from $^{37}\text{K}$ [from $^9\text{Be}(^{40}\text{Ca}, ^{37}\text{K})$ , E=140 MeV / nucleon]]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced E, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P74,Amthor

**A=38**

$^{38}\text{S}$	2008BEZH	NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle
	2010WA12	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin using PRISMA spectrometer and CLARA array. $^{40}\text{S}$ ; deduced levels, J, $\pi$ , B(E2), configurations. Comparison with previous work and large-scale sd-pf shell model calculations. Systematics of energies of first 2+ and 4+ states and B(E2) for $^{38,40,42,44}\text{S}$ nuclei. $^{38}\text{S}$ ; measured $E\gamma$ , $I\gamma$ . JOUR PRVCA 81 054305
	2010WA12	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{34}\text{S} / ^{35}\text{S} / ^{36}\text{S} / ^{37}\text{S} / ^{38}\text{S} / ^{39}\text{S} / ^{40}\text{S} / ^{41}\text{S}$ , E=215 MeV; measured yields. JOUR PRVCA 81 054305
$^{38}\text{Cl}$	2010OD01	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, J, $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318
	2011EN01	NUCLEAR REACTIONS $^{36}\text{Ar}$ , $\text{Ar}(d, \alpha)^{34}\text{Cl} / ^{38}\text{Cl}$ , E=8.4 MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced thick target yields. JOUR ARISE 69 75
$^{38}\text{Ar}$	2008BEZH	NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle

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**A=38 (continued)**

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|                  | 2009ER07 | RADIOACTIVITY $^{34}\text{Cl}$ , $^{38}\text{K}(\text{EC})$ ; measured cyclotron frequency ratios; deduced Q-values with high precision. Online Pening trap. JOUR PRLTA 103 252501   |
|                  | 2010BA43 | RADIOACTIVITY $^{38m}\text{K}(\beta^+)$ [ $^{38}\text{K}$ beam from $\text{Ca}(\text{p}, \text{X})$ , $E=500$ MeV]; measured integral activity using a $4\pi$ continuous gas flow proportional $\beta$ counter, half-life; deduced Ft value for superallowed $\beta$ transition. Comparison with previous half-life measurements. JOUR PRVCA 82 045501   |
| $^{38}\text{K}$  | 2008SVZX | RADIOACTIVITY $^{62}\text{Ga}$ ; measured $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft, branching ratio; calculated isospin symmetry breaking using shell model; $^{26}\text{Na}(\beta^-)$ ; measured $I\beta(t)$ , $I\gamma(t)$ ; deduced $T_{1/2}$ ; $^{18}\text{Ne}$ ; measured $E\gamma$ , $I\gamma$ , $I\beta(t)$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ ; $^{38}\text{K}$ ; measured $I\beta(t)$ ; deduced isomer decay, $T_{1/2}$ , M3 branching ratio, log ft; $^{74}\text{Rb}$ ; measured decay products; deduced $T_{1/2}$ , branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008), P19, Svensson |
|                  | 2009ER07 | RADIOACTIVITY $^{34}\text{Cl}$ , $^{38}\text{K}(\text{EC})$ ; measured cyclotron frequency ratios; deduced Q-values with high precision. Online Pening trap. JOUR PRLTA 103 252501   |
|                  | 2010BA43 | RADIOACTIVITY $^{38m}\text{K}(\beta^+)$ [ $^{38}\text{K}$ beam from $\text{Ca}(\text{p}, \text{X})$ , $E=500$ MeV]; measured integral activity using a $4\pi$ continuous gas flow proportional $\beta$ counter, half-life; deduced Ft value for superallowed $\beta$ transition. Comparison with previous half-life measurements. JOUR PRVCA 82 045501   |
|                  | 2010BL09 | RADIOACTIVITY $^{38}\text{Ca}(\beta^+)$ , $^{39}\text{Ca}(\beta^+)$ [from $\text{Ti}(\text{p}, \text{X})$ , $E=1.4$ GeV]; measured CaF molecule ToF, $E\beta$ , $I\beta(t)$ ; deduced $T_{1/2}$ . Comparison with other results. JOUR ZAANE 44 363   |
| $^{38}\text{Ca}$ | 2008KOYY | RADIOACTIVITY $^{17}\text{Ne}$ ; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; $^{38}\text{Ca}$ ; $^{26}\text{Al}$ ; $^{80}\text{Zn}$ ; $^{81}\text{Zn}$ ; $^{132}\text{Sn}$ ; $^{134}\text{Sn}$ ; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in $^{17}\text{Ne}$ spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008), P20, Kowalska  |
|                  | 2009OBZY | NUCLEAR REACTIONS $^{32}\text{S}(\text{p}, \text{t})$ , $E^*=4-13$ MeV; $^{34}\text{Ar}(\text{p}, \text{t})$ , $E^*=4-12$ MeV; $^{40}\text{Ca}(\text{p}, \text{t})$ , $E^*=4-13$ MeV; measured $E(\text{particle})$ , $I(\text{particle})$ ; deduced energy levels. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc, P288, O'Brien  |
|                  | 2010BL09 | RADIOACTIVITY $^{38}\text{Ca}(\beta^+)$ , $^{39}\text{Ca}(\beta^+)$ [from $\text{Ti}(\text{p}, \text{X})$ , $E=1.4$ GeV]; measured CaF molecule ToF, $E\beta$ , $I\beta(t)$ ; deduced $T_{1/2}$ . Comparison with other results. JOUR ZAANE 44 363   |

**A=39**

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| $^{39}\text{S}$ | 2010WA12 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{34}\text{S} / ^{35}\text{S} / ^{36}\text{S} / ^{37}\text{S} / ^{38}\text{S} / ^{39}\text{S} / ^{40}\text{S} / ^{41}\text{S}$ , $E=215$ MeV; measured yields. JOUR PRVCA 81 054305 |
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**A=39 (continued)**

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| $^{39}\text{Cl}$ | 20100D01 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, J, $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318 |
| $^{39}\text{Ar}$ | 2008LEZF | RADIOACTIVITY $^{39m}\text{K}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin; deduced branching ratio, B(M3), log ft. Results on CD only. CONF E.Lansing (NS2008),P131,Leach   |
| $^{39}\text{K}$  | 2008LEZF | RADIOACTIVITY $^{39m}\text{K}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin; deduced branching ratio, B(M3), log ft. Results on CD only. CONF E.Lansing (NS2008),P131,Leach   |
|                  | 2010BL09 | RADIOACTIVITY $^{38}\text{Ca}(\beta^+)$ , $^{39}\text{Ca}(\beta^+)$ [from Ti(p, X), E=1.4 GeV]; measured CaF molecule ToF, E $\beta$ , I $\beta$ (t); deduced $T_{1/2}$ . Comparison with other results. JOUR ZAANE 44 363   |
|                  | 2010YA05 | NUCLEAR REACTIONS $^{40}\text{Ca}$ (polarized p, 2p), E=392 MeV; measured Ep, Ip, $\sigma$ , recoil-momentum distributions, and analyzing powers using Grand Raiden spectrometer. $^{39}\text{K}$ ; deduced levels, strength distributions, centroid energies, widths, spectroscopic factors. $^{40}\text{Ca}$ ; deduced spectroscopic factors and strength distributions for the deeply bound orbitals. DWIA analysis. Comparison with predictions of Independent-Particle shell Model. JOUR PRVCA 81 044315                    |
| $^{39}\text{Ca}$ | 2010BL09 | RADIOACTIVITY $^{38}\text{Ca}(\beta^+)$ , $^{39}\text{Ca}(\beta^+)$ [from Ti(p, X), E=1.4 GeV]; measured CaF molecule ToF, E $\beta$ , I $\beta$ (t); deduced $T_{1/2}$ . Comparison with other results. JOUR ZAANE 44 363   |

**A=40**

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| $^{40}\text{Si}$ | 2009A0ZZ | NUCLEAR REACTIONS $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , E=345 MeV / nucleon. $^{20,22}\text{C}$ , $^{29,30,31,32}\text{Ne}$ , $^{40,42}\text{Si}$ measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76  |
| $^{40}\text{S}$  | 2008BEZH | NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle  |
|                  | 2009RI12 | ATOMIC MASSES $^{40,41,42,43,44}\text{S}$ ; measured precise mass excesses using LEBIT Penning trap mass spectrometer. Comparison with other recent mass measurements. Systematics of S(2n) values for N=24-30, Z=15-18 nuclides. JOUR PRVCA 80 064321   |
|                  | 2010WA12 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin using PRISMA spectrometer and CLARA array. $^{40}\text{S}$ ; deduced levels, J, $\pi$ , B(E2), configurations. Comparison with previous work and large-scale sd-pf shell model calculations. Systematics of energies of first 2+ and 4+ states and B(E2) for $^{38,40,42,44}\text{S}$ nuclei. $^{38}\text{S}$ ; measured $E\gamma$ , $I\gamma$ . JOUR PRVCA 81 054305 |
|                  | 2010WA12 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{34}\text{S} / ^{35}\text{S} / ^{36}\text{S} / ^{37}\text{S} / ^{38}\text{S} / ^{39}\text{S} / ^{40}\text{S} / ^{41}\text{S}$ , E=215 MeV; measured yields. JOUR PRVCA 81 054305   |

KEYNUMBERS AND KEYWORDS

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**A=40 (continued)**

$^{40}\text{Cl}$	20100D01	NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, J, $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318
$^{40}\text{Ar}$	2008BEZH	NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle
	2010ID02	NUCLEAR REACTIONS $^{26}\text{Mg}(^{18}\text{O}, 2n2p)$ , E=69 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin using Gemini-II and Si-Ball detector arrays. $^{40}\text{Ar}$ ; deduced levels, J, $\pi$ , deformation, related features and lifetimes using DSA; calculated configuration using HFB method. Comparison with $^{36}\text{Ar}$ and $^{40}\text{Ca}$ systematics. JOUR PYLBB 686 18
$^{40}\text{K}$	2008GUZQ	NUCLEAR REACTIONS $^{39,41}\text{K}(n, \gamma)$ , E=10-64 keV; $^{55}\text{Mn}(n, \gamma)$ , E=20-40 keV; measured $E\gamma$ , $I\gamma$ , En, In using TOF; deduced $\sigma$ ; calculated $\sigma$ using SAMMY code with ENDF / B-VI and JENDL-3.2 resonance parameters; evaluated $\sigma$ , transmission data. ORELA facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P403
	2009BH09	NUCLEAR REACTIONS $^{40}\text{Ar}(p, n)$ , E=120, 160 MeV; measured E(n), I(n) by time-of-flight method using peak-shape fitting parameters from $^{13}\text{C}(p, n)^{13}\text{N}$ , E=120, 160 MeV reaction. $^{40}\text{K}$ ; deduced levels and B(GT). Comparison of B(GT) strengths from $^{40}\text{Ti}(\beta^+)$ . $^{40}\text{Ar}(\nu, e)^{40}\text{K}$ ; deduced capture cross section. JOUR PRVCA 80 055501
$^{40}\text{Ca}$	2009FU17	NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}$ , $^{40,42,48}\text{Ca}(^7\text{Li}, t\alpha)^{12}\text{C} / ^{16}\text{O} / ^{40}\text{Ca} / ^{42}\text{Ca} / ^{48}\text{Ca} / ^{44}\text{Ti} / ^{46}\text{Ti} / ^{52}\text{Ti}$ , E=26.0 MeV; measured particle-spectra, $t\alpha$ -coin, and $t\alpha(\theta)$ ; deduced relative ratios of reaction cross sections. $^{44,46,52}\text{Ti}$ ; deduced levels, J, $\pi$ , $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613
	2010D003	NUCLEAR REACTIONS $^9\text{Be}(^{37}\text{Ca}, \text{X})^{34}\text{Cl} / ^{31}\text{S}$ , E=195.7 MeV / nucleon; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced energies, J, $\pi$ , $T_{1/2}$ . $^{40}\text{Ca}$ fragmentation beams. JOUR NIMAE 613 218
	2010KR06	NUCLEAR REACTIONS $^{40,48}\text{Ca}(^6\text{Li}, ^6\text{Li})$ , ( $^6\text{Li}, ^6\text{Li}^*$ ), E=240 MeV; measured $\sigma$ , $\sigma(\theta)$ ; deduced optical model parameters B(E2) for first 2+ states, B(E3) for first 3- states, isoscalar giant-monopole resonance (ISGMR) strength, EWSR. DWBA analysis. Comparison with theoretical calculations using density-dependent double-folding (DDF) model with M3Y-NN effective interaction. JOUR PRVCA 81 044612
	2010YA05	NUCLEAR REACTIONS $^{40}\text{Ca}(\text{polarized } p, 2p)$ , E=392 MeV; measured $E_p$ , $I_p$ , $\sigma$ , recoil-momentum distributions, and analyzing powers using Grand Raiden spectrometer. $^{39}\text{K}$ ; deduced levels, strength distributions, centroid energies, widths, spectroscopic factors. $^{40}\text{Ca}$ ; deduced spectroscopic factors and strength distributions for the deeply bound orbitals. DWIA analysis. Comparison with predictions of Independent-Particle shell Model. JOUR PRVCA 81 044315

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**A=41**

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| $^{41}\text{S}$  | 2009RI12 | ATOMIC MASSES $^{40,41,42,43,44}\text{S}$ ; measured precise mass excesses using LEBIT Penning trap mass spectrometer. Comparison with other recent mass measurements. Systematics of $S(2n)$ values for $N=24-30$ , $Z=15-18$ nuclides. JOUR PRVCA 80 064321   |
|                  | 2010WA12 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{34}\text{S} / ^{35}\text{S} / ^{36}\text{S} / ^{37}\text{S} / ^{38}\text{S} / ^{39}\text{S} / ^{40}\text{S} / ^{41}\text{S}$ , $E=215$ MeV; measured yields. JOUR PRVCA 81 054305  |
| $^{41}\text{Cl}$ | 2010OD01 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , $E=215$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, $J$ , $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318 |

**A=42**

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| $^{42}\text{Si}$ | 2008AZZZ | NUCLEAR REACTIONS $^9\text{Be}(^{42}\text{Si}, ^{42}\text{Si}')$ , $E$ not given; measured $E_\gamma$ , $I_\gamma$ , reaction products; $^{42}\text{Si}$ ; deduced level energies, $J$ , $\pi$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez  |
|                  | 2009AOZZ | NUCLEAR REACTIONS $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , $E=345$ MeV / nucleon. $^{20,22}\text{C}$ , $^{29,30,31,32}\text{Ne}$ , $^{40,42}\text{Si}$ measured yields. Comparison with EPAX2 calculations. CONF Dub(Nucl Struct and Dynamics,09) Proc,P76   |
| $^{42}\text{S}$  | 2009RI12 | ATOMIC MASSES $^{40,41,42,43,44}\text{S}$ ; measured precise mass excesses using LEBIT Penning trap mass spectrometer. Comparison with other recent mass measurements. Systematics of $S(2n)$ values for $N=24-30$ , $Z=15-18$ nuclides. JOUR PRVCA 80 064321   |
| $^{42}\text{Cl}$ | 2010OD01 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{36}\text{S}, \text{X})^{36}\text{Cl} / ^{37}\text{Cl} / ^{38}\text{Cl} / ^{39}\text{Cl} / ^{40}\text{Cl} / ^{41}\text{Cl} / ^{42}\text{Cl}$ , $E=215$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin using PRISMA magnetic spectrometer and the CLARA $\gamma$ -ray detector array. $^{38}\text{Cl}$ ; deduced levels, $J$ , $\pi$ , and configurations. $^{34,36,38,40}\text{Cl}$ ; systematics of 5- and 7+ states. Comparison with shell model calculations. JOUR PRVCA 81 024318 |
| $^{42}\text{Ar}$ | 2008BEZH | NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced $g$ factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle   |
|                  | 2010ME05 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})^{42}\text{Ar} / ^{43}\text{Ar} / ^{44}\text{Ar} / ^{45}\text{Ar} / ^{46}\text{Ar}$ , $E=310$ MeV; measured $E_\gamma$ , $I_\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. $^{44,46}\text{Ar}$ ; deduced levels, $B(E2)$ . Comparison with shell-model calculations. JOUR NUPAB 834 69c   |
|                  | 2010ME07 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})^{42}\text{Ar} / ^{43}\text{Ar} / ^{44}\text{Ar} / ^{45}\text{Ar} / ^{46}\text{Ar}$ , $E=310$ MeV; measured $E_\gamma$ , $I_\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. $^{44,46}\text{Ar}$ ; deduced levels, $B(E2)$ . Comparison with shell-model calculations. JOUR PRVCA 82 024308   |

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**A=42 (continued)**

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| $^{42}\text{K}$  | 2008GUZQ | NUCLEAR REACTIONS $^{39,41}\text{K}(n, \gamma)$ , $E=10\text{-}64$ keV; $^{55}\text{Mn}(n, \gamma)$ , $E=20\text{-}40$ keV; measured $E\gamma$ , $I\gamma$ , $E_n$ , $I_n$ using TOF; deduced $\sigma$ ; calculated $\sigma$ using SAMMY code with ENDF / B-VI and JENDL-3.2 resonance parameters; evaluated $\sigma$ , transmission data. ORELA facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P403   |
| $^{42}\text{Ca}$ | 2009FU17 | NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}$ , $^{40,42,48}\text{Ca}(^7\text{Li}, t\alpha)^{12}\text{C} / ^{16}\text{O} / ^{40}\text{Ca} / ^{42}\text{Ca} / ^{48}\text{Ca} / ^{44}\text{Ti} / ^{46}\text{Ti} / ^{52}\text{Ti}$ , $E=26.0$ MeV; measured particle-spectra, $t\alpha$ -coin, and $t\alpha(\theta)$ ; deduced relative ratios of reaction cross sections. $^{44,46,52}\text{Ti}$ ; deduced levels, $J$ , $\pi$ , $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613 |
| $^{42}\text{Sc}$ | 2010FUZZ | NUCLEAR REACTIONS $^9\text{Be}$ , $^{23}\text{Na}$ , $^{25}\text{Mg}$ , $^{42}\text{Ca}$ , $^{46}\text{Ti}$ , $^{50}\text{Cr}$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{118}\text{Sn}(^3\text{He}, t)$ , $E=140$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; deduced $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39   |

**A=43**

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| $^{43}\text{S}$  | 2009RI12 | ATOMIC MASSES $^{40,41,42,43,44}\text{S}$ ; measured precise mass excesses using LEBIT Penning trap mass spectrometer. Comparison with other recent mass measurements. Systematics of $S(2n)$ values for $N=24\text{-}30$ , $Z=15\text{-}18$ nuclides. JOUR PRVCA 80 064321  |
| $^{43}\text{Ar}$ | 2010ME05 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, X)^{42}\text{Ar} / ^{43}\text{Ar} / ^{44}\text{Ar} / ^{45}\text{Ar} / ^{46}\text{Ar}$ , $E=310$ MeV; measured $E\gamma$ , $I\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. $^{44,46}\text{Ar}$ ; deduced levels, $B(E2)$ . Comparison with shell-model calculations. JOUR NUPAB 834 69c   |
|                  | 2010ME07 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, X)^{42}\text{Ar} / ^{43}\text{Ar} / ^{44}\text{Ar} / ^{45}\text{Ar} / ^{46}\text{Ar}$ , $E=310$ MeV; measured $E\gamma$ , $I\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. $^{44,46}\text{Ar}$ ; deduced levels, $B(E2)$ . Comparison with shell-model calculations. JOUR PRVCA 82 024308 |
| $^{43}\text{V}$  | 2009MI29 | RADIOACTIVITY $^{45}\text{Fe}(2p)$ , $(\beta^+)$ [from $\text{Ni}(^{58}\text{Ni}, X)$ , $E=161$ MeV / nucleon]; $^{43}\text{Cr}(\beta^+)$ ; measured p-spectra; deduced $T_{1/2}$ , branching ratios. JOUR ZAANE 42 431  |
| $^{43}\text{Cr}$ | 2009MI29 | RADIOACTIVITY $^{45}\text{Fe}(2p)$ , $(\beta^+)$ [from $\text{Ni}(^{58}\text{Ni}, X)$ , $E=161$ MeV / nucleon]; $^{43}\text{Cr}(\beta^+)$ ; measured p-spectra; deduced $T_{1/2}$ , branching ratios. JOUR ZAANE 42 431  |

**A=44**

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| $^{44}\text{S}$ | 2009RI12 | ATOMIC MASSES $^{40,41,42,43,44}\text{S}$ ; measured precise mass excesses using LEBIT Penning trap mass spectrometer. Comparison with other recent mass measurements. Systematics of $S(2n)$ values for $N=24\text{-}30$ , $Z=15\text{-}18$ nuclides. JOUR PRVCA 80 064321 |
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**A=44 (continued)**

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|                  | 2010F004 | NUCLEAR REACTIONS Be( <sup>48</sup> Ca, X) <sup>44</sup> S, E=60 MeV / nucleon; measured electron spectra, E $\gamma$ , I $\gamma$ . <sup>44</sup> S; deduced J, $\pi$ , level scheme, B(E2), monopole strength, deformation parameter. Comparison with shell model calculations. JOUR PRLTA 105 102501   |
| <sup>44</sup> Cl | 2010DE11 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>48</sup> Ca, X) <sup>44</sup> Cl, E=60 MeV / nucleon; measured $\beta$ -NMR resonance Larmor frequency; deduced g factor, levels, J, $\pi$ , configurations. JOUR PRVCA 81 034308   |
|                  | 2010DE11 | NUCLEAR MOMENTS <sup>44</sup> Cl; measured g factor by Larmor frequency using $\beta$ -NMR method. Comparison with systematics of <sup>39,41,43,45</sup> Cl, <sup>46</sup> K and with shell-model calculations. JOUR PRVCA 81 034308  |
| <sup>44</sup> Ar | 2010ME05 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>42</sup> Ar / <sup>43</sup> Ar / <sup>44</sup> Ar / <sup>45</sup> Ar / <sup>46</sup> Ar, E=310 MeV; measured E $\gamma$ , I $\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. <sup>44,46</sup> Ar; deduced levels, B(E2). Comparison with shell-model calculations. JOUR NUPAB 834 69c   |
|                  | 2010ME07 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>42</sup> Ar / <sup>43</sup> Ar / <sup>44</sup> Ar / <sup>45</sup> Ar / <sup>46</sup> Ar, E=310 MeV; measured E $\gamma$ , I $\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. <sup>44,46</sup> Ar; deduced levels, B(E2). Comparison with shell-model calculations. JOUR PRVCA 82 024308   |
| <sup>44</sup> Sc | 2010GA03 | NUCLEAR REACTIONS Ti(d, X) <sup>47</sup> V / <sup>48</sup> V / <sup>44</sup> Sc / <sup>46</sup> Sc / <sup>47</sup> Sc / <sup>48</sup> Sc / <sup>51</sup> Ti, E=3-9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , <sup>47</sup> V / <sup>46</sup> Sc EOB ratio. JOUR NIMBE 268 1392   |
| <sup>44</sup> Ti | 2009FU17 | NUCLEAR REACTIONS <sup>12</sup> C, <sup>16</sup> O, <sup>40,42,48</sup> Ca( <sup>7</sup> Li, t $\alpha$ ) <sup>12</sup> C / <sup>16</sup> O / <sup>40</sup> Ca / <sup>42</sup> Ca / <sup>48</sup> Ca / <sup>44</sup> Ti / <sup>46</sup> Ti / <sup>52</sup> Ti, E=26.0 MeV; measured particle-spectra, t $\alpha$ -coin, and t $\alpha$ ( $\theta$ ); deduced relative ratios of reaction cross sections. <sup>44,46,52</sup> Ti; deduced levels, J, $\pi$ , $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613 |

**A=45**

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| <sup>45</sup> Ar | 2010LE03 | NUCLEAR REACTIONS <sup>1</sup> H( <sup>34</sup> Ar, d), ( <sup>36</sup> Ar, d), ( <sup>46</sup> Ar, d), E=33 MeV / nucleon; measured E $\delta$ , I $\delta$ ; <sup>34,36,46</sup> Ar; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701  |
|                  | 2010ME05 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>42</sup> Ar / <sup>43</sup> Ar / <sup>44</sup> Ar / <sup>45</sup> Ar / <sup>46</sup> Ar, E=310 MeV; measured E $\gamma$ , I $\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. <sup>44,46</sup> Ar; deduced levels, B(E2). Comparison with shell-model calculations. JOUR NUPAB 834 69c   |
|                  | 2010ME07 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>42</sup> Ar / <sup>43</sup> Ar / <sup>44</sup> Ar / <sup>45</sup> Ar / <sup>46</sup> Ar, E=310 MeV; measured E $\gamma$ , I $\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. <sup>44,46</sup> Ar; deduced levels, B(E2). Comparison with shell-model calculations. JOUR PRVCA 82 024308 |

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**A=45 (continued)**

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| <sup>45</sup> Ca | 2010QA01 | NUCLEAR REACTIONS Ti(p, X) <sup>45</sup> Ca / <sup>49</sup> V, E<200 MeV; Pb(p, X) <sup>204</sup> Tl, E<90 MeV; measured E <sub>e</sub> , I <sub>e</sub> , x-rays, E <sub>γ</sub> , I <sub>γ</sub> ; deduced σ. Radiochemical techniques, comparison with ALICE-IPPE and TALYS codes. JOUR RAACA 98 447  |
| <sup>45</sup> Cr | 2008AZZZ | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>37</sup> Ca, n), E=60 MeV / nucleon; measured E <sub>γ</sub> , I <sub>γ</sub> , reaction products; <sup>36</sup> Ca; deduced level energies, J, π. Comparison with <sup>36</sup> S. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez  |
| <sup>45</sup> Mn | 2009MI29 | RADIOACTIVITY <sup>45</sup> Fe(2p), (β <sup>+</sup> ) [from Ni( <sup>58</sup> Ni, X), E=161 MeV / nucleon]; <sup>43</sup> Cr(β <sup>+</sup> ); measured p-spectra; deduced T <sub>1/2</sub> , branching ratios. JOUR ZAANE 42 431  |
| <sup>45</sup> Fe | 2008PFZY | RADIOACTIVITY <sup>45</sup> Fe[from Ni( <sup>58</sup> Ni, x), E=161 MeV / nucleon]; measured E <sub>p</sub> , I <sub>p</sub> (θ), pp-coin, pβ-coin, pp angular correlations. <sup>45</sup> Fe deduced 2p decay, pβ decay, 2pβ decay, 3pβ decay, partial T <sub>1/2</sub> . Compared to other data and calculations. Results on CD only. CONF E.Lansing (NS2008),P69,Pfutzner |
|                  | 2009MI29 | NUCLEAR REACTIONS Ni( <sup>58</sup> Ni, X) <sup>45</sup> Fe, E=161 MeV / nucleon; measured p-spectra, α-spectra, (recoil)p-coin, recoil energy and angular correlation in a kinematically complete experiment. <sup>45</sup> Fe; deduced T <sub>1/2</sub> , branching ratios. Comparison with three-body model. TOF with Optical Time Projection Chamber. JOUR ZAANE 42 431  |
|                  | 2009MI29 | RADIOACTIVITY <sup>45</sup> Fe(2p), (β <sup>+</sup> ) [from Ni( <sup>58</sup> Ni, X), E=161 MeV / nucleon]; <sup>43</sup> Cr(β <sup>+</sup> ); measured p-spectra; deduced T <sub>1/2</sub> , branching ratios. JOUR ZAANE 42 431  |

**A=46**

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| <sup>46</sup> Ar | 2008FOZV | NUCLEAR REACTIONS <sup>238</sup> U( <sup>48</sup> Ca, X) <sup>51</sup> Ca / <sup>46</sup> Ar, E=330 MeV; measured reaction products, E <sub>γ</sub> , I <sub>γ</sub> , γ-γ-coin.; deduced energy levels, J, π, yrast structures. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P283,Fornal  |
|                  | 2009ME23 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>46</sup> Ar / <sup>46</sup> Ca / <sup>50</sup> Ca, E=310 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> using CLARA and PRISMA spectrometers and the differential Recoil Distance Doppler Shift method. <sup>46</sup> Ar, <sup>46,50</sup> Ca; deduced isomer T <sub>1/2</sub> , transition energies. Comparison with simulations. JOUR ZAANE 42 387 |
|                  | 2010LE03 | NUCLEAR REACTIONS <sup>1</sup> H( <sup>34</sup> Ar, d), ( <sup>36</sup> Ar, d), ( <sup>46</sup> Ar, d), E=33 MeV / nucleon; measured E <sub>δ</sub> , I <sub>δ</sub> ; <sup>34,36,46</sup> Ar; deduced neutron ground state spectroscopic factors. Comparison with shell model calculations. JOUR PRLTA 104 112701   |
|                  | 2010ME05 | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>48</sup> Ca, X) <sup>42</sup> Ar / <sup>43</sup> Ar / <sup>44</sup> Ar / <sup>45</sup> Ar / <sup>46</sup> Ar, E=310 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , (recoils)γ-coin, and half-lives by differential RDDS method. CLARA-PRISMA system. <sup>44,46</sup> Ar; deduced levels, B(E2). Comparison with shell-model calculations. JOUR NUPAB 834 69c           |



KEYNUMBERS AND KEYWORDS

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**A=46 (continued)**

	2010ME07	NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})^{42}\text{Ar} / ^{43}\text{Ar} / ^{44}\text{Ar} / ^{45}\text{Ar} / ^{46}\text{Ar}$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ , (recoils) $\gamma$ -coin, and half-lives by differential RDDS method. CLARA-PRISMA system. $^{44,46}\text{Ar}$ ; deduced levels, B(E2). Comparison with shell-model calculations. JOUR PRVCA 82 024308
$^{46}\text{K}$	2009MA75	NUCLEAR MOMENTS $^{46}\text{K}$ ; measured hfs. Testing of new laser spectroscopy technique. JOUR ZAANE 42 503
$^{46}\text{Ca}$	2009ME23	NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})^{46}\text{Ar} / ^{46}\text{Ca} / ^{50}\text{Ca}$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ using CLARA and PRISMA spectrometers and the differential Recoil Distance Doppler Shift method. $^{46}\text{Ar}$ , $^{46,50}\text{Ca}$ ; deduced isomer $T_{1/2}$ , transition energies. Comparison with simulations. JOUR ZAANE 42 387
$^{46}\text{Sc}$	2010DI02	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{94}\text{Zr}$ , $^{64}\text{Zn}$ , $^{45}\text{Sc}$ , $^{139}\text{La}(n, \gamma)$ , E=thermal; measured $E\gamma$ , $I\gamma$ ; deduced shape of neutron flux, covariances. JOUR ARISE 68 592
	2010GA03	NUCLEAR REACTIONS $\text{Ti}(d, \text{X})^{47}\text{V} / ^{48}\text{V} / ^{44}\text{Sc} / ^{46}\text{Sc} / ^{47}\text{Sc} / ^{48}\text{Sc} / ^{51}\text{Ti}$ , E=3-9 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $^{47}\text{V} / ^{46}\text{Sc}$ EOB ratio. JOUR NIMBE 268 1392
$^{46}\text{Ti}$	2009FA15	RADIOACTIVITY $^{46}\text{V}(\text{EC})$ ; deduced Q-value from reaction data. JOUR ZAANE 42 339
	2009FU17	NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}$ , $^{40,42,48}\text{Ca}(^7\text{Li}, t\alpha)^{12}\text{C} / ^{16}\text{O} / ^{40}\text{Ca} / ^{42}\text{Ca} / ^{48}\text{Ca} / ^{44}\text{Ti} / ^{46}\text{Ti} / ^{52}\text{Ti}$ , E=26.0 MeV; measured particle-spectra, $t\alpha$ -coin, and $t\alpha(\theta)$ ; deduced relative ratios of reaction cross sections. $^{44,46,52}\text{Ti}$ ; deduced levels, J, $\pi$ , $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613
$^{46}\text{V}$	2008MAZH	NUCLEAR REACTIONS $^3\text{He}(^{44}\text{Ti}, p)$ , E=242 MeV; measured $E_p$ , $I_p$ ; deduced $d\sigma(0^+) / d\sigma(1^+)$ . Results on CD only. CONF E.Lansing (NS2008),P6,Macchiavelli
	2009FA15	NUCLEAR REACTIONS $^{26}\text{Mg}$ , $^{46,47,48}\text{Ti}(^3\text{He}, t)$ , E=27 MeV; measured triton spectra; deduced Q-value. $^{46,48}\text{Ti}(d, p)$ , E=14 MeV; measured $E_p$ , $I_p$ ; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339
	2009FA15	RADIOACTIVITY $^{46}\text{V}(\text{EC})$ ; deduced Q-value from reaction data. JOUR ZAANE 42 339
	2010FUZZ	NUCLEAR REACTIONS $^9\text{Be}$ , $^{23}\text{Na}$ , $^{25}\text{Mg}$ , $^{42}\text{Ca}$ , $^{46}\text{Ti}$ , $^{50}\text{Cr}$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{118}\text{Sn}(^3\text{He}, t)$ , E=140 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; deduced $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39
$^{46}\text{Cr}$	2008WAZP	RADIOACTIVITY $^{46}\text{Cr}$ ; measured $\beta$ -delayed $E\gamma$ , $I\gamma(t)$ ; deduced $^{46}\text{Cr}$ , $^{46}\text{V} T_{1/2}$ . REPT CNS-REP-61,P25,Wakabayashi
	2009WAZU	RADIOACTIVITY $^{46}\text{Cr}$ [from $^{36}\text{Ar}+^{12}\text{C}$ fusion]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , ToF. Further analysis in progress. REPT RIKEN 2008 Annual,P19,Wakabayashi

KEYNUMBERS AND KEYWORDS

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**A=47**

- <sup>47</sup>Ca      2009TOZU      NUCLEAR REACTIONS <sup>48</sup>Ca( $\gamma$ , n), E=9.5-15.3 MeV; measured En, In using polarized beams; deduced  $\sigma$ . Results to be analyzed. REPT TUNL-XLVIII,P93,Tompkins
- <sup>47</sup>Sc      2010GA03      NUCLEAR REACTIONS Ti(d, X)<sup>47</sup>V / <sup>48</sup>V / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc / <sup>51</sup>Ti, E=3-9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , <sup>47</sup>V / <sup>46</sup>Sc EOB ratio. JOUR NIMBE 268 1392
- <sup>47</sup>Ti      2009FA15      NUCLEAR REACTIONS <sup>26</sup>Mg, <sup>46,47,48</sup>Ti(<sup>3</sup>He, t), E=27 MeV; measured triton spectra; deduced Q-value. <sup>46,48</sup>Ti(d, p), E=14 MeV; measured Ep, Ip; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339
- <sup>47</sup>V      2009FA15      NUCLEAR REACTIONS <sup>26</sup>Mg, <sup>46,47,48</sup>Ti(<sup>3</sup>He, t), E=27 MeV; measured triton spectra; deduced Q-value. <sup>46,48</sup>Ti(d, p), E=14 MeV; measured Ep, Ip; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339
- 2010GA03      NUCLEAR REACTIONS Ti(d, X)<sup>47</sup>V / <sup>48</sup>V / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc / <sup>51</sup>Ti, E=3-9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , <sup>47</sup>V / <sup>46</sup>Sc EOB ratio. JOUR NIMBE 268 1392
- 2010PA18      NUCLEAR REACTIONS <sup>12</sup>C(<sup>20</sup>Ne, X), E=145, 160 MeV; <sup>27</sup>Al(<sup>20</sup>Ne, X), E=160 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>32</sup>S, <sup>47</sup>V; deduced highest spin and high energy excitations from the shapes of giant dipole resonances (GDR), strength functions and parameters using rotating liquid drop model (RLDM) and thermal shape fluctuation model (TSFM). Calculated liquid drop model free energy surfaces, and equilibrium shapes as a function of quadrupole deformation parameters and spin. Possible connection to molecular structure of <sup>16</sup>O+<sup>16</sup>O in the <sup>32</sup>S superdeformed band. JOUR PRVCA 81 061302

**A=48**

- <sup>48</sup>Ca      2009DA25      RADIOACTIVITY <sup>48</sup>Ca, <sup>82</sup>Se, <sup>96</sup>Zr, <sup>100</sup>Mo, <sup>116</sup>Cd, <sup>130</sup>Te, <sup>150</sup>Nd(2 $\beta$ ); measured T<sub>1/2</sub> for zero / two-neutrino 2 $\beta$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c
- 2009FU17      NUCLEAR REACTIONS <sup>12</sup>C, <sup>16</sup>O, <sup>40,42,48</sup>Ca(<sup>7</sup>Li, t $\alpha$ )<sup>12</sup>C / <sup>16</sup>O / <sup>40</sup>Ca / <sup>42</sup>Ca / <sup>48</sup>Ca / <sup>44</sup>Ti / <sup>46</sup>Ti / <sup>52</sup>Ti, E=26.0 MeV; measured particle-spectra, t $\alpha$ -coin, and t $\alpha$ ( $\theta$ ); deduced relative ratios of reaction cross sections. <sup>44,46,52</sup>Ti; deduced levels, J,  $\pi$ ,  $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613
- 2010KR06      NUCLEAR REACTIONS <sup>40,48</sup>Ca(<sup>6</sup>Li, <sup>6</sup>Li), (<sup>6</sup>Li, <sup>6</sup>Li'), E=240 MeV; measured  $\sigma$ ,  $\sigma$ ( $\theta$ ); deduced optical model parameters B(E2) for first 2+ states, B(E3) for first 3- states, isoscalar giant-monopole resonance (ISGMR) strength, EWSR. DWBA analysis. Comparison with theoretical calculations using density-dependent double-folding (DDF) model with M3Y-NN effective interaction. JOUR PRVCA 81 044612
- 2010SI06      RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te(2 $\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270
- <sup>48</sup>Sc      2010GA03      NUCLEAR REACTIONS Ti(d, X)<sup>47</sup>V / <sup>48</sup>V / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc / <sup>51</sup>Ti, E=3-9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , <sup>47</sup>V / <sup>46</sup>Sc EOB ratio. JOUR NIMBE 268 1392

## A=48 (continued)

- <sup>48</sup>Ti      2009SC28      NUCLEAR REACTIONS Ti(<sup>20</sup>Na, <sup>20</sup>Na'), (<sup>21</sup>Na, <sup>21</sup>Na'), E=1.7 MeV / nucleon; <sup>20,21</sup>Na, <sup>48</sup>Ti; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin, angular correlations and  $\gamma$ -ray yield; deduced B(E2), levels, J,  $\pi$ , mixing ratios, transition matrix elements. Tigress and Bambino arrays at TRIUMF-ISAC facility. GOSIA analysis of Coulomb excitation data. Comparisons with shell-model calculations using the USD, USDB and p-sd effective interactions employing OXBASH shell-model code. JOUR ZAANE 42 477
- 2010SI06      RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te( $2\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270
- <sup>48</sup>V      20080CZZ      NUCLEAR REACTIONS <sup>27</sup>Al(d, x)<sup>24</sup>Na, <sup>51</sup>V(d, 4n), Fe(d, x)<sup>54</sup>Mn, Fe(d, x)<sup>56</sup>Co, Ni(d, x)<sup>57</sup>Co, Cu(d, x)<sup>63</sup>Zn, Ta(d, x)<sup>180</sup>Ta, W(d, x)<sup>182</sup>Re, <sup>197</sup>Au(d, x)<sup>194</sup>Au, E=25, 35, 41, 50 MeV; Cr(d, x)<sup>48</sup>V, Cr(d, x)<sup>52</sup>Mn, <sup>55</sup>Mn(d, x)<sup>54</sup>Mn, Ni(d, x)<sup>56</sup>Co, E=39.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ; calculated  $\sigma$  using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011
- 2008SEZT      NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, p $\alpha$ ), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, p $\alpha$ ), <sup>181</sup>Ta(n,  $\alpha$ ), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n,  $\alpha$ ), E=13.8-20.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559
- 2009FA15      NUCLEAR REACTIONS <sup>26</sup>Mg, <sup>46,47,48</sup>Ti(<sup>3</sup>He, t), E=27 MeV; measured triton spectra; deduced Q-value. <sup>46,48</sup>Ti(d, p), E=14 MeV; measured Ep, Ip; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339
- 2010GA03      NUCLEAR REACTIONS Ti(d, X)<sup>47</sup>V / <sup>48</sup>V / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc / <sup>51</sup>Ti, E=3-9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , <sup>47</sup>V / <sup>46</sup>Sc EOB ratio. JOUR NIMBE 268 1392
- 2010TA03      NUCLEAR REACTIONS <sup>167</sup>Er, <sup>168</sup>Er(p, n), <sup>167</sup>Er(p, n), <sup>166</sup>Er(p, 2n), Ti(p, X)<sup>48</sup>V, E<15 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II, TALYS nuclear reaction model codes. JOUR ARISE 68 250
- 2011TA02      NUCLEAR REACTIONS <sup>27</sup>Al(d, X)<sup>22</sup>Na / <sup>24</sup>Na, Ti(d, X)<sup>48</sup>V, In(d, X)<sup>113</sup>Sn / <sup>111</sup>In / <sup>113</sup>In / <sup>114</sup>In / / <sup>115</sup>In / <sup>116</sup>In / <sup>111</sup>Cd / <sup>115</sup>Cd, E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick target yields,  $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26

KEYNUMBERS AND KEYWORDS

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**A=49**

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| <sup>49</sup> K  | 2010BR14 | NUCLEAR REACTIONS <sup>238</sup> U( <sup>48</sup> Ca, X), E=330 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, and half-lives by RDDS Plunger method using PRISMA-CLARA spectrometer and Gammasphere array. <sup>49</sup> K; deduced levels, J, $\pi$ . Systematics of <sup>39,41,43,45,47,49</sup> K nuclei. Comparison with shell-model calculations. JOUR PRVCA 82 034319  |
| <sup>49</sup> Ca | 2008ZAZX | NUCLEAR REACTIONS <sup>48</sup> Ca(n, $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P1263  |
| <sup>49</sup> Ti | 2009FA15 | NUCLEAR REACTIONS <sup>26</sup> Mg, <sup>46,47,48</sup> Ti( <sup>3</sup> He, t), E=27 MeV; measured triton spectra; deduced Q-value. <sup>46,48</sup> Ti(d, p), E=14 MeV; measured Ep, Ip; deduced neutron separation energy. Comparison with other data. JOUR ZAANE 42 339  |
|                  | 2009NI17 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>46</sup> Ar, xn) <sup>49</sup> Ti / <sup>50</sup> Ti / <sup>51</sup> Ti, E=2-8 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin in-beam using GRAPE HPGe detector array with Doppler shift correction. <sup>49</sup> Ti, <sup>50</sup> Ti, <sup>51</sup> Ti; deduced high-spin yrast levels, J, $\pi$ , configurations. Comparison with shell model ANTOINE. Secondary radioactive beam. JOUR ZAANE 42 471   |
| <sup>49</sup> V  | 2010QA01 | NUCLEAR REACTIONS Ti(p, X) <sup>45</sup> Ca / <sup>49</sup> V, E<200 MeV; Pb(p, X) <sup>204</sup> Tl, E<90 MeV; measured Ee, Ie, x-rays, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Radiochemical techniques, comparison with ALICE-IPPE and TALYS codes. JOUR RAACA 98 447  |
| <sup>49</sup> Cr | 2008OCZZ | NUCLEAR REACTIONS <sup>27</sup> Al(d, x) <sup>24</sup> Na, <sup>51</sup> V(d, 4n), Fe(d, x) <sup>54</sup> Mn, Fe(d, x) <sup>56</sup> Co, Ni(d, x) <sup>57</sup> Co, Cu(d, x) <sup>63</sup> Zn, Ta(d, x) <sup>180</sup> Ta, W(d, x) <sup>182</sup> Re, <sup>197</sup> Au(d, x) <sup>194</sup> Au, E=25, 35, 41, 50 MeV; Cr(d, x) <sup>48</sup> V, Cr(d, x) <sup>52</sup> Mn, <sup>55</sup> Mn(d, x) <sup>54</sup> Mn, Ni(d, x) <sup>56</sup> Co, E=39.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011 |

**A=50**

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| <sup>50</sup> K  | 2008CRZZ | RADIOACTIVITY <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -co in, E $\beta$ , I $\beta$ , $\beta$ -delayed $\gamma$ decay. <sup>50</sup> K deduced isomeric transition. <sup>50</sup> K, <sup>53</sup> Sc deduced levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P90,Crawford   |
|                  | 2010DA06 | NUCLEAR REACTIONS Ni( <sup>86</sup> Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and $\gamma(t)$ . Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup> K, <sup>60</sup> V, <sup>62,64</sup> Mn, <sup>65,67</sup> Fe, <sup>68,70</sup> Co, <sup>75</sup> Cu, <sup>78</sup> Zn, <sup>78</sup> Ga; deduced isomers, half-lives, J, $\pi$ , multipolarities. <sup>69,71,73</sup> Cu; deduced B(M1), B(E2) values. <sup>75</sup> Cu; deduced levels, J, $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup> Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-states. JOUR PRVCA 81 034304 |
| <sup>50</sup> Ca | 2008CRZZ | RADIOACTIVITY <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -co in, E $\beta$ , I $\beta$ , $\beta$ -delayed $\gamma$ decay. <sup>50</sup> K deduced isomeric transition. <sup>50</sup> K, <sup>53</sup> Sc deduced levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P90,Crawford   |

KEYNUMBERS AND KEYWORDS

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**A=50 (continued)**

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|                  | 2009ME23 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})^{46}\text{Ar} / ^{46}\text{Ca} / ^{50}\text{Ca}$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ using CLARA and PRISMA spectrometers and the differential Recoil Distance Doppler Shift method. $^{46}\text{Ar}$ , $^{46,50}\text{Ca}$ ; deduced isomer $T_{1/2}$ , transition energies. Comparison with simulations. JOUR ZAANE 42 387   |
| $^{50}\text{Ti}$ | 2009NI17 | NUCLEAR REACTIONS $^9\text{Be}(^{46}\text{Ar}, \text{xn})^{49}\text{Ti} / ^{50}\text{Ti} / ^{51}\text{Ti}$ , E=2-8 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin in-beam using GRAPE HPGe detector array with Doppler shift correction. $^{49}\text{Ti}$ , $^{50}\text{Ti}$ , $^{51}\text{Ti}$ ; deduced high-spin yrast levels, J, $\pi$ , configurations. Comparison with shell model ANTOINE. Secondary radioactive beam. JOUR ZAANE 42 471 |
| $^{50}\text{Mn}$ | 2010CH15 | NUCLEAR REACTIONS $^{50,52}\text{Cr}(p, n)$ , E=14 MeV; $^{50}\text{Cr}(d, n)$ , E=13 MeV; $^{55}\text{Mn}(p, \text{xnp})^{53}\text{Mn} / ^{54}\text{Mn}$ , E=33 MeV; $^{56}\text{Fe}(d, 2p)$ , E=25 MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346  |
|                  | 2010FUZZ | NUCLEAR REACTIONS $^9\text{Be}$ , $^{23}\text{Na}$ , $^{25}\text{Mg}$ , $^{42}\text{Ca}$ , $^{46}\text{Ti}$ , $^{50}\text{Cr}$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{118}\text{Sn}(^3\text{He}, t)$ , E=140 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; deduced $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.1, P39   |

**A=51**

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|------------------|----------|---|
| $^{51}\text{Ca}$ | 2008FOZV | NUCLEAR REACTIONS $^{238}\text{U}(^{48}\text{Ca}, \text{X})^{51}\text{Ca} / ^{46}\text{Ar}$ , E=330 MeV; measured reaction products, $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced energy levels, J, $\pi$ , yrast structures. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P283,Fornal   |
| $^{51}\text{Ti}$ | 2009NI17 | NUCLEAR REACTIONS $^9\text{Be}(^{46}\text{Ar}, \text{xn})^{49}\text{Ti} / ^{50}\text{Ti} / ^{51}\text{Ti}$ , E=2-8 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin in-beam using GRAPE HPGe detector array with Doppler shift correction. $^{49}\text{Ti}$ , $^{50}\text{Ti}$ , $^{51}\text{Ti}$ ; deduced high-spin yrast levels, J, $\pi$ , configurations. Comparison with shell model ANTOINE. Secondary radioactive beam. JOUR ZAANE 42 471 |
|                  | 2010GA03 | NUCLEAR REACTIONS $\text{Ti}(d, \text{X})^{47}\text{V} / ^{48}\text{V} / ^{44}\text{Sc} / ^{46}\text{Sc} / ^{47}\text{Sc} / ^{48}\text{Sc} / ^{51}\text{Ti}$ , E=3-9 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $^{47}\text{V} / ^{46}\text{Sc}$ EOB ratio. JOUR NIMBE 268 1392   |
| $^{51}\text{V}$  | 2010M001 | RADIOACTIVITY $^{51}\text{Cr}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -coin.; deduced $\gamma$ -ray emission probabilities per decay. Comparison with Monte-Carlo code. JOUR ARISE 68 596   |
|                  | 2010MU09 | NUCLEAR REACTIONS $^9\text{Be}$ , $^{51}\text{V}(^8\text{Li}, ^8\text{Li})$ , ( $^8\text{Li}$ , X), E=18.5, 19.6 MeV; measured $\sigma$ , $\sigma(\theta)$ ; calculated $\sigma(\theta)$ using Sao Paulo potential and WS form factors; deduced optical model parameters. Comparison with other reactions. Secondary radioactive beam. JOUR ZAANE 45 23   |
| $^{51}\text{Cr}$ | 2010AL17 | NUCLEAR REACTIONS $^{55}\text{Mn}(p, n)^{55}\text{Fe}$ , E<18 MeV; $^{55}\text{Mn}(p, \text{X})^{54}\text{Mn} / ^{51}\text{Cr}$ , E<45 MeV; measured reaction products, x-rays, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with nuclear model codes ALICE-IPPE, EMPIRE and TALYS. JOUR ARISE 68 2393   |

KEYNUMBERS AND KEYWORDS

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**A=51 (continued)**

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|------------------|----------|---|
|                  | 2010M001 | RADIOACTIVITY $^{51}\text{Cr}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -coin.; deduced $\gamma$ -ray emission probabilities per decay. Comparison with Monte-Carlo code. JOUR ARISE 68 596   |
| $^{51}\text{Mn}$ | 2010CH15 | NUCLEAR REACTIONS $^{50,52}\text{Cr}(\text{p}, \text{n})$ , $E=14$ MeV; $^{50}\text{Cr}(\text{d}, \text{n})$ , $E=13$ MeV; $^{55}\text{Mn}(\text{p}, \text{xnp})^{53}\text{Mn}$ / $^{54}\text{Mn}$ , $E=33$ MeV; $^{56}\text{Fe}(\text{d}, 2\text{p})$ , $E=25$ MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346 |

**A=52**

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| $^{52}\text{Ca}$ | 2010CR02 | NUCLEAR REACTIONS $\text{Be}(^{76}\text{Ge}, \text{X})^{52}\text{Ca}$ / $^{53}\text{Ca}$ / $^{54}\text{Ca}$ / $^{53}\text{Sc}$ / $^{54}\text{Sc}$ / $^{55}\text{Sc}$ / $^{56}\text{Sc}$ / $^{55}\text{Ti}$ / $^{56}\text{Ti}$ / $^{57}\text{Ti}$ / $^{58}\text{Ti}$ / $^{57}\text{V}$ / $^{58}\text{V}$ / $^{59}\text{V}$ / $^{60}\text{V}$ / , $E=130$ MeV / nucleon; measured yields. JOUR PRVCA 82 014311   |
| $^{52}\text{Ti}$ | 2009FU17 | NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}$ , $^{40,42,48}\text{Ca}(^7\text{Li}, \text{t}\alpha)^{12}\text{C}$ / $^{16}\text{O}$ / $^{40}\text{Ca}$ / $^{42}\text{Ca}$ / $^{48}\text{Ca}$ / $^{44}\text{Ti}$ / $^{46}\text{Ti}$ / $^{52}\text{Ti}$ , $E=26.0$ MeV; measured particle-spectra, $\text{t}\alpha$ -coin, and $\text{t}\alpha(\theta)$ ; deduced relative ratios of reaction cross sections. $^{44,46,52}\text{Ti}$ ; deduced levels, $J$ , $\pi$ , $\alpha$ -cluster states. Comparison with other experimental data. JOUR PRVCA 80 064613  |
| $^{52}\text{Mn}$ | 20080CZZ | NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{x})^{24}\text{Na}$ , $^{51}\text{V}(\text{d}, 4\text{n})$ , $\text{Fe}(\text{d}, \text{x})^{54}\text{Mn}$ , $\text{Fe}(\text{d}, \text{x})^{56}\text{Co}$ , $\text{Ni}(\text{d}, \text{x})^{57}\text{Co}$ , $\text{Cu}(\text{d}, \text{x})^{63}\text{Zn}$ , $\text{Ta}(\text{d}, \text{x})^{180}\text{Ta}$ , $\text{W}(\text{d}, \text{x})^{182}\text{Re}$ , $^{197}\text{Au}(\text{d}, \text{x})^{194}\text{Au}$ , $E=25, 35, 41, 50$ MeV; $\text{Cr}(\text{d}, \text{x})^{48}\text{V}$ , $\text{Cr}(\text{d}, \text{x})^{52}\text{Mn}$ , $^{55}\text{Mn}(\text{d}, \text{x})^{54}\text{Mn}$ , $\text{Ni}(\text{d}, \text{x})^{56}\text{Co}$ , $E=39.5$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011 |
|                  | 2010CH15 | NUCLEAR REACTIONS $^{50,52}\text{Cr}(\text{p}, \text{n})$ , $E=14$ MeV; $^{50}\text{Cr}(\text{d}, \text{n})$ , $E=13$ MeV; $^{55}\text{Mn}(\text{p}, \text{xnp})^{53}\text{Mn}$ / $^{54}\text{Mn}$ , $E=33$ MeV; $^{56}\text{Fe}(\text{d}, 2\text{p})$ , $E=25$ MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346  |
|                  | 2010NG01 | NUCLEAR REACTIONS $\text{Fe}(\gamma, \text{npX})^{52}\text{Mn}$ , $E=0.05$ - $2.5$ GeV; measured $E\gamma$ , $I\gamma$ ; deduced isomeric yield ratios, decay scheme. JOUR JRNCD 283 683   |
| $^{52}\text{Fe}$ | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |

## A=53

<sup>53</sup> Ca	2008CRZZ	RADIOACTIVITY <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -co in, E $\beta$ , I $\beta$ , $\beta$ -delayed $\gamma$ decay. <sup>50</sup> K deduced isomeric transition. <sup>50</sup> K, <sup>53</sup> Sc deduced levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P90,Crawford
	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-n$ ); deduced % $\beta^-n$ . JOUR PRVCA 82 014311
	2010CR02	NUCLEAR REACTIONS Be( <sup>76</sup> Ge, X) <sup>52</sup> Ca / <sup>53</sup> Ca / <sup>54</sup> Ca / <sup>53</sup> Sc / <sup>54</sup> Sc / <sup>55</sup> Sc / <sup>56</sup> Sc / <sup>55</sup> Ti / <sup>56</sup> Ti / <sup>57</sup> Ti / <sup>58</sup> Ti / <sup>57</sup> V / <sup>58</sup> V / <sup>59</sup> V / <sup>60</sup> V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
<sup>53</sup> Sc	2008CRZZ	RADIOACTIVITY <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -co in, E $\beta$ , I $\beta$ , $\beta$ -delayed $\gamma$ decay. <sup>50</sup> K deduced isomeric transition. <sup>50</sup> K, <sup>53</sup> Sc deduced levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P90,Crawford
	2008MCZW	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>55</sup> V, X) <sup>53</sup> Sc, ( <sup>57</sup> Cr, X) <sup>53</sup> Sc, ( <sup>54</sup> Ti, X) <sup>53</sup> Sc, E $\approx$ 70 MeV / nucleon; measured thick target E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, I(particle), E(particle) using ToF. <sup>53</sup> Sc deduced levels, J, $\pi$ ; calculated low-lying levels, J, $\pi$ . Results on CD only. CONF E.Lansing (NS2008),P138,McDaniel
	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-n$ ); deduced % $\beta^-n$ . JOUR PRVCA 82 014311
	2010CR02	NUCLEAR REACTIONS Be( <sup>76</sup> Ge, X) <sup>52</sup> Ca / <sup>53</sup> Ca / <sup>54</sup> Ca / <sup>53</sup> Sc / <sup>54</sup> Sc / <sup>55</sup> Sc / <sup>56</sup> Sc / <sup>55</sup> Ti / <sup>56</sup> Ti / <sup>57</sup> Ti / <sup>58</sup> Ti / <sup>57</sup> V / <sup>58</sup> V / <sup>59</sup> V / <sup>60</sup> V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
	2010MC01	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>54</sup> Ti, <sup>53</sup> Sc), E=72 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin using SeGA array, $\sigma$ , and parallel momentum distributions in one-proton knockout reaction. <sup>53</sup> Sc; deduced levels, J, $\pi$ and configurations. Comparison with shell model calculations. JOUR PRVCA 81 024301
<sup>53</sup> Ti	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-n$ ); deduced % $\beta^-n$ . JOUR PRVCA 82 014311
<sup>53</sup> Mn	2010BE20	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>56</sup> Ni, X) <sup>53</sup> Ni / <sup>53</sup> Mn, E not given; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. <sup>53</sup> Ni; deduced levels, J, $\pi$ , isobar analog states, isospin effects. Comparison with shell model calculations. JOUR MPLAE 25 1891

**A=53 (continued)**

- 2010CH15 NUCLEAR REACTIONS  $^{50,52}\text{Cr}(p, n)$ ,  $E=14$  MeV;  $^{50}\text{Cr}(d, n)$ ,  $E=13$  MeV;  $^{55}\text{Mn}(p, xnp)^{53}\text{Mn}$  /  $^{54}\text{Mn}$ ,  $E=33$  MeV;  $^{56}\text{Fe}(d, 2p)$ ,  $E=25$  MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346
- $^{53}\text{Fe}$  2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the  $T=1 / 2$  doublets and  $T=1$  triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced  $S(p)$  values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- 2010KA26 RADIOACTIVITY  $^{53}\text{Co}(\text{EC})$ ,  $^{53m}\text{Co}(\text{EC})$ , (p); deduced  $Q$  values and revised level schemes.  $^{53}\text{Co}$ ; deduced energy of the high-spin isomer.  $^{53}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}(\text{EC})$ ; deduced  $Q$  values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311
- $^{53}\text{Co}$  2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the  $T=1 / 2$  doublets and  $T=1$  triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced  $S(p)$  values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- 2010KA26 RADIOACTIVITY  $^{53}\text{Co}(\text{EC})$ ,  $^{53m}\text{Co}(\text{EC})$ , (p); deduced  $Q$  values and revised level schemes.  $^{53}\text{Co}$ ; deduced energy of the high-spin isomer.  $^{53}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}(\text{EC})$ ; deduced  $Q$  values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311
- 2010KA26 NUCLEAR REACTIONS  $^{54}\text{Fe}(p, X)^{53}\text{Co}$  /  $^{53m}\text{Co}$  /  $^{56}\text{Ni}$  /  $^{57}\text{Cu}$  /  $^{58}\text{Cu}$ ,  $E=40, 50$  MeV;  $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni}$  /  $^{56}\text{Ni}$  /  $^{59}\text{Zn}$  /  $^{60}\text{Zn}$ ,  $E=25$  MeV;  $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co}$  /  $^{57}\text{Ni}$ ,  $E=75, 105$  MeV; measured masses of product nuclides.  $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction  $Q$  value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311
- $^{53}\text{Ni}$  2010BE20 NUCLEAR REACTIONS  $^9\text{Be}(^{56}\text{Ni}, X)^{53}\text{Ni}$  /  $^{53}\text{Mn}$ ,  $E$  not given; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin.  $^{53}\text{Ni}$ ; deduced levels,  $J$ ,  $\pi$ , isobar analog states, isospin effects. Comparison with shell model calculations. JOUR MPLAE 25 1891



## A=54

<sup>54</sup> Ca	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
	2010CR02	NUCLEAR REACTIONS Be( <sup>76</sup> Ge, X) <sup>52</sup> Ca / <sup>53</sup> Ca / <sup>54</sup> Ca / <sup>53</sup> Sc / <sup>54</sup> Sc / <sup>55</sup> Sc / <sup>56</sup> Sc / <sup>55</sup> Ti / <sup>56</sup> Ti / <sup>57</sup> Ti / <sup>58</sup> Ti / <sup>57</sup> V / <sup>58</sup> V / <sup>59</sup> V / <sup>60</sup> V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
<sup>54</sup> Sc	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
	2010CR02	NUCLEAR REACTIONS Be( <sup>76</sup> Ge, X) <sup>52</sup> Ca / <sup>53</sup> Ca / <sup>54</sup> Ca / <sup>53</sup> Sc / <sup>54</sup> Sc / <sup>55</sup> Sc / <sup>56</sup> Sc / <sup>55</sup> Ti / <sup>56</sup> Ti / <sup>57</sup> Ti / <sup>58</sup> Ti / <sup>57</sup> V / <sup>58</sup> V / <sup>59</sup> V / <sup>60</sup> V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
<sup>54</sup> Ti	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
<sup>54</sup> V	2010CR02	RADIOACTIVITY <sup>53,54,55,56,57</sup> Sc, <sup>53,54</sup> Ca( $\beta^-$ ); <sup>54,56</sup> Sc(IT)[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup> Ti, <sup>53,54,56</sup> Sc; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup> Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup> Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
<sup>54</sup> Cr	2010VA13	RADIOACTIVITY <sup>54</sup> Mn(EC); measured decay products, E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other experimental and evaluated results. JOUR ARISE 68 2387
<sup>54</sup> Mn	2008OCZZ	NUCLEAR REACTIONS <sup>27</sup> Al(d, x) <sup>24</sup> Na, <sup>51</sup> V(d, 4n), Fe(d, x) <sup>54</sup> Mn, Fe(d, x) <sup>56</sup> Co, Ni(d, x) <sup>57</sup> Co, Cu(d, x) <sup>63</sup> Zn, Ta(d, x) <sup>180</sup> Ta, W(d, x) <sup>182</sup> Re, <sup>197</sup> Au(d, x) <sup>194</sup> Au, E=25, 35, 41, 50 MeV; Cr(d, x) <sup>48</sup> V, Cr(d, x) <sup>52</sup> Mn, <sup>55</sup> Mn(d, x) <sup>54</sup> Mn, Ni(d, x) <sup>56</sup> Co, E=39.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011
	2008SEZT	NUCLEAR REACTIONS <sup>50</sup> Cr(n, x) <sup>48</sup> V, <sup>58</sup> Ni(n, p $\alpha$ ), <sup>58</sup> Ni(n, x) <sup>56</sup> Co, <sup>63</sup> Cu(n, p $\alpha$ ), <sup>181</sup> Ta(n, $\alpha$ ), <sup>181</sup> Ta(n, p), <sup>181</sup> Ta(n, x) <sup>180</sup> Hf, <sup>181</sup> Ta(n, 2n), <sup>182,183,184,185</sup> W(n, p), <sup>183</sup> W(n, x) <sup>182</sup> Ta, <sup>184</sup> W(n, x) <sup>183</sup> Ta, <sup>186</sup> W(n, x) <sup>185</sup> Ta, <sup>186</sup> W(n, 2n), <sup>184,186</sup> W(n, $\alpha$ ), E=13.8-20.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559

KEYNUMBERS AND KEYWORDS

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**A=54 (continued)**

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| 2010AL17         | NUCLEAR REACTIONS $^{55}\text{Mn}(p, n)^{55}\text{Fe}$ , $E < 18$ MeV; $^{55}\text{Mn}(p, X)^{54}\text{Mn}$ / $^{51}\text{Cr}$ , $E < 45$ MeV; measured reaction products, x-rays, $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Comparison with nuclear model codes ALICE-IPPE, EMPIRE and TALYS. JOUR ARISE 68 2393  |
| 2010CH15         | NUCLEAR REACTIONS $^{50,52}\text{Cr}(p, n)$ , $E = 14$ MeV; $^{50}\text{Cr}(d, n)$ , $E = 13$ MeV; $^{55}\text{Mn}(p, xnp)^{53}\text{Mn}$ / $^{54}\text{Mn}$ , $E = 33$ MeV; $^{56}\text{Fe}(d, 2p)$ , $E = 25$ MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346   |
| 2010EL04         | NUCLEAR REACTIONS $^{60}\text{Ni}$ , $^{95}\text{Mo}(n, p)$ , $^{92}\text{Mo}(n, \alpha)$ , $^{90}\text{Zr}(n, 2n)$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{92}\text{Mo}(n, p)$ $E = \text{fission spectrum}$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007   |
| 2010UD01         | NUCLEAR REACTIONS $^{54}\text{Fe}$ , $^{59}\text{Co}$ , $^{92}\text{Mo}(n, p)$ , $E > 1.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . JOUR ARISE 68 1656  |
| 2010VA13         | RADIOACTIVITY $^{54}\text{Mn}(\text{EC})$ ; measured decay products, $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ . Comparison with other experimental and evaluated results. JOUR ARISE 68 2387   |
| $^{54}\text{Co}$ | 2008BOZG RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $^{54}\text{Co}$ $E_\gamma$ , $I_\gamma$ ; $^{205}\text{Au}(\beta^-)$ ; measured ICC, $E_\gamma$ , $I_\gamma$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P83   |
|                  | 2008FAZZ RADIOACTIVITY $^{54}\text{Ni}(\text{EC})$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced level energies, $J$ , $\pi$ , isomeric state, $T_{1/2}$ . Comparison with $^{54}\text{Fe}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P65,Fahlander   |
|                  | 2008GOZP RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced $^{54}\text{Ni}$ $T_{1/2}$ , GT distribution strength; $^{62}\text{Ge}$ ; $^{113}\text{In}$ ; $^{190}\text{Ta}$ ; measured decay products. Results on CD only. CONF E.Lansing (NS2008),P9,Gorska  |
|                  | 2010FUZZ NUCLEAR REACTIONS $^9\text{Be}$ , $^{23}\text{Na}$ , $^{25}\text{Mg}$ , $^{42}\text{Ca}$ , $^{46}\text{Ti}$ , $^{50}\text{Cr}$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{118}\text{Sn}(^3\text{He}, t)$ , $E = 140$ MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , reaction products; deduced $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39   |
|                  | 2010KA26 ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the $T=1 / 2$ doublets and $T=1$ triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced $S(p)$ values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
| $^{54}\text{Ni}$ | 2008BOZG RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $^{54}\text{Co}$ $E_\gamma$ , $I_\gamma$ ; $^{205}\text{Au}(\beta^-)$ ; measured ICC, $E_\gamma$ , $I_\gamma$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P83   |
|                  | 2008FAZZ RADIOACTIVITY $^{54}\text{Ni}(\text{EC})$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced level energies, $J$ , $\pi$ , isomeric state, $T_{1/2}$ . Comparison with $^{54}\text{Fe}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P65,Fahlander   |

KEYNUMBERS AND KEYWORDS

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**A=54 (continued)**

- 2008GOZP RADIOACTIVITY  $^{54}\text{Ni}(\beta^+)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $^{54}\text{Ni}$   $T_{1/2}$ , GT distribution strength;  $^{62}\text{Ge}$ ;  $^{113}\text{In}$ ;  $^{190}\text{Ta}$ ; measured decay products. Results on CD only. CONF E.Lansing (NS2008),P9,Gorska
- 2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311

**A=55**

- $^{55}\text{Sc}$  2010CR02 RADIOACTIVITY  $^{53,54,55,56,57}\text{Sc}$ ,  $^{53,54}\text{Ca}(\beta^-)$ ;  $^{54,56}\text{Sc}(\text{IT})$ [from  $\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\beta^-$ ,  $\gamma\gamma^-$ ,  $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives.  $^{53,54,55,56,57}\text{Ti}$ ,  $^{53,54,56}\text{Sc}$ ; deduced levels, J,  $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations.  $^{54}\text{Ti}(\beta^-)$ ; measured half-life.  $^{54,55,56}\text{Sc}(\beta^-n)$ ; deduced  $\% \beta^-n$ . JOUR PRVCA 82 014311
- 2010CR02 NUCLEAR REACTIONS  $\text{Be}(^{76}\text{Ge}, \text{X})^{52}\text{Ca} / ^{53}\text{Ca} / ^{54}\text{Ca} / ^{53}\text{Sc} / ^{54}\text{Sc} / ^{55}\text{Sc} / ^{56}\text{Sc} / ^{55}\text{Ti} / ^{56}\text{Ti} / ^{57}\text{Ti} / ^{58}\text{Ti} / ^{57}\text{V} / ^{58}\text{V} / ^{59}\text{V} / ^{60}\text{V} /$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
- $^{55}\text{Ti}$  2008KRZV NUCLEAR REACTIONS  $^9\text{Be}(^{56}\text{Ti}, n)^{55}\text{Ti}$ , E=high; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure;  $^{122,124,126}\text{Cd}$ ,  $^{138,140,142,144}\text{Xe}(\gamma, \gamma')$ ; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- 2010CR02 RADIOACTIVITY  $^{53,54,55,56,57}\text{Sc}$ ,  $^{53,54}\text{Ca}(\beta^-)$ ;  $^{54,56}\text{Sc}(\text{IT})$ [from  $\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\beta^-$ ,  $\gamma\gamma^-$ ,  $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives.  $^{53,54,55,56,57}\text{Ti}$ ,  $^{53,54,56}\text{Sc}$ ; deduced levels, J,  $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations.  $^{54}\text{Ti}(\beta^-)$ ; measured half-life.  $^{54,55,56}\text{Sc}(\beta^-n)$ ; deduced  $\% \beta^-n$ . JOUR PRVCA 82 014311
- 2010CR02 NUCLEAR REACTIONS  $\text{Be}(^{76}\text{Ge}, \text{X})^{52}\text{Ca} / ^{53}\text{Ca} / ^{54}\text{Ca} / ^{53}\text{Sc} / ^{54}\text{Sc} / ^{55}\text{Sc} / ^{56}\text{Sc} / ^{55}\text{Ti} / ^{56}\text{Ti} / ^{57}\text{Ti} / ^{58}\text{Ti} / ^{57}\text{V} / ^{58}\text{V} / ^{59}\text{V} / ^{60}\text{V} /$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
- $^{55}\text{Fe}$  2010AL17 NUCLEAR REACTIONS  $^{55}\text{Mn}(p, n)^{55}\text{Fe}$ , E<18 MeV;  $^{55}\text{Mn}(p, \text{X})^{54}\text{Mn} / ^{51}\text{Cr}$ , E<45 MeV; measured reaction products, x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with nuclear model codes ALICE-IPPE, EMPIRE and TALYS. JOUR ARISE 68 2393

KEYNUMBERS AND KEYWORDS

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**A=55 (continued)**

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| $^{55}\text{Co}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
| $^{55}\text{Ni}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
|                  | 2010KA26 | NUCLEAR REACTIONS $^{54}\text{Fe}(\text{p}, \text{X})^{53}\text{Co}$ / $^{53m}\text{Co}$ / $^{56}\text{Ni}$ / $^{57}\text{Cu}$ / $^{58}\text{Cu}$ , E=40, 50 MeV; $^{54}\text{Fe}(\text{}^3\text{He}, \text{X})^{55}\text{Ni}$ / $^{56}\text{Ni}$ / $^{59}\text{Zn}$ / $^{60}\text{Zn}$ , E=25 MeV; $\text{Ca}(\text{}^{20}\text{Ne}, \text{X})^{56}\text{Co}$ / $^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides. $^{56}\text{Ni}(\text{p}, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311   |

**A=56**

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| $^{56}\text{Sc}$ | 2010CR02 | RADIOACTIVITY $^{53,54,55,56,57}\text{Sc}$ , $^{53,54}\text{Ca}(\beta^-)$ ; $^{54,56}\text{Sc}(\text{IT})$ [from $\text{Be}(\text{}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma^-$ -coin, half-lives. $^{53,54,55,56,57}\text{Ti}$ , $^{53,54,56}\text{Sc}$ ; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. $^{54}\text{Ti}(\beta^-)$ ; measured half-life. $^{54,55,56}\text{Sc}(\beta^- \text{n})$ ; deduced $\% \beta^- \text{-n}$ . JOUR PRVCA 82 014311 |
|                  | 2010CR02 | NUCLEAR REACTIONS $\text{Be}(\text{}^{76}\text{Ge}, \text{X})^{52}\text{Ca}$ / $^{53}\text{Ca}$ / $^{54}\text{Ca}$ / $^{53}\text{Sc}$ / $^{54}\text{Sc}$ / $^{55}\text{Sc}$ / $^{56}\text{Sc}$ / $^{55}\text{Ti}$ / $^{56}\text{Ti}$ / $^{57}\text{Ti}$ / $^{58}\text{Ti}$ / $^{57}\text{V}$ / $^{58}\text{V}$ / $^{59}\text{V}$ / $^{60}\text{V}$ / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311   |

## A=56 (continued)

- <sup>56</sup>Ti 2010CR02 RADIOACTIVITY <sup>53,54,55,56,57</sup>Sc, <sup>53,54</sup>Ca( $\beta^-$ ); <sup>54,56</sup>Sc(IT)[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (fragment) $\beta^-$ ,  $\gamma\gamma^-$ ,  $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. <sup>53,54,55,56,57</sup>Ti, <sup>53,54,56</sup>Sc; deduced levels, J,  $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. <sup>54</sup>Ti( $\beta^-$ ); measured half-life. <sup>54,55,56</sup>Sc( $\beta^-$ n); deduced % $\beta^-$ -n. JOUR PRVCA 82 014311
- 2010CR02 NUCLEAR REACTIONS Be(<sup>76</sup>Ge, X)<sup>52</sup>Ca / <sup>53</sup>Ca / <sup>54</sup>Ca / <sup>53</sup>Sc / <sup>54</sup>Sc / <sup>55</sup>Sc / <sup>56</sup>Sc / <sup>55</sup>Ti / <sup>56</sup>Ti / <sup>57</sup>Ti / <sup>58</sup>Ti / <sup>57</sup>V / <sup>58</sup>V / <sup>59</sup>V / <sup>60</sup>V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311
- <sup>56</sup>Mn 2008GUZQ NUCLEAR REACTIONS <sup>39,41</sup>K(n,  $\gamma$ ), E=10-64 keV; <sup>55</sup>Mn(n,  $\gamma$ ), E=20-40 keV; measured E $\gamma$ , I $\gamma$ , En, In using TOF; deduced  $\sigma$ ; calculated  $\sigma$  using SAMMY code with ENDF / B-VI and JENDL-3.2 resonance parameters; evaluated  $\sigma$ , transmission data. ORELA facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P403
- 2010BU06 NUCLEAR REACTIONS <sup>152</sup>Sm, <sup>165</sup>Ho, <sup>55</sup>Mn, <sup>98</sup>Mo, <sup>197</sup>Au(n,  $\gamma$ ), E=epithermal; measured E $\gamma$ , I $\gamma$ ; deduced resonance energies. Comparison with theoretical calculations. JOUR NIMBE 268 2578
- 2010CH15 NUCLEAR REACTIONS <sup>50,52</sup>Cr(p, n), E=14 MeV; <sup>50</sup>Cr(d, n), E=13 MeV; <sup>55</sup>Mn(p, xnp)<sup>53</sup>Mn / <sup>54</sup>Mn, E=33 MeV; <sup>56</sup>Fe(d, 2p), E=25 MeV; measured hyperfine spectra; deduced magnetic dipole moments, quadrupole moments, mean-square charge radii, shell closure. Comparison with shell model calculation using GXPF1A interaction. JOUR PYLBB 690 346
- 2010KR02 NUCLEAR REACTIONS <sup>27</sup>Al, <sup>197</sup>Au, <sup>59</sup>Co, In, <sup>181</sup>Ta(n,  $\gamma$ ), (n,  $\alpha$ ), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup>Au, <sup>24</sup>Na; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70
- <sup>56</sup>Fe 2008NEZY NUCLEAR REACTIONS <sup>56</sup>Fe, <sup>206</sup>Pb(n, n' $\gamma$ ), E $\approx$ 1000-19000 keV; measured E $\gamma$ , I $\gamma$ ( $\theta$ ); deduced  $\sigma$ . Preliminary results. CONF Nice (Nucl Data for Sci and Technol) Proc,P1016
- 2010F001 NUCLEAR REACTIONS <sup>56</sup>Fe(n, n' $\gamma$ ), E=1-250 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using GEANIE array. <sup>56</sup>Fe; deduced levels, J,  $\pi$ . Discussed first 3- state in <sup>56</sup>Fe. JOUR PRVCA 81 037304
- 2010KA26 ATOMIC MASSES <sup>56,57</sup>Fe, <sup>53,53m,56</sup>Co, <sup>55,56,57</sup>Ni, <sup>57,58</sup>Cu, <sup>59,60</sup>Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup>Fe, <sup>53,53m,55,56</sup>Co, <sup>55,56,57,58</sup>Ni, <sup>57,58,59</sup>Cu, <sup>53,56,57</sup>Fe, <sup>59,60</sup>Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup>Co, <sup>55,56</sup>Ni, <sup>57,58</sup>Cu, <sup>59,60</sup>Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup>Co, <sup>54,55,56</sup>Ni, <sup>56,57,58</sup>Cu, <sup>58,59,60</sup>Zn, <sup>60,61</sup>Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- <sup>56</sup>Co 2008OCZZ NUCLEAR REACTIONS <sup>27</sup>Al(d, x)<sup>24</sup>Na, <sup>51</sup>V(d, 4n), Fe(d, x)<sup>54</sup>Mn, Fe(d, x)<sup>56</sup>Co, Ni(d, x)<sup>57</sup>Co, Cu(d, x)<sup>63</sup>Zn, Ta(d, x)<sup>180</sup>Ta, W(d, x)<sup>182</sup>Re, <sup>197</sup>Au(d, x)<sup>194</sup>Au, E=25, 35, 41, 50 MeV; Cr(d, x)<sup>48</sup>V, Cr(d, x)<sup>52</sup>Mn, <sup>55</sup>Mn(d, x)<sup>54</sup>Mn, Ni(d, x)<sup>56</sup>Co, E=39.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ; calculated  $\sigma$  using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011

## A=56 (continued)

- 2008SEZT NUCLEAR REACTIONS  $^{50}\text{Cr}(n, x)^{48}\text{V}$ ,  $^{58}\text{Ni}(n, p\alpha)$ ,  $^{58}\text{Ni}(n, x)^{56}\text{Co}$ ,  $^{63}\text{Cu}(n, p\alpha)$ ,  $^{181}\text{Ta}(n, \alpha)$ ,  $^{181}\text{Ta}(n, p)$ ,  $^{181}\text{Ta}(n, x)^{180}\text{Hf}$ ,  $^{181}\text{Ta}(n, 2n)$ ,  $^{182,183,184,185}\text{W}(n, p)$ ,  $^{183}\text{W}(n, x)^{182}\text{Ta}$ ,  $^{184}\text{W}(n, x)^{183}\text{Ta}$ ,  $^{186}\text{W}(n, x)^{185}\text{Ta}$ ,  $^{186}\text{W}(n, 2n)$ ,  $^{184,186}\text{W}(n, \alpha)$ ,  $E=13.8\text{-}20.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc.P559
- 2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the  $T=1 / 2$  doublets and  $T=1$  triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced  $S(p)$  values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- 2010KA26 RADIOACTIVITY  $^{53}\text{Co}(\text{EC})$ ,  $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes.  $^{53}\text{Co}$ ; deduced energy of the high-spin isomer.  $^{53}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311
- 2010KA26 NUCLEAR REACTIONS  $^{54}\text{Fe}(p, X)^{53}\text{Co} / ^{53m}\text{Co} / ^{56}\text{Ni} / ^{57}\text{Cu} / ^{58}\text{Cu}$ ,  $E=40, 50$  MeV;  $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni} / ^{56}\text{Ni} / ^{59}\text{Zn} / ^{60}\text{Zn}$ ,  $E=25$  MeV;  $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co} / ^{57}\text{Ni}$ ,  $E=75, 105$  MeV; measured masses of product nuclides.  $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311
- $^{56}\text{Ni}$  2009R029 NUCLEAR REACTIONS  $^{12}\text{C}(^8\text{He}, ^7\text{H})$ ,  $E=15.4$  MeV / nucleon; measured  $E_t$ ,  $I_t$ , recoil spectra, (recoil)(triton)-coin; deduced correlations.  $^2\text{H}(^{56}\text{Ni}, ^{56}\text{Ni}')$ ,  $E=50$  MeV / nucleon; measured recoiling  $E_d$ ,  $I_d$ .  $^{56}\text{Ni}$ ; deduced isoscaler giant monopole and giant quadrupole resonance parameters.  $^1\text{H}(^{11}\text{Li}, ^9\text{Li})$ ,  $E=33$  MeV; measured  $E_t$ ,  $I_t$ , recoil spectra; deduced  $\sigma(\theta)$ , configurations. MAYA active target and SPIRAL radioactive beam facility at GANIL. JOUR ZAANE 42 447
- 2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the  $T=1 / 2$  doublets and  $T=1$  triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced  $S(p)$  values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- 2010KA26 RADIOACTIVITY  $^{53}\text{Co}(\text{EC})$ ,  $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes.  $^{53}\text{Co}$ ; deduced energy of the high-spin isomer.  $^{53}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311

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**A=56 (continued)**

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| 2010KA26                  | NUCLEAR REACTIONS $^{54}\text{Fe}(p, X)^{53}\text{Co} / ^{53m}\text{Co} / ^{56}\text{Ni} / ^{57}\text{Cu} / ^{58}\text{Cu}$ , E=40, 50 MeV; $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni} / ^{56}\text{Ni} / ^{59}\text{Zn} / ^{60}\text{Zn}$ , E=25 MeV; $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co} / ^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides. $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311  |
| $^{56}\text{Cu}$ 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |

**A=57**

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| $^{57}\text{Sc}$ 2010CR02 | RADIOACTIVITY $^{53,54,55,56,57}\text{Sc}$ , $^{53,54}\text{Ca}(\beta^-)$ ; $^{54,56}\text{Sc}(\text{IT})$ [from $\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. $^{53,54,55,56,57}\text{Ti}$ , $^{53,54,56}\text{Sc}$ ; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. $^{54}\text{Ti}(\beta^-)$ ; measured half-life. $^{54,55,56}\text{Sc}(\beta^-n)$ ; deduced $\% \beta^-n$ . JOUR PRVCA 82 014311 |
| $^{57}\text{Ti}$ 2010CR02 | RADIOACTIVITY $^{53,54,55,56,57}\text{Sc}$ , $^{53,54}\text{Ca}(\beta^-)$ ; $^{54,56}\text{Sc}(\text{IT})$ [from $\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , (fragment) $\beta^-$ , $\gamma\gamma^-$ , $\beta\gamma^-$ , (fragment) $\beta\gamma$ -coin, half-lives. $^{53,54,55,56,57}\text{Ti}$ , $^{53,54,56}\text{Sc}$ ; deduced levels, J, $\pi$ , logft, configurations. Comparison with GXPF1 shell-model calculations. $^{54}\text{Ti}(\beta^-)$ ; measured half-life. $^{54,55,56}\text{Sc}(\beta^-n)$ ; deduced $\% \beta^-n$ . JOUR PRVCA 82 014311 |
| $^{57}\text{V}$ 2010CR02  | NUCLEAR REACTIONS $\text{Be}(^{76}\text{Ge}, X)^{52}\text{Ca} / ^{53}\text{Ca} / ^{54}\text{Ca} / ^{53}\text{Sc} / ^{54}\text{Sc} / ^{55}\text{Sc} / ^{56}\text{Sc} / ^{55}\text{Ti} / ^{56}\text{Ti} / ^{57}\text{Ti} / ^{58}\text{Ti} / ^{57}\text{V} / ^{58}\text{V} / ^{59}\text{V} / ^{60}\text{V}$ / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311  |
| $^{57}\text{Mn}$ 2009STZZ | NUCLEAR REACTIONS $^{13,14}\text{C}(^{48}\text{Ca}, \text{xn})^{57}\text{Mn} / ^{58}\text{Mn} / ^{59}\text{Mn} / ^{60}\text{Mn}$ , E=130 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma^-$ , (fragment) $\gamma$ -coin, $\gamma(\theta)$ , $\gamma\gamma(\theta)$ (DCO) using Gammasphere array and Fragment Mass Analyzer. $^{57,58,59,60}\text{Mn}$ ; deduced levels, J, $\pi$ , and Comparisons with shell-model calculations using PREPRINT Steppenbeck,12/22/2009  |
| 2010ST01                  | NUCLEAR REACTIONS $^{13,14}\text{C}(^{48}\text{Ca}, X)$ , E=130 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using the Gammasphere array, $\gamma(\theta)$ , DCO ratios. $^{57,58,59,60}\text{Mn}$ ; deduced levels, J, $\pi$ , multipolarities. Comparison with shell-model calculations using the GXPF1A effective interaction. JOUR PRVCA 81 014305   |

KEYNUMBERS AND KEYWORDS

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**A=57 (continued)**

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| $^{57}\text{Fe}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010RU01 | NUCLEAR REACTIONS $^{28}\text{Si}(^{32}\text{Si}, n2p)^{57}\text{Ni}$ , E=130 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coins.; deduced high-spin states, superdeformed rotational bands. Cranked Nilsson-Strutinsky calculations, GAMMASPHERE. JOUR JPGPE 37 075105  |
|                  | 2010WA03 | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{56,57}\text{Fe}(n, \gamma)$ , E=10-90 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ENDF / B-VII.0 and JENDL-3.3 data. JOUR NIMBE 268 440  |
| $^{57}\text{Co}$ | 2008DIZR | NUCLEAR REACTIONS $\text{Fe}(d, x)^{57}\text{Co}$ , E $\approx$ 0-22 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using ALICE-IPPE. CONF Nice (Nucl Data for Sci and Technol) Proc,P1375   |
|                  | 2008OCZZ | NUCLEAR REACTIONS $^{27}\text{Al}(d, x)^{24}\text{Na}$ , $^{51}\text{V}(d, 4n)$ , $\text{Fe}(d, x)^{54}\text{Mn}$ , $\text{Fe}(d, x)^{56}\text{Co}$ , $\text{Ni}(d, x)^{57}\text{Co}$ , $\text{Cu}(d, x)^{63}\text{Zn}$ , $\text{Ta}(d, x)^{180}\text{Ta}$ , $\text{W}(d, x)^{182}\text{Re}$ , $^{197}\text{Au}(d, x)^{194}\text{Au}$ , E=25, 35, 41, 50 MeV; $\text{Cr}(d, x)^{48}\text{V}$ , $\text{Cr}(d, x)^{52}\text{Mn}$ , $^{55}\text{Mn}(d, x)^{54}\text{Mn}$ , $\text{Ni}(d, x)^{56}\text{Co}$ , E=39.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011   |
| $^{57}\text{Ni}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
|                  | 2010KA26 | NUCLEAR REACTIONS $^{54}\text{Fe}(p, X)^{53}\text{Co}$ / $^{53m}\text{Co}$ / $^{56}\text{Ni}$ / $^{57}\text{Cu}$ / $^{58}\text{Cu}$ , E=40, 50 MeV; $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni}$ / $^{56}\text{Ni}$ / $^{59}\text{Zn}$ / $^{60}\text{Zn}$ , E=25 MeV; $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co}$ / $^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides. $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311  |



KEYNUMBERS AND KEYWORDS

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**A=57 (continued)**

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|                  | 2010RU01 | NUCLEAR REACTIONS $^{28}\text{Si}(^{32}\text{Si}, n2p)^{57}\text{Ni}$ , E=130 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coins.; deduced high-spin states, superdeformed rotational bands. Cranked Nilsson-Strutinsky calculations, GAMMASPHERE. JOUR JPGPE 37 075105  |
| $^{57}\text{Cu}$ | 2009COZX | NUCLEAR MOMENTS $^{57,58,59,63,65}\text{Cu}$ ; measured hyperfine structure using in-gas-cell laser spectroscopy technique at LISOL facility; deduced magnetic moments, hyperfine parameters and shell-model calculations using GXPF1 interaction. PREPRINT Cocolios,12/17/2009  |
|                  | 2010C001 | NUCLEAR REACTIONS $\text{Ni}(p, xn)^{57}\text{Cu} / ^{58}\text{Cu} / ^{59}\text{Cu}$ , E=30 MeV; $\text{Ni}(^3\text{He}, pn)^{59}\text{Cu}$ , E=25 MeV; measured hyperfine spectra of $^{57,58,59,63,65}\text{Cu}$ using in-gas-cell laser spectroscopy at LISOL facility. JOUR PRVCA 81 014314  |
|                  | 2010C001 | NUCLEAR MOMENTS $^{57,58,59,63,65}\text{Cu}$ ; measured hyperfine spectra using in-gas-cell resonant ionization laser spectroscopy; deduced g-factors, isotope shifts, magnetic dipole moments, and configuration. Comparison with shell-model calculations using GXPF1 interaction. JOUR PRVCA 81 014314  |
|                  | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
|                  | 2010KA26 | NUCLEAR REACTIONS $^{54}\text{Fe}(p, X)^{53}\text{Co} / ^{53m}\text{Co} / ^{56}\text{Ni} / ^{57}\text{Cu} / ^{58}\text{Cu}$ , E=40, 50 MeV; $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni} / ^{56}\text{Ni} / ^{59}\text{Zn} / ^{60}\text{Zn}$ , E=25 MeV; $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co} / ^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides. $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311  |

**A=58**

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| $^{58}\text{Ti}$ | 2010CR02 | NUCLEAR REACTIONS $\text{Be}(^{76}\text{Ge}, X)^{52}\text{Ca} / ^{53}\text{Ca} / ^{54}\text{Ca} / ^{53}\text{Sc} / ^{54}\text{Sc} / ^{55}\text{Sc} / ^{56}\text{Sc} / ^{55}\text{Ti} / ^{56}\text{Ti} / ^{57}\text{Ti} / ^{58}\text{Ti} / ^{57}\text{V} / ^{58}\text{V} / ^{59}\text{V} / ^{60}\text{V} /$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311 |
| $^{58}\text{V}$  | 2010CR02 | NUCLEAR REACTIONS $\text{Be}(^{76}\text{Ge}, X)^{52}\text{Ca} / ^{53}\text{Ca} / ^{54}\text{Ca} / ^{53}\text{Sc} / ^{54}\text{Sc} / ^{55}\text{Sc} / ^{56}\text{Sc} / ^{55}\text{Ti} / ^{56}\text{Ti} / ^{57}\text{Ti} / ^{58}\text{Ti} / ^{57}\text{V} / ^{58}\text{V} / ^{59}\text{V} / ^{60}\text{V} /$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311 |

KEYNUMBERS AND KEYWORDS

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**A=58 (continued)**

<sup>58</sup> Mn	2009STZZ	NUCLEAR REACTIONS <sup>13,14</sup> C( <sup>48</sup> Ca, xnp) <sup>57</sup> Mn / <sup>58</sup> Mn / <sup>59</sup> Mn / <sup>60</sup> Mn, E=130 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin, $\gamma(\theta)$ , $\gamma\gamma(\theta)$ (DCO) using Gammasphere array and Fragment Mass Analyzer. <sup>57,58,59,60</sup> Mn; deduced levels, J, $\pi$ , and Comparisons with shell-model calculations using PREPRINT Steppenbeck,12/22/2009
	2010ST01	NUCLEAR REACTIONS <sup>13,14</sup> C( <sup>48</sup> Ca, X), E=130 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin using the Gammasphere array, $\gamma(\theta)$ , DCO ratios. <sup>57,58,59,60</sup> Mn; deduced levels, J, $\pi$ , multipolarities. Comparison with shell-model calculations using the GXPF1A effective interaction. JOUR PRVCA 81 014305
<sup>58</sup> Fe	2010WA03	NUCLEAR REACTIONS <sup>197</sup> Au, <sup>56,57</sup> Fe(n, $\gamma$ ), E=10-90 keV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with ENDF / B-VII.0 and JENDL-3.3 data. JOUR NIMBE 268 440
<sup>58</sup> Co	2010EL04	NUCLEAR REACTIONS <sup>60</sup> Ni, <sup>95</sup> Mo(n, p), <sup>92</sup> Mo(n, $\alpha$ ), <sup>90</sup> Zr(n, 2n), <sup>54</sup> Fe, <sup>58</sup> Ni, <sup>92</sup> Mo(n, p) E=fission spectrum; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007
<sup>58</sup> Ni	2010EK01	NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>106</sup> In, <sup>106</sup> In'), ( <sup>108</sup> In, <sup>108</sup> In'), E=2.8 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin following Coulomb excitation at the REX-ISOLDE facility. <sup>106,108</sup> In; deduced levels, J, $\pi$ , B(E2); calculated low-lying level properties, E2, M1 matrix elements using shell model plus coupled channels. JOUR ZAANE 44 355
	2010KA26	ATOMIC MASSES <sup>56,57</sup> Fe, <sup>53,53m,56</sup> Co, <sup>55,56,57</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup> Fe, <sup>53,53m,55,56</sup> Co, <sup>55,56,57,58</sup> Ni, <sup>57,58,59</sup> Cu, <sup>53,56,57</sup> Fe, <sup>59,60</sup> Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup> Co, <sup>54,55,56</sup> Ni, <sup>56,57,58</sup> Cu, <sup>58,59,60</sup> Zn, <sup>60,61</sup> Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
	2010KA26	RADIOACTIVITY <sup>53</sup> Co(EC), <sup>53m</sup> Co(EC), (p); deduced Q values and revised level schemes. <sup>53</sup> Co; deduced energy of the high-spin isomer. <sup>53</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn(EC); deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311
	2010KR01	NUCLEAR REACTIONS <sup>58</sup> Ni, <sup>90</sup> Zr( <sup>6</sup> Li, <sup>6</sup> Li), ( <sup>6</sup> Li, <sup>6</sup> Li'), E=240 MeV; measured particle spectra, $\sigma(\theta)$ using multipole dipole-multipole (MDM) magnetic spectrometer. <sup>58</sup> Ni, <sup>90</sup> Zr; deduced levels, J, $\pi$ , B(E2) for first 2+, and B(E3) for first 3- states. Comparison with deformed potential (DP) model and density-dependent double-folding (DDF) calculations using M3Y NN effective interaction and phenomenological Woods-Saxon potential. JOUR PRVCA 81 014603
	2010MA45	NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>17</sup> F, <sup>17</sup> F), ( <sup>17</sup> F, <sup>17</sup> F'), ( <sup>17</sup> F, p <sup>16</sup> O), E=54.1, 58.5 MeV; measured $\sigma(\theta)$ using EXODET array; analyzed "reduced" $\sigma$ . Calculations using coupled-channels code FRESKO. Comparisons with <sup>58</sup> Ni( <sup>16</sup> O, <sup>16</sup> O) and <sup>64</sup> Zn( <sup>16</sup> O, <sup>16</sup> O). Secondary radioactive beams. JOUR NUPAB 834 488c

KEYNUMBERS AND KEYWORDS

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A=58 (continued)

- 2010PAZZ NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{124}\text{Sn}$ ,  $^{208}\text{Pb}(d, d')$ , E=3.5-7.3 MeV; measured  $\sigma(\theta)$ . Tandem. CONF St.-Petersburg,P136,Pavlenko
- 2010ZE06 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{204,206,208}\text{Pb}(\text{polarized } p, p)$ , E=295 MeV; measured proton spectra,  $\sigma(\theta)$  and analyzing powers; deduced neutron and proton densities, neutron skin thickness and rms radii using model-independent sum-of-Gaussians distributions. Comparison with relativistic impulse approximation (RIA) for  $^{58}\text{Ni}$  data and with RIA and Murdock and Horowitz (MH) model calculations for Pb nuclei. JOUR PRVCA 82 044611
- $^{58}\text{Cu}$  2009COZX NUCLEAR MOMENTS  $^{57,58,59,63,65}\text{Cu}$ ; measured hyperfine structure using in-gas-cell laser spectroscopy technique at LISOL facility; deduced magnetic moments, hyperfine parameters and shell-model calculations using GXPF1 interaction. PREPRINT Cocolios,12/17/2009
- 2010C001 NUCLEAR REACTIONS  $\text{Ni}(p, xn)^{57}\text{Cu} / ^{58}\text{Cu} / ^{59}\text{Cu}$ , E=30 MeV;  $\text{Ni}(^3\text{He}, pn)^{59}\text{Cu}$ , E=25 MeV; measured hyperfine spectra of  $^{57,58,59,63,65}\text{Cu}$  using in-gas-cell laser spectroscopy at LISOL facility. JOUR PRVCA 81 014314
- 2010C001 NUCLEAR MOMENTS  $^{57,58,59,63,65}\text{Cu}$ ; measured hyperfine spectra using in-gas-cell resonant ionization laser spectroscopy; deduced g-factors, isotope shifts, magnetic dipole moments, and configuration. Comparison with shell-model calculations using GXPF1 interaction. JOUR PRVCA 81 014314
- 2010FUZZ NUCLEAR REACTIONS  $^9\text{Be}$ ,  $^{23}\text{Na}$ ,  $^{25}\text{Mg}$ ,  $^{42}\text{Ca}$ ,  $^{46}\text{Ti}$ ,  $^{50}\text{Cr}$ ,  $^{54}\text{Fe}$ ,  $^{58}\text{Ni}$ ,  $^{118}\text{Sn}(^3\text{He}, t)$ , E=140 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , reaction products; deduced  $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.1,P39
- 2010KA26 ATOMIC MASSES  $^{56,57}\text{Fe}$ ,  $^{53,53m,56}\text{Co}$ ,  $^{55,56,57}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses.  $^{56,57}\text{Fe}$ ,  $^{53,53m,55,56}\text{Co}$ ,  $^{55,56,57,58}\text{Ni}$ ,  $^{57,58,59}\text{Cu}$ ,  $^{53,56,57}\text{Fe}$ ,  $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements.  $^{53,54}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets.  $^{53}\text{Co}$ ,  $^{54,55,56}\text{Ni}$ ,  $^{56,57,58}\text{Cu}$ ,  $^{58,59,60}\text{Zn}$ ,  $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311
- 2010KA26 RADIOACTIVITY  $^{53}\text{Co}(\text{EC})$ ,  $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes.  $^{53}\text{Co}$ ; deduced energy of the high-spin isomer.  $^{53}\text{Co}$ ,  $^{55,56}\text{Ni}$ ,  $^{57,58}\text{Cu}$ ,  $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311
- 2010KA26 NUCLEAR REACTIONS  $^{54}\text{Fe}(p, X)^{53}\text{Co} / ^{53m}\text{Co} / ^{56}\text{Ni} / ^{57}\text{Cu} / ^{58}\text{Cu}$ , E=40, 50 MeV;  $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni} / ^{56}\text{Ni} / ^{59}\text{Zn} / ^{60}\text{Zn}$ , E=25 MeV;  $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co} / ^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides.  $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311

KEYNUMBERS AND KEYWORDS

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**A=58 (continued)**

<sup>58</sup>Zn      2010KA26      ATOMIC MASSES <sup>56,57</sup>Fe, <sup>53,53m,56</sup>Co, <sup>55,56,57</sup>Ni, <sup>57,58</sup>Cu, <sup>59,60</sup>Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup>Fe, <sup>53,53m,55,56</sup>Co, <sup>55,56,57,58</sup>Ni, <sup>57,58,59</sup>Cu, <sup>53,56,57</sup>Fe, <sup>59,60</sup>Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup>Co, <sup>55,56</sup>Ni, <sup>57,58</sup>Cu, <sup>59,60</sup>Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup>Co, <sup>54,55,56</sup>Ni, <sup>56,57,58</sup>Cu, <sup>58,59,60</sup>Zn, <sup>60,61</sup>Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311

**A=59**

<sup>59</sup>V      2010CR02      NUCLEAR REACTIONS Be(<sup>76</sup>Ge, X)<sup>52</sup>Ca / <sup>53</sup>Ca / <sup>54</sup>Ca / <sup>53</sup>Sc / <sup>54</sup>Sc / <sup>55</sup>Sc / <sup>56</sup>Sc / <sup>55</sup>Ti / <sup>56</sup>Ti / <sup>57</sup>Ti / <sup>58</sup>Ti / <sup>57</sup>V / <sup>58</sup>V / <sup>59</sup>V / <sup>60</sup>V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311

<sup>59</sup>Mn      2009STZZ      NUCLEAR REACTIONS <sup>13,14</sup>C(<sup>48</sup>Ca, xnp)<sup>57</sup>Mn / <sup>58</sup>Mn / <sup>59</sup>Mn / <sup>60</sup>Mn, E=130 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (fragment) $\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ (DCO) using Gammasphere array and Fragment Mass Analyzer. <sup>57,58,59,60</sup>Mn; deduced levels, J,  $\pi$ , and Comparisons with shell-model calculations using PREPRINT Steppenbeck,12/22/2009

                 2010ST01      NUCLEAR REACTIONS <sup>13,14</sup>C(<sup>48</sup>Ca, X), E=130 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using the Gammasphere array,  $\gamma(\theta)$ , DCO ratios. <sup>57,58,59,60</sup>Mn; deduced levels, J,  $\pi$ , multipolarities. Comparison with shell-model calculations using the GXPF1A effective interaction. JOUR PRVCA 81 014305

<sup>59</sup>Fe      2008SEZT      NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, p $\alpha$ ), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, p $\alpha$ ), <sup>181</sup>Ta(n,  $\alpha$ ), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n,  $\alpha$ ), E=13.8-20.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559

                 2010UD01      NUCLEAR REACTIONS <sup>54</sup>Fe, <sup>59</sup>Co, <sup>92</sup>Mo(n, p), E>1.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . JOUR ARISE 68 1656

<sup>59</sup>Co      2010S016      NUCLEAR REACTIONS <sup>59</sup>Co(<sup>6</sup>Li, d $\alpha$ ), E=29.6 MeV; measured E $\alpha$ , I $\alpha(\theta)$ , Ed, Id( $\theta$ ), d $\alpha$ -coin; deduced  $\sigma(\theta)$ , direct breakup T<sub>1/2</sub>; calculated T<sub>1/2</sub>. Discussed breakup reaction mechanism features. JOUR NUPAB 834 420c

<sup>59</sup>Cu      2009COZX      NUCLEAR MOMENTS <sup>57,58,59,63,65</sup>Cu; measured hyperfine structure using in-gas-cell laser spectroscopy technique at LISOL facility; deduced magnetic moments, hyperfine parameters and shell-model calculations using GXPF1 interaction. PREPRINT Cocolios,12/17/2009

                 2010C001      NUCLEAR REACTIONS Ni(p, xn)<sup>57</sup>Cu / <sup>58</sup>Cu / <sup>59</sup>Cu, E=30 MeV; Ni(<sup>3</sup>He, pn)<sup>59</sup>Cu, E=25 MeV; measured hyperfine spectra of <sup>57,58,59,63,65</sup>Cu using in-gas-cell laser spectroscopy at LISOL facility. JOUR PRVCA 81 014314

KEYNUMBERS AND KEYWORDS

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**A=59 (continued)**

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| 2010C001                  | NUCLEAR MOMENTS <sup>57,58,59,63,65</sup> Cu; measured hyperfine spectra using in-gas-cell resonant ionization laser spectroscopy; deduced g-factors, isotope shifts, magnetic dipole moments, and configuration. Comparison with shell-model calculations using GXPF1 interaction. JOUR PRVCA 81 014314   |
| 2010KA26                  | ATOMIC MASSES <sup>56,57</sup> Fe, <sup>53,53m,56</sup> Co, <sup>55,56,57</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup> Fe, <sup>53,53m,55,56</sup> Co, <sup>55,56,57,58</sup> Ni, <sup>57,58,59</sup> Cu, <sup>53,56,57</sup> Fe, <sup>59,60</sup> Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup> Co, <sup>54,55,56</sup> Ni, <sup>56,57,58</sup> Cu, <sup>58,59,60</sup> Zn, <sup>60,61</sup> Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
| 2010KA26                  | RADIOACTIVITY <sup>53</sup> Co(EC), <sup>53m</sup> Co(EC), (p); deduced Q values and revised level schemes. <sup>53</sup> Co; deduced energy of the high-spin isomer. <sup>53</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn(EC); deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
| <sup>59</sup> Zn 2010KA26 | ATOMIC MASSES <sup>56,57</sup> Fe, <sup>53,53m,56</sup> Co, <sup>55,56,57</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup> Fe, <sup>53,53m,55,56</sup> Co, <sup>55,56,57,58</sup> Ni, <sup>57,58,59</sup> Cu, <sup>53,56,57</sup> Fe, <sup>59,60</sup> Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup> Co, <sup>54,55,56</sup> Ni, <sup>56,57,58</sup> Cu, <sup>58,59,60</sup> Zn, <sup>60,61</sup> Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
| 2010KA26                  | RADIOACTIVITY <sup>53</sup> Co(EC), <sup>53m</sup> Co(EC), (p); deduced Q values and revised level schemes. <sup>53</sup> Co; deduced energy of the high-spin isomer. <sup>53</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn(EC); deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
| 2010KA26                  | NUCLEAR REACTIONS <sup>54</sup> Fe(p, X) <sup>53</sup> Co / <sup>53m</sup> Co / <sup>56</sup> Ni / <sup>57</sup> Cu / <sup>58</sup> Cu, E=40, 50 MeV; <sup>54</sup> Fe( <sup>3</sup> He, X) <sup>55</sup> Ni / <sup>56</sup> Ni / <sup>59</sup> Zn / <sup>60</sup> Zn, E=25 MeV; Ca( <sup>20</sup> Ne, X) <sup>56</sup> Co / <sup>57</sup> Ni, E=75, 105 MeV; measured masses of product nuclides. <sup>56</sup> Ni(p, $\gamma$ ) <sup>57</sup> Cu; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311  |

**A=60**

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| <sup>60</sup> V 2010CR02 | NUCLEAR REACTIONS Be( <sup>76</sup> Ge, X) <sup>52</sup> Ca / <sup>53</sup> Ca / <sup>54</sup> Ca / <sup>53</sup> Sc / <sup>54</sup> Sc / <sup>55</sup> Sc / <sup>56</sup> Sc / <sup>55</sup> Ti / <sup>56</sup> Ti / <sup>57</sup> Ti / <sup>58</sup> Ti / <sup>57</sup> V / <sup>58</sup> V / <sup>59</sup> V / <sup>60</sup> V / , E=130 MeV / nucleon; measured yields. JOUR PRVCA 82 014311 |
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## A=60 (continued)

- 2010DA06 NUCLEAR REACTIONS Ni( $^{86}\text{Kr}$ , X), E=60.5 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma(t)$ . Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements.  $^{50}\text{K}$ ,  $^{60}\text{V}$ ,  $^{62,64}\text{Mn}$ ,  $^{65,67}\text{Fe}$ ,  $^{68,70}\text{Co}$ ,  $^{75}\text{Cu}$ ,  $^{78}\text{Zn}$ ,  $^{78}\text{Ga}$ ; deduced isomers, half-lives, J,  $\pi$ , multiplicities.  $^{69,71,73}\text{Cu}$ ; deduced B(M1), B(E2) values.  $^{75}\text{Cu}$ ; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations.  $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-states. JOUR PRVCA 81 034304
- $^{60}\text{Cr}$  2010GA06 NUCLEAR REACTIONS  $^9\text{Be}(^{62}\text{Fe}, ^{62}\text{Fe}')$ , E=73.0 MeV / nucleon [ $^{62}\text{Fe}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  $^9\text{Be}(^{64}\text{Fe}, ^{64}\text{Fe}')$ , E=67.5 MeV / nucleon [ $^{64}\text{Fe}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  $^9\text{Be}(^{66}\text{Fe}, ^{66}\text{Fe}')$ , E=82.6 MeV / nucleon [ $^{66}\text{Fe}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  $^9\text{Be}(^{60}\text{Cr}, ^{60}\text{Cr}')$ , E=80.6 MeV / nucleon [ $^{60}\text{Cr}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  $^9\text{Be}(^{62}\text{Cr}, ^{62}\text{Cr}')$ , E=74.6 MeV / nucleon [ $^{62}\text{Cr}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  $^9\text{Be}(^{64}\text{Cr}, ^{64}\text{Cr}')$ , E=87.0 MeV / nucleon [ $^{64}\text{Cr}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ .  $^{62,64,66}\text{Fe}$ ,  $^{60,62,64}\text{Cr}$ ; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces.  $^9\text{Be}(^{76}\text{Ge}, \text{X})^{62}\text{Fe} / ^{64}\text{Fe} / ^{66}\text{Fe} / ^{60}\text{Cr} / ^{62}\text{Cr} / ^{64}\text{Cr} / ^{65}\text{Mn} / ^{66}\text{Mn} / ^{67}\text{Fe} / ^{69}\text{Co}$ , E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- $^{60}\text{Mn}$  2008FOZS NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle),  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin.  $^{60}\text{Mn}$ ,  $^{78}\text{Ga}$ ,  $^{82}\text{Ga}$ ,  $^{92}\text{Br}$ ,  $^{95}\text{Rb}$ ,  $^{98}\text{Rb}$ ,  $^{92}\text{Y}$ ,  $^{101}\text{Y}$ ,  $^{112}\text{Tc}$  deduced isomeric transition,  $T_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden
- 2009STZZ NUCLEAR REACTIONS  $^{13,14}\text{C}(^{48}\text{Ca}, \text{xnp})^{57}\text{Mn} / ^{58}\text{Mn} / ^{59}\text{Mn} / ^{60}\text{Mn}$ , E=130 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (fragment) $\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ (DCO) using Gammasphere array and Fragment Mass Analyzer.  $^{57,58,59,60}\text{Mn}$ ; deduced levels, J,  $\pi$ , and Comparisons with shell-model calculations using PREPRINT Steppenbeck,12/22/2009
- 2010H013 RADIOACTIVITY  $^{60,62}\text{Mn}(\beta^-)$ [from  $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MEV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{60,62}\text{Fe}$ ; deduced levels, J,  $\pi$ , multiplicity. JOUR PRVCA 82 044305
- 2010ST01 NUCLEAR REACTIONS  $^{13,14}\text{C}(^{48}\text{Ca}, \text{X})$ , E=130 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using the Gammasphere array,  $\gamma(\theta)$ , DCO ratios.  $^{57,58,59,60}\text{Mn}$ ; deduced levels, J,  $\pi$ , multiplicities. Comparison with shell-model calculations using the GXPF1A effective interaction. JOUR PRVCA 81 014305
- $^{60}\text{Fe}$  2010H013 NUCLEAR REACTIONS  $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , prompt and delayed  $\gamma$  spectra using Gammasphere array.  $^{60,62}\text{Fe}$ ; deduced levels, J,  $\pi$ , multiplicity, yrast levels. Comparison with shell model calculations. Level systematics of  $^{54,56,58,60,62,64}\text{Fe}$  nuclei. JOUR PRVCA 82 044305

KEYNUMBERS AND KEYWORDS

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A=60 (continued)

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|                  | 2010H013 | RADIOACTIVITY $^{60,62}\text{Mn}(\beta^-)$ [from $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{60,62}\text{Fe}$ ; deduced levels, J, $\pi$ , multipolarity. JOUR PRVCA 82 044305  |
| $^{60}\text{Co}$ | 2008ZAZY | RADIOACTIVITY $^{60}\text{Co}(\beta^-)$ , $^{152}\text{Eu}(\beta^-)$ , $^{193}\text{Os}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ , $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455   |
|                  | 2010BA16 | NUCLEAR REACTIONS $^{76}\text{Ge}$ , $^{74}\text{Ge}$ , $\text{Ge}(p, \text{X})^{67}\text{Ge} / ^{68}\text{Ge} / ^{69}\text{Ge} / ^{71}\text{As} / ^{74}\text{As} / ^{65}\text{Zn} / ^{60}\text{Co}$ , E=100 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR PANUE 73 1106   |
|                  | 2010EL04 | NUCLEAR REACTIONS $^{60}\text{Ni}$ , $^{95}\text{Mo}(n, p)$ , $^{92}\text{Mo}(n, \alpha)$ , $^{90}\text{Zr}(n, 2n)$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{92}\text{Mo}(n, p)$ E=fission spectrum; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007  |
|                  | 2010KR02 | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{197}\text{Au}$ , $^{59}\text{Co}$ , In, $^{181}\text{Ta}(n, \gamma)$ , $(n, \alpha)$ , $(n, xn)$ , E=1 GeV; $^{191,192,193,194,196,198}\text{Au}$ , $^{24}\text{Na}$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced yields, $\sigma$ . JOUR NIMAE 615 70   |
|                  | 2010LE01 | RADIOACTIVITY $^{238}\text{Np}$ , $^{60}\text{Co}(\beta^-)$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced $\gamma$ -ray emission probabilities from $\beta^-$ -decay of $^{238}\text{Np}$ . JOUR ARISE 68 432   |
|                  | 2010LE01 | NUCLEAR REACTIONS $^{237}\text{Np}$ , $^{59}\text{Co}(n, \gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR ARISE 68 432   |
| $^{60}\text{Ni}$ | 2008ZAZY | RADIOACTIVITY $^{60}\text{Co}(\beta^-)$ , $^{152}\text{Eu}(\beta^-)$ , $^{193}\text{Os}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ , $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455   |
|                  | 2010LE01 | RADIOACTIVITY $^{238}\text{Np}$ , $^{60}\text{Co}(\beta^-)$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced $\gamma$ -ray emission probabilities from $\beta^-$ -decay of $^{238}\text{Np}$ . JOUR ARISE 68 432   |
|                  | 2010V001 | NUCLEAR REACTIONS $^{59}\text{Co}(p, 2\gamma)$ , E=1.85 MeV; measured $E\gamma$ ; analyzed two-step $\gamma$ cascades populating 2+ state; deduced E1 and M1 $\gamma$ -strength functions. Comparison with other studies. JOUR PRVCA 81 024319   |
| $^{60}\text{Cu}$ | 2010AL19 | NUCLEAR REACTIONS $^{55}\text{Mn}(^{20}\text{Ne}, \text{X})^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ , E=51-164 MeV; measured reaction products recoils, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311                                   |

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**A=60 (continued)**

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| $^{60}\text{Zn}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |
|                  | 2010KA26 | RADIOACTIVITY $^{53}\text{Co}(\text{EC})$ , $^{53m}\text{Co}(\text{EC})$ , (p); deduced Q values and revised level schemes. $^{53}\text{Co}$ ; deduced energy of the high-spin isomer. $^{53}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}(\text{EC})$ ; deduced Q values from measured masses, electron capture probabilities, Logft values, and Gamow-Teller matrix elements. JOUR PRVCA 82 034311   |
|                  | 2010KA26 | NUCLEAR REACTIONS $^{54}\text{Fe}(p, X)^{53}\text{Co}$ / $^{53m}\text{Co}$ / $^{56}\text{Ni}$ / $^{57}\text{Cu}$ / $^{58}\text{Cu}$ , E=40, 50 MeV; $^{54}\text{Fe}(^3\text{He}, X)^{55}\text{Ni}$ / $^{56}\text{Ni}$ / $^{59}\text{Zn}$ / $^{60}\text{Zn}$ , E=25 MeV; $\text{Ca}(^{20}\text{Ne}, X)^{56}\text{Co}$ / $^{57}\text{Ni}$ , E=75, 105 MeV; measured masses of product nuclides. $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$ ; deduced reaction Q value, proton resonance energies, rescaled proton widths, and reaction rates of astrophysical significance. JOUR PRVCA 82 034311  |
| $^{60}\text{Ga}$ | 2010KA26 | ATOMIC MASSES $^{56,57}\text{Fe}$ , $^{53,53m,56}\text{Co}$ , $^{55,56,57}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. $^{56,57}\text{Fe}$ , $^{53,53m,55,56}\text{Co}$ , $^{55,56,57,58}\text{Ni}$ , $^{57,58,59}\text{Cu}$ , $^{53,56,57}\text{Fe}$ , $^{59,60}\text{Zn}$ ; measured frequency ratio pairs. Comparison with previous mass measurements. $^{53,54}\text{Co}$ , $^{55,56}\text{Ni}$ , $^{57,58}\text{Cu}$ , $^{59,60}\text{Zn}$ ; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. $^{53}\text{Co}$ , $^{54,55,56}\text{Ni}$ , $^{56,57,58}\text{Cu}$ , $^{58,59,60}\text{Zn}$ , $^{60,61}\text{Ga}$ ; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |

**A=61**

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| $^{61}\text{Mn}$ | 2009VA16 | NUCLEAR REACTIONS $^{109}\text{Ag}(^{61}\text{Mn}, ^{61}\text{Mn}')$ , ( $^{61}\text{Fe}, ^{61}\text{Fe}'$ ), E=2.87 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ following Coulomb excitation at the REX-ISOLDE facility and in-trap decay. $^{61}\text{Mn}$ , $^{61}\text{Fe}$ ; deduced levels $T_{1/2}$ , B(E2), B(M1). Comparison with large-scale shell model calculations. JOUR ZAANE 42 401                                    |
| $^{61}\text{Fe}$ | 2009D0ZZ | NUCLEAR REACTIONS $^{60}\text{Fe}(n, \gamma)$ , E $\approx$ 25 keV; $^{62}\text{Ni}(n, \gamma)$ , E $\approx$ 25 keV; $^{64}\text{Ni}(n, \gamma)$ , E $\approx$ 52 keV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ , $\Gamma_n$ / $\Gamma_\gamma$ versus resonance energy. Compared ENDF / B-VII.0, JEFF 3.1, JENDL 3.3, BROND 2.2. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P230,Domingo-Pardo |
|                  | 2009VA16 | NUCLEAR REACTIONS $^{109}\text{Ag}(^{61}\text{Mn}, ^{61}\text{Mn}')$ , ( $^{61}\text{Fe}, ^{61}\text{Fe}'$ ), E=2.87 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ following Coulomb excitation at the REX-ISOLDE facility and in-trap decay. $^{61}\text{Mn}$ , $^{61}\text{Fe}$ ; deduced levels $T_{1/2}$ , B(E2), B(M1). Comparison with large-scale shell model calculations. JOUR ZAANE 42 401                                    |



KEYNUMBERS AND KEYWORDS

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**A=61 (continued)**

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| 2010FE01         | ATOMIC MASSES     | <sup>63,64,65,65m,66</sup> Fe, <sup>64,65,66,67,67m</sup> Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup> Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318   |
| <sup>61</sup> Cu | 2008MEZV          | NUCLEAR REACTIONS <sup>209</sup> Bi( $\alpha$ , x), E=28.8, 32.8 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ; <sup>186</sup> W(p, n), E=7-15 MeV; deduced $\sigma$ ; calculated $\sigma$ ; Zn(d, x) <sup>61</sup> Cu, E $\approx$ 3-19 MeV; Zn(d, x) <sup>64</sup> Cu, E $\approx$ 3-19 MeV; Zn(d, x) <sup>66</sup> Ga, E $\approx$ 3-19 MeV; Zn(d, x) <sup>67</sup> Ga, E $\approx$ 3-19 MeV; Zn(d, x) <sup>65</sup> Zn, E $\approx$ 3-19 MeV; Zn(d, x) <sup>69</sup> Zn, E $\approx$ 3-19 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields; <sup>103</sup> Rh(d, 2n), E $\approx$ 3-20 MeV; <sup>232</sup> Th(p, 3n), E $\approx$ 13-31 MeV; calculated $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403                                     |
| 2010AL19         | NUCLEAR REACTIONS | <sup>55</sup> Mn( <sup>20</sup> Ne, X) <sup>70</sup> Se / <sup>70</sup> As / <sup>71</sup> As / <sup>72</sup> As / <sup>66</sup> Ge / <sup>67</sup> Ge / <sup>69</sup> Ge / <sup>65</sup> Ga / <sup>66</sup> Ga / <sup>67</sup> Ga / <sup>63</sup> Zn / <sup>60</sup> Cu / <sup>61</sup> Cu, E=51-164 MeV; measured reaction products recoils, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , angular momentum. Comparison with statistical code PACE-2. JOUR JPGPE 37 115101  |
| <sup>61</sup> Ga | 2010KA26          | ATOMIC MASSES <sup>56,57</sup> Fe, <sup>53,53m,56</sup> Co, <sup>55,56,57</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; measured cyclotron resonance frequencies and ratios by JYFLTRAP Penning trap spectrometer; deduced mass excesses. <sup>56,57</sup> Fe, <sup>53,53m,55,56</sup> Co, <sup>55,56,57,58</sup> Ni, <sup>57,58,59</sup> Cu, <sup>53,56,57</sup> Fe, <sup>59,60</sup> Zn; measured frequency ratio pairs. Comparison with previous mass measurements. <sup>53,54</sup> Co, <sup>55,56</sup> Ni, <sup>57,58</sup> Cu, <sup>59,60</sup> Zn; deduced Coulomb displacement energies for the T=1 / 2 doublets and T=1 triplets. <sup>53</sup> Co, <sup>54,55,56</sup> Ni, <sup>56,57,58</sup> Cu, <sup>58,59,60</sup> Zn, <sup>60,61</sup> Ga; deduced S(p) values. Comparison of all the deduced values with AME-2003. JOUR PRVCA 82 034311 |

**A=62**

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| <sup>62</sup> Cr | 2010GA06 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>62</sup> Fe, <sup>62</sup> Fe'), E=73.0 MeV / nucleon [ <sup>62</sup> Fe secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon], <sup>9</sup> Be( <sup>64</sup> Fe, <sup>64</sup> Fe'), E=67.5 MeV / nucleon [ <sup>64</sup> Fe secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon], <sup>9</sup> Be( <sup>66</sup> Fe, <sup>66</sup> Fe'), E=82.6 MeV / nucleon [ <sup>66</sup> Fe secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon], <sup>9</sup> Be( <sup>60</sup> Cr, <sup>60</sup> Cr'), E=80.6 MeV / nucleon [ <sup>60</sup> Cr secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon], <sup>9</sup> Be( <sup>62</sup> Cr, <sup>62</sup> Cr'), E=74.6 MeV / nucleon [ <sup>62</sup> Cr secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon], <sup>9</sup> Be( <sup>64</sup> Cr, <sup>64</sup> Cr'), E=87.0 MeV / nucleon [ <sup>64</sup> Cr secondary beam from primary reaction <sup>9</sup> Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, $\sigma$ . <sup>62,64,66</sup> Fe, <sup>60,62,64</sup> Cr; deduced levels, J, $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup> Be( <sup>76</sup> Ge, X) <sup>62</sup> Fe / <sup>64</sup> Fe / <sup>66</sup> Fe / <sup>60</sup> Cr / <sup>62</sup> Cr / <sup>64</sup> Cr / <sup>65</sup> Mn / <sup>66</sup> Mn / <sup>67</sup> Fe / <sup>69</sup> Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304 |
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KEYNUMBERS AND KEYWORDS

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**A=62 (continued)**

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| $^{62}\text{Mn}$ | 2010DA06 | NUCLEAR REACTIONS Ni( $^{86}\text{Kr}$ , X), E=60.5 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (fragment) $\gamma$ -coin, and $\gamma(t)$ . Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. $^{50}\text{K}$ , $^{60}\text{V}$ , $^{62,64}\text{Mn}$ , $^{65,67}\text{Fe}$ , $^{68,70}\text{Co}$ , $^{75}\text{Cu}$ , $^{78}\text{Zn}$ , $^{78}\text{Ga}$ ; deduced isomers, half-lives, J, $\pi$ , multiplicities. $^{69,71,73}\text{Cu}$ ; deduced B(M1), B(E2) values. $^{75}\text{Cu}$ ; deduced levels, J, $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-states. JOUR PRVCA 81 034304   |
|                  | 2010H013 | RADIOACTIVITY $^{60,62}\text{Mn}(\beta^-)$ [from $^{238}\text{U}(\text{}^{64}\text{Ni}$ , X), E=430 MEV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{60,62}\text{Fe}$ ; deduced levels, J, $\pi$ , multiplicity. JOUR PRVCA 82 044305   |
| $^{62}\text{Fe}$ | 2010GA06 | NUCLEAR REACTIONS $^9\text{Be}(\text{}^{62}\text{Fe}$ , $^{62}\text{Fe}'$ ), E=73.0 MeV / nucleon [ $^{62}\text{Fe}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon], $^9\text{Be}(\text{}^{64}\text{Fe}$ , $^{64}\text{Fe}'$ ), E=67.5 MeV / nucleon [ $^{64}\text{Fe}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon], $^9\text{Be}(\text{}^{66}\text{Fe}$ , $^{66}\text{Fe}'$ ), E=82.6 MeV / nucleon [ $^{66}\text{Fe}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon], $^9\text{Be}(\text{}^{60}\text{Cr}$ , $^{60}\text{Cr}'$ ), E=80.6 MeV / nucleon [ $^{60}\text{Cr}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon], $^9\text{Be}(\text{}^{62}\text{Cr}$ , $^{62}\text{Cr}'$ ), E=74.6 MeV / nucleon [ $^{62}\text{Cr}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon], $^9\text{Be}(\text{}^{64}\text{Cr}$ , $^{64}\text{Cr}'$ ), E=87.0 MeV / nucleon [ $^{64}\text{Cr}$ secondary beam from primary reaction $^9\text{Be}(\text{}^{76}\text{Ge}$ , X), E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin, $\sigma$ . $^{62,64,66}\text{Fe}$ , $^{60,62,64}\text{Cr}$ ; deduced levels, J, $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. $^9\text{Be}(\text{}^{76}\text{Ge}$ , X) $^{62}\text{Fe}$ / $^{64}\text{Fe}$ / $^{66}\text{Fe}$ / $^{60}\text{Cr}$ / $^{62}\text{Cr}$ / $^{64}\text{Cr}$ / $^{65}\text{Mn}$ / $^{66}\text{Mn}$ / $^{67}\text{Fe}$ / $^{69}\text{Co}$ , E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304 |
|                  | 2010H013 | NUCLEAR REACTIONS $^{238}\text{U}(\text{}^{64}\text{Ni}$ , X), E=430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , prompt and delayed $\gamma$ spectra using Gammasphere array. $^{60,62}\text{Fe}$ ; deduced levels, J, $\pi$ , multiplicity, yrast levels. Comparison with shell model calculations. Level systematics of $^{54,56,58,60,62,64}\text{Fe}$ nuclei. JOUR PRVCA 82 044305  |
|                  | 2010H013 | RADIOACTIVITY $^{60,62}\text{Mn}(\beta^-)$ [from $^{238}\text{U}(\text{}^{64}\text{Ni}$ , X), E=430 MEV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{60,62}\text{Fe}$ ; deduced levels, J, $\pi$ , multiplicity. JOUR PRVCA 82 044305   |
|                  | 2010LJ01 | NUCLEAR REACTIONS $^{64}\text{Ni}(\text{}^{238}\text{U}$ , X), E=6.5 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (recoil) $\gamma$ -coin, $\gamma(\theta)$ , half-lives of first 2+ states by RDDS method using the Exogam array. $^{62,64}\text{Fe}$ ; deduced B(E2). Z=24-30, N=32-42; systematics of energies and B(E2) of first 2+ states in even-even nuclei. Comparison with large-scale shell-model and Hartree-Fock-Bogolyubov based configuration-mixing calculations using the Gogny D1S interaction. New Island of inversion. JOUR PRVCA 81 061301  |
| $^{62}\text{Zn}$ | 2008FIZX | RADIOACTIVITY $^{62}\text{Ga}(\beta^+)$ ; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin; deduced levels, J, $\pi$ , $\delta$ , ft. Results on CD only. CONF E.Lansing (NS2008),P103,Finlay  |

KEYNUMBERS AND KEYWORDS

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**A=62 (continued)**

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|                  | 2008GRZO | RADIOACTIVITY $^{62}\text{Ga}(\beta^+)$ ; measured $E\beta$ , $I\beta(t)$ , $\beta\gamma$ -coin; deduced $T_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P109,Grinyer  |
|                  | 2009ALZV | NUCLEAR REACTIONS $^{61}\text{Ni}({}^3\text{He}, 2n\gamma)$ , $E=14$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $^{62}\text{Zn}$ level scheme, M1 and E2 transition strengths; calculated $E$ , $J$ , $\pi$ using IBM-2 within U(5). HORUS-cube spectrometer, mixed-symmetry states. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P399,Albers  |
|                  | 2009GE14 | NUCLEAR REACTIONS $^{28}\text{Si}({}^{36}\text{Ar}, 2p)$ , $E=140$ MeV; $^{40}\text{Ca}({}^{28}\text{Si}, 2p\alpha)$ , $E=122$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, DCO using Gammasphere array. $^{62}\text{Zn}$ ; deduced levels, $J$ , $\pi$ , moment of inertia, configurations. Comparison with cranked Nilsson-Strutinsky calculations. JOUR PRVCA 80 051304  |
|                  | 2010LE13 | NUCLEAR REACTIONS $\text{Mo}(p, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , $E=8.4\text{-}37.1$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced yields, $\sigma$ . JOUR ARISE 68 2355  |
|                  | 2010M014 | NUCLEAR REACTIONS $^{12}\text{C}({}^{68}\text{Zn}, {}^{68}\text{Zn}')$ , $E=180$ MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma(\theta, H)$ , precession angles in transient fields. $^{68}\text{Zn}$ ; deduced $g$ factors. Coulomb excitation. $^{62,64,66,70}\text{Zn}$ ; reanalyzed $g$ factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301  |
|                  | 2010M014 | NUCLEAR MOMENTS $^{68}\text{Zn}$ ; measured $g$ factors by (particle) $\gamma(\theta, H)$ in transient fields. $^{62,64,66,70}\text{Zn}$ ; reanalyzed $g$ factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301  |
|                  | 2010SZ03 | NUCLEAR REACTIONS $^{192}\text{Os}(p, n)$ , $(p, 3n)$ , $(p, 4n)$ , $(p, 5n)$ , $(p, 6n)$ , $\text{Cu}(p, n)^{65}\text{Zn}$ , $\text{Al}(p, X)^{24}\text{Na}$ , $\text{Cu}(p, X)^{62}\text{Zn}$ $E < 66$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306  |
| $^{62}\text{Ga}$ | 2008FIZX | RADIOACTIVITY $^{62}\text{Ga}(\beta^+)$ ; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin; deduced levels, $J$ , $\pi$ , $\delta$ , ft. Results on CD only. CONF E.Lansing (NS2008),P103,Finlay   |
|                  | 2008GRZO | RADIOACTIVITY $^{62}\text{Ga}(\beta^+)$ ; measured $E\beta$ , $I\beta(t)$ , $\beta\gamma$ -coin; deduced $T_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P109,Grinyer  |
|                  | 2008SVZX | RADIOACTIVITY $^{62}\text{Ga}$ ; measured $I\beta$ , $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft, branching ratio; calculated isospin symmetry breaking using shell model; $^{26}\text{Na}(\beta^-)$ ; measured $I\beta(t)$ , $I\gamma(t)$ ; deduced $T_{1/2}$ ; $^{18}\text{Ne}$ ; measured $E\gamma$ , $I\gamma$ , $I\beta(t)$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ ; $^{38}\text{K}$ ; measured $I\beta(t)$ ; deduced isomer decay, $T_{1/2}$ , M3 branching ratio, log ft; $^{74}\text{Rb}$ ; measured decay products; deduced $T_{1/2}$ , branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008),P19,Svensson |
| $^{62}\text{Ge}$ | 2008GOZP | RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $^{54}\text{Ni}$ $T_{1/2}$ , GT distribution strength; $^{62}\text{Ge}$ ; $^{113}\text{In}$ ; $^{190}\text{Ta}$ ; measured decay products. Results on CD only. CONF E.Lansing (NS2008),P9,Gorska  |

## A=63

- <sup>63</sup>Mn 2009MAZL RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ )[from U(p, f), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>63</sup>Fe E, J,  $\pi$ , isomer decay, T<sub>1/2</sub>, B(M1); <sup>122</sup>In( $\beta^-$ )[from <sup>238</sup>U(p, f), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>122</sup>Sn E, J,  $\pi$ , T<sub>1/2</sub>, B(E2), ground-state multiplet. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P502,Mach
- <sup>63</sup>Fe 2008KWZZ NUCLEAR REACTIONS He(<sup>63</sup>Fe, X), (<sup>64</sup>Co, X), E=86 MeV / nucleon; measured I $\gamma$ (t), E $\gamma$ , A / Q, ToF. <sup>63,64,65,65m</sup>Fe, <sup>64,65,66</sup>Co deduced mass excess. <sup>65</sup>Fe deduced levels, J,  $\pi$ , isomer decay, T<sub>1/2</sub>. Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2009MAZL RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ )[from U(p, f), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>63</sup>Fe E, J,  $\pi$ , isomer decay, T<sub>1/2</sub>, B(M1); <sup>122</sup>In( $\beta^-$ )[from <sup>238</sup>U(p, f), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>122</sup>Sn E, J,  $\pi$ , T<sub>1/2</sub>, B(E2), ground-state multiplet. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P502,Mach
- 2010FE01 ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- <sup>63</sup>Ni 2009DOZZ NUCLEAR REACTIONS <sup>60</sup>Fe(n,  $\gamma$ ), E $\approx$ 25 keV; <sup>62</sup>Ni(n,  $\gamma$ ), E $\approx$ 25 keV; <sup>64</sup>Ni(n,  $\gamma$ ), E $\approx$ 52 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ ,  $\Gamma_n$  /  $\Gamma_\gamma$  versus resonance energy. Compared ENDF / B-VII.0, JEFF 3.1, JENDL 3.3, BROND 2.2. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P230,Domingo-Pardo
- 2009OSZZ NUCLEAR REACTIONS <sup>62</sup>Ni(n,  $\gamma$ ), E=low; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced level properties: E, decay scheme. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P386,Oshima
- 2010QI02 NUCLEAR REACTIONS <sup>1,2</sup>H, <sup>12</sup>C, <sup>27</sup>Al, <sup>63</sup>Cu, <sup>197</sup>Au(e, e' $\pi^+$ ), E<5.8 GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus Q<sup>2</sup>. JOUR PRVCA 81 055209
- <sup>63</sup>Cu 2009COZX NUCLEAR MOMENTS <sup>57,58,59,63,65</sup>Cu; measured hyperfine structure using in-gas-cell laser spectroscopy technique at LISOL facility; deduced magnetic moments, hyperfine parameters and shell-model calculations using GXPF1 interaction. PREPRINT Cocolios,12/17/2009
- 2010C001 NUCLEAR MOMENTS <sup>57,58,59,63,65</sup>Cu; measured hyperfine spectra using in-gas-cell resonant ionization laser spectroscopy; deduced g-factors, isotope shifts, magnetic dipole moments, and configuration. Comparison with shell-model calculations using GXPF1 interaction. JOUR PRVCA 81 014314
- 2010DE09 NUCLEAR REACTIONS <sup>63,65</sup>Cu(e, e'), E=120, 150, 225 MeV; measured Ee, Ie; <sup>63,65</sup>Cu deduced level energies, multipolarities, B(E1), B(E2), B(E3). JOUR PANUE 73 395

**A=63 (continued)**

- <sup>63</sup>Zn      2008BEZI      NUCLEAR REACTIONS <sup>27</sup>Al(d, pα), E≈3-22 MeV; <sup>27</sup>Al(d, 2p), E≈3-20 MeV; <sup>27</sup>Al(d, p), E≈3-20 MeV; <sup>63,65</sup>Cu(d, 2n), E≈3-20 MeV; <sup>63</sup>Cu(d, p), E≈3-20 MeV; <sup>65</sup>Cu(d, 2p), E≈3-20 MeV; <sup>65</sup>Cu(d, 3p), E≈3-20 MeV; measured E<sub>γ</sub>, I<sub>γ</sub>(t); deduced σ, T<sub>1/2</sub>. Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
- 2008OCZZ      NUCLEAR REACTIONS <sup>27</sup>Al(d, x)<sup>24</sup>Na, <sup>51</sup>V(d, 4n), Fe(d, x)<sup>54</sup>Mn, Fe(d, x)<sup>56</sup>Co, Ni(d, x)<sup>57</sup>Co, Cu(d, x)<sup>63</sup>Zn, Ta(d, x)<sup>180</sup>Ta, W(d, x)<sup>182</sup>Re, <sup>197</sup>Au(d, x)<sup>194</sup>Au, E=25, 35, 41, 50 MeV; Cr(d, x)<sup>48</sup>V, Cr(d, x)<sup>52</sup>Mn, <sup>55</sup>Mn(d, x)<sup>54</sup>Mn, Ni(d, x)<sup>56</sup>Co, E=39.5 MeV; measured E<sub>γ</sub>, I<sub>γ</sub>; deduced σ; calculated σ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011
- 2010AL19      NUCLEAR REACTIONS <sup>55</sup>Mn(<sup>20</sup>Ne, X)<sup>70</sup>Se / <sup>70</sup>As / <sup>71</sup>As / <sup>72</sup>As / <sup>66</sup>Ge / <sup>67</sup>Ge / <sup>69</sup>Ge / <sup>65</sup>Ga / <sup>66</sup>Ga / <sup>67</sup>Ga / <sup>63</sup>Zn / <sup>60</sup>Cu / <sup>61</sup>Cu, E=51-164 MeV; measured reaction products recoils, E<sub>γ</sub>, I<sub>γ</sub>; deduced σ, angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101
- 2010LE13      NUCLEAR REACTIONS Mo(p, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>95</sup>Tc / <sup>96</sup>Tc / <sup>99</sup>Tc / <sup>90</sup>Mo / <sup>93</sup>Mo / <sup>99</sup>Mo / <sup>90</sup>Nb / <sup>92</sup>Nb / <sup>95</sup>Nb / <sup>96</sup>Nb / <sup>89</sup>Zr / <sup>62</sup>Zn / <sup>63</sup>Zn / <sup>65</sup>Zn, E=8.4-37.1 MeV; measured reaction products, E<sub>γ</sub>, I<sub>γ</sub>; deduced yields, σ. JOUR ARISE 68 2355

**A=64**

- <sup>64</sup>Cr      2010GA06      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>62</sup>Fe, <sup>62</sup>Fe'), E=73.0 MeV / nucleon [<sup>62</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Fe, <sup>64</sup>Fe'), E=67.5 MeV / nucleon [<sup>64</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>66</sup>Fe, <sup>66</sup>Fe'), E=82.6 MeV / nucleon [<sup>66</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=80.6 MeV / nucleon [<sup>60</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=74.6 MeV / nucleon [<sup>62</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Cr, <sup>64</sup>Cr'), E=87.0 MeV / nucleon [<sup>64</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E<sub>γ</sub>, I<sub>γ</sub>, (particle)γ-coin, σ. <sup>62,64,66</sup>Fe, <sup>60,62,64</sup>Cr; deduced levels, J, π. Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>62</sup>Fe / <sup>64</sup>Fe / <sup>66</sup>Fe / <sup>60</sup>Cr / <sup>62</sup>Cr / <sup>64</sup>Cr / <sup>65</sup>Mn / <sup>66</sup>Mn / <sup>67</sup>Fe / <sup>69</sup>Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304

A=64 (*continued*)

- <sup>64</sup>Mn      2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multiplicities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- <sup>64</sup>Fe      2008KRZV      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, n)<sup>55</sup>Ti, E=high; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; <sup>122,124,126</sup>Cd, <sup>138,140,142,144</sup>Xe( $\gamma$ ,  $\gamma'$ ); measured Coulomb excitation E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- 2008KWZZ      NUCLEAR REACTIONS He(<sup>63</sup>Fe, X), (<sup>64</sup>Co, X), E=86 MeV / nucleon; measured I $\gamma$ (t), E $\gamma$ , A / Q, ToF. <sup>63,64,65,65m</sup>Fe, <sup>64,65,66</sup>Co deduced mass excess. <sup>65</sup>Fe deduced levels, J,  $\pi$ , isomer decay, T<sub>1/2</sub>. Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2010FE01      ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- 2010GA06      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>62</sup>Fe, <sup>62</sup>Fe'), E=73.0 MeV / nucleon [<sup>62</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Fe, <sup>64</sup>Fe'), E=67.5 MeV / nucleon [<sup>64</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>66</sup>Fe, <sup>66</sup>Fe'), E=82.6 MeV / nucleon [<sup>66</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=80.6 MeV / nucleon [<sup>60</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=74.6 MeV / nucleon [<sup>62</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Cr, <sup>64</sup>Cr'), E=87.0 MeV / nucleon [<sup>64</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ . <sup>62,64,66</sup>Fe, <sup>60,62,64</sup>Cr; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>62</sup>Fe / <sup>64</sup>Fe / <sup>66</sup>Fe / <sup>60</sup>Cr / <sup>62</sup>Cr / <sup>64</sup>Cr / <sup>65</sup>Mn / <sup>66</sup>Mn / <sup>67</sup>Fe / <sup>69</sup>Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304

## A=64 (continued)

- 2010LJ01 NUCLEAR REACTIONS  $^{64}\text{Ni}(^{238}\text{U}, \text{X})$ ,  $E=6.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (recoil) $\gamma$ -coin,  $\gamma(\theta)$ , half-lives of first 2+ states by RDDS method using the Exogam array.  $^{62,64}\text{Fe}$ ; deduced  $B(E2)$ .  $Z=24-30$ ,  $N=32-42$ ; systematics of energies and  $B(E2)$  of first 2+ states in even-even nuclei. Comparison with large-scale shell-model and Hartree-Fock-Bogolyubov based configuration-mixing calculations using the Gogny D1S interaction. New Island of inversion. JOUR PRVCA 81 061301
- $^{64}\text{Co}$  2008BEZI NUCLEAR REACTIONS  $^{27}\text{Al}(d, p\alpha)$ ,  $E\approx 3-22$  MeV;  $^{27}\text{Al}(d, 2p)$ ,  $E\approx 3-20$  MeV;  $^{27}\text{Al}(d, p)$ ,  $E\approx 3-20$  MeV;  $^{63,65}\text{Cu}(d, 2n)$ ,  $E\approx 3-20$  MeV;  $^{63}\text{Cu}(d, p)$ ,  $E\approx 3-20$  MeV;  $^{65}\text{Cu}(d, 2p)$ ,  $E\approx 3-20$  MeV;  $^{65}\text{Cu}(d, 3p)$ ,  $E\approx 3-20$  MeV; measured  $E\gamma$ ,  $I\gamma(t)$ ; deduced  $\sigma$ ,  $T_{1/2}$ . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
- 2008KWZZ NUCLEAR REACTIONS  $\text{He}(^{63}\text{Fe}, \text{X})$ , ( $^{64}\text{Co}, \text{X})$ ,  $E=86$  MeV / nucleon; measured  $I\gamma(t)$ ,  $E\gamma$ ,  $A / Q$ , ToF.  $^{63,64,65,65m}\text{Fe}$ ,  $^{64,65,66}\text{Co}$  deduced mass excess.  $^{65}\text{Fe}$  deduced levels,  $J$ ,  $\pi$ , isomer decay,  $T_{1/2}$ . Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2010FE01 ATOMIC MASSES  $^{63,64,65,65m,66}\text{Fe}$ ,  $^{64,65,66,67,67m}\text{Co}$ ; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation.  $^{61,63,65,67}\text{Fe}$ ; systematics of low-lying levels.  $Z=24-31$ ,  $N=35-44$ ; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- $^{64}\text{Ni}$  2010ZH28 NUCLEAR REACTIONS  $^{67}\text{Zn}(n, \alpha)$ ,  $E=6.0$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\sigma$ . Comparison with other data and TALYS calculation. JOUR ZAANE 43 1
- $^{64}\text{Cu}$  2008BEZI NUCLEAR REACTIONS  $^{27}\text{Al}(d, p\alpha)$ ,  $E\approx 3-22$  MeV;  $^{27}\text{Al}(d, 2p)$ ,  $E\approx 3-20$  MeV;  $^{27}\text{Al}(d, p)$ ,  $E\approx 3-20$  MeV;  $^{63,65}\text{Cu}(d, 2n)$ ,  $E\approx 3-20$  MeV;  $^{63}\text{Cu}(d, p)$ ,  $E\approx 3-20$  MeV;  $^{65}\text{Cu}(d, 2p)$ ,  $E\approx 3-20$  MeV;  $^{65}\text{Cu}(d, 3p)$ ,  $E\approx 3-20$  MeV; measured  $E\gamma$ ,  $I\gamma(t)$ ; deduced  $\sigma$ ,  $T_{1/2}$ . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
- 2008HIZO NUCLEAR REACTIONS  $^{64}\text{Zn}(t, ^3\text{He})$ ,  $E=115$  MeV / nucleon; measured  $\sigma(\theta, E)$ .  $^{64}\text{Cu}$  deduced GT strength;  $^{58}\text{Ni}$  to  $^{58}\text{Co}$  electron capture rate. Results on CD only. CONF E.Lansing (NS2008),P113,Hitt
- 2008MEZV NUCLEAR REACTIONS  $^{209}\text{Bi}(\alpha, x)$ ,  $E=28.8, 32.8$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ;  $^{186}\text{W}(p, n)$ ,  $E=7-15$  MeV; deduced  $\sigma$ ; calculated  $\sigma$ ;  $\text{Zn}(d, x)^{61}\text{Cu}$ ,  $E\approx 3-19$  MeV;  $\text{Zn}(d, x)^{64}\text{Cu}$ ,  $E\approx 3-19$  MeV;  $\text{Zn}(d, x)^{66}\text{Ga}$ ,  $E\approx 3-19$  MeV;  $\text{Zn}(d, x)^{67}\text{Ga}$ ,  $E\approx 3-19$  MeV;  $\text{Zn}(d, x)^{65}\text{Zn}$ ,  $E\approx 3-19$  MeV;  $\text{Zn}(d, x)^{69}\text{Zn}$ ,  $E\approx 3-19$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced thin target yields;  $^{103}\text{Rh}(d, 2n)$ ,  $E\approx 3-20$  MeV;  $^{232}\text{Th}(p, 3n)$ ,  $E\approx 13-31$  MeV; calculated  $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403

A=64 (continued)

- 2010GA21 NUCLEAR REACTIONS  $^{237}\text{Np}(\gamma, \text{F})^{135}\text{Cs}$ ,  $^{238}\text{U}(\gamma, \text{F})^{140}\text{La}$ ,  $^{65}\text{Cu}(\gamma, \text{n})^{64}\text{Cu}$ , E<25 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced isomer yield ratios. Comparison with calculation. JOUR PANUE 73 1477
- $^{64}\text{Zn}$  2009EK01 NUCLEAR REACTIONS  $^{109}\text{Ag}(^{100}\text{Cd}, ^{100}\text{Cd}')$ , E=287.0 MeV;  $^{64}\text{Zn}$ ,  $^{109}\text{Ag}(^{102}\text{Cd}, ^{102}\text{Cd}')$ , E=292.7 MeV;  $^{64}\text{Zn}$ ,  $^{109}\text{Ag}(^{104}\text{Cd}, ^{104}\text{Cd}')$ , E=298.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ (particle)-coin, and  $\gamma$ -ray yields using REX-ISOLDE facility.  $^{64}\text{Zn}$ ,  $^{100,102,104}\text{Cd}$ ,  $^{109}\text{Ag}$ ; deduced levels, J,  $\pi$ , E2 matrix elements, electric quadrupole moments. Comparison with shell model calculations. JOUR PRVCA 80 054302
- 2009ZA09 NUCLEAR REACTIONS  $^{64}\text{Zn}(^6\text{Li}, ^6\text{Li})$ , E=12.0, 13.0, 13.8, 15.0, 16.5, 18.0, 20.0, 22.0 MeV; measured  $^6\text{Li}$  spectra,  $\sigma$ , and  $\sigma(\theta)$ . Optical model analysis. JOUR PRVCA 80 064610
- 2010DI08 NUCLEAR REACTIONS  $^{64}\text{Zn}(^9\text{Be}, ^9\text{Be})$ , ( $^{10}\text{Be}, ^{10}\text{Be}$ ), ( $^{11}\text{Be}, ^{11}\text{Be}$ ), E(cm)=24.5 MeV; measured reaction products; deduced elastic scattering, transfer or breakup  $\sigma(\theta)$ ,  $\sigma$ , halo features of  $^{11}\text{Be}$ . Optical model calculations. JOUR PRLTA 105 022701
- 2010DI10 NUCLEAR REACTIONS  $^{64}\text{Zn}(^9\text{Be}, ^9\text{Be})$ , ( $^{10}\text{Be}, ^{10}\text{Be}$ ), ( $^{11}\text{Be}, ^{11}\text{Be}$ ), E(cm)=25.4 MeV; measured halo nuclei  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$ .  $^{64}\text{Zn}(^6\text{Li}, ^6\text{Li})$ , E(cm)=10-40 MeV; measured halo nuclei fusion  $\sigma$ ; calculated  $\sigma$ .  $^{64}\text{Zn}(^7\text{Li}, ^7\text{Li})$ , E=cyclotron;  $^{64}\text{Zn}(^9\text{Be}, ^9\text{Be})$ , E=cyclotron; deduced reaction mechanism features. Optical model with double folding potential. Discussed threshold anomaly, reaction mechanism. JOUR NUPAB 834 408c
- 2010M014 NUCLEAR REACTIONS  $^{12}\text{C}(^{68}\text{Zn}, ^{68}\text{Zn}')$ , E=180 MeV; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma(\theta, \text{H})$ , precession angles in transient fields.  $^{68}\text{Zn}$ ; deduced g factors. Coulomb excitation.  $^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
- 2010M014 NUCLEAR MOMENTS  $^{68}\text{Zn}$ ; measured g factors by (particle) $\gamma(\theta, \text{H})$  in transient fields.  $^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
- 2010SC12 NUCLEAR REACTIONS  $^{64}\text{Zn}(^9\text{Be}, ^9\text{Be})$ , ( $^{10}\text{Be}, ^{10}\text{Be}$ ), ( $^{11}\text{Be}, ^{11}\text{Be}$ ), E=29.4, 29.8 MeV; measured reaction products; deduced elastic scattering  $\sigma$ ,  $\sigma(\theta)$ , halo nuclei. JOUR IMPEE 19 1236
- 2010ZU02 RADIOACTIVITY  $^{106,114,116}\text{Cd}$ ,  $^{120,128,130}\text{Te}$ ,  $^{64}\text{Zn}(2\beta)$ ; measured Ee, Ie; deduced T $_{1/2}$ . JOUR PPNPD 64 267
- $^{64}\text{Ga}$  2008SAZF RADIOACTIVITY  $^{64}\text{Ge}$ ,  $^{68}\text{Se}(\text{EC})$ ; measured T $_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P172,Savory
- $^{64}\text{Ge}$  2008SAZF RADIOACTIVITY  $^{64}\text{Ge}$ ,  $^{68}\text{Se}(\text{EC})$ ; measured T $_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P172,Savory



## A=65

- <sup>65</sup>Mn      2010GA06      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>62</sup>Fe, <sup>62</sup>Fe'), E=73.0 MeV / nucleon [<sup>62</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Fe, <sup>64</sup>Fe'), E=67.5 MeV / nucleon [<sup>64</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>66</sup>Fe, <sup>66</sup>Fe'), E=82.6 MeV / nucleon [<sup>66</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=80.6 MeV / nucleon [<sup>60</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=74.6 MeV / nucleon [<sup>62</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Cr, <sup>64</sup>Cr'), E=87.0 MeV / nucleon [<sup>64</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ . <sup>62,64,66</sup>Fe, <sup>60,62,64</sup>Cr; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>62</sup>Fe / <sup>64</sup>Fe / <sup>66</sup>Fe / <sup>60</sup>Cr / <sup>62</sup>Cr / <sup>64</sup>Cr / <sup>65</sup>Mn / <sup>66</sup>Mn / <sup>67</sup>Fe / <sup>69</sup>Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- <sup>65</sup>Fe      2008KWZZ      NUCLEAR REACTIONS He(<sup>63</sup>Fe, X), (<sup>64</sup>Co, X), E=86 MeV / nucleon; measured I $\gamma$ (t), E $\gamma$ , A / Q, ToF. <sup>63,64,65,65m</sup>Fe, <sup>64,65,66</sup>Co deduced mass excess. <sup>65</sup>Fe deduced levels, J,  $\pi$ , isomer decay, T<sub>1/2</sub>. Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multiplicities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- 2010FE01      ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- <sup>65</sup>Co      2008KWZZ      NUCLEAR REACTIONS He(<sup>63</sup>Fe, X), (<sup>64</sup>Co, X), E=86 MeV / nucleon; measured I $\gamma$ (t), E $\gamma$ , A / Q, ToF. <sup>63,64,65,65m</sup>Fe, <sup>64,65,66</sup>Co deduced mass excess. <sup>65</sup>Fe deduced levels, J,  $\pi$ , isomer decay, T<sub>1/2</sub>. Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2010FE01      ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318

KEYNUMBERS AND KEYWORDS

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**A=65 (continued)**

<sup>65</sup> Ni	2008BEZI	NUCLEAR REACTIONS <sup>27</sup> Al(d, pα), E≈3-22 MeV; <sup>27</sup> Al(d, 2p), E≈3-20 MeV; <sup>27</sup> Al(d, p), E≈3-20 MeV; <sup>63,65</sup> Cu(d, 2n), E≈3-20 MeV; <sup>63</sup> Cu(d, p), E≈3-20 MeV; <sup>65</sup> Cu(d, 2p), E≈3-20 MeV; <sup>65</sup> Cu(d, 3p), E≈3-20 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> (t); deduced σ, T <sub>1/2</sub> . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
	2009DOZZ	NUCLEAR REACTIONS <sup>60</sup> Fe(n, γ), E≈25 keV; <sup>62</sup> Ni(n, γ), E≈25 keV; <sup>64</sup> Ni(n, γ), E≈52 keV; measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin.; deduced σ, Γ <sub>n</sub> / Γ <sub>γ</sub> versus resonance energy. Compared ENDF / B-VII.0, JEFF 3.1, JENDL 3.3, BROND 2.2. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P230,Domingo-Pardo
<sup>65</sup> Cu	2009COZX	NUCLEAR MOMENTS <sup>57,58,59,63,65</sup> Cu; measured hyperfine structure using in-gas-cell laser spectroscopy technique at LISOL facility; deduced magnetic moments, hyperfine parameters and shell-model calculations using GXPF1 interaction. PREPRINT Cocolios,12/17/2009
	2010C001	NUCLEAR MOMENTS <sup>57,58,59,63,65</sup> Cu; measured hyperfine spectra using in-gas-cell resonant ionization laser spectroscopy; deduced g-factors, isotope shifts, magnetic dipole moments, and configuration. Comparison with shell-model calculations using GXPF1 interaction. JOUR PRVCA 81 014314
	2010DE09	NUCLEAR REACTIONS <sup>63,65</sup> Cu(e, e'), E=120, 150, 225 MeV; measured E <sub>e</sub> , I <sub>e</sub> ; <sup>63,65</sup> Cu deduced level energies, multipolarities, B(E1), B(E2), B(E3). JOUR PANUE 73 395
	2010LE19	NUCLEAR REACTIONS <sup>65</sup> Cu( <sup>8</sup> He, X) <sup>65</sup> Cu / <sup>66</sup> Cu / <sup>67</sup> Cu / <sup>68</sup> Zn / <sup>69</sup> Zn / <sup>68</sup> Ga / <sup>69</sup> Ga / <sup>70</sup> Ga, [ <sup>8</sup> He secondary beam from C( <sup>13</sup> C, X), E=75 MeV / nucleon primary reaction], E=19.9, 30.6 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , neutron spectra, (particle)γ-, (particle)nγ-, γγ-coin, residue σ for fusion and neutron transfer, σ(θ) for <sup>4</sup> He, <sup>6</sup> He and <sup>8</sup> He using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
<sup>65</sup> Zn	2008BEZI	NUCLEAR REACTIONS <sup>27</sup> Al(d, pα), E≈3-22 MeV; <sup>27</sup> Al(d, 2p), E≈3-20 MeV; <sup>27</sup> Al(d, p), E≈3-20 MeV; <sup>63,65</sup> Cu(d, 2n), E≈3-20 MeV; <sup>63</sup> Cu(d, p), E≈3-20 MeV; <sup>65</sup> Cu(d, 2p), E≈3-20 MeV; <sup>65</sup> Cu(d, 3p), E≈3-20 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> (t); deduced σ, T <sub>1/2</sub> . Compared to EXFOR data and Pade fit of Takacs. CONF Nice (Nucl Data for Sci and Technol) Proc,P1003
	2008MEZV	NUCLEAR REACTIONS <sup>209</sup> Bi(α, x), E=28.8, 32.8 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , E <sub>α</sub> , I <sub>α</sub> ; <sup>186</sup> W(p, n), E=7-15 MeV; deduced σ; calculated σ; Zn(d, x) <sup>61</sup> Cu, E≈3-19 MeV; Zn(d, x) <sup>64</sup> Cu, E≈3-19 MeV; Zn(d, x) <sup>66</sup> Ga, E≈3-19 MeV; Zn(d, x) <sup>67</sup> Ga, E≈3-19 MeV; Zn(d, x) <sup>65</sup> Zn, E≈3-19 MeV; Zn(d, x) <sup>69</sup> Zn, E≈3-19 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> ; deduced thin target yields; <sup>103</sup> Rh(d, 2n), E≈3-20 MeV; <sup>232</sup> Th(p, 3n), E≈13-31 MeV; calculated σ. Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403
	2010BA16	NUCLEAR REACTIONS <sup>76</sup> Ge, <sup>74</sup> Ge, Ge(p, X) <sup>67</sup> Ge / <sup>68</sup> Ge / <sup>69</sup> Ge / <sup>71</sup> As / <sup>74</sup> As / <sup>65</sup> Zn / <sup>60</sup> Co, E=100 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> ; deduced σ. JOUR PANUE 73 1106

KEYNUMBERS AND KEYWORDS

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**A=65 (continued)**

- 2010DI02 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{94}\text{Zr}$ ,  $^{64}\text{Zn}$ ,  $^{45}\text{Sc}$ ,  $^{139}\text{La}(n, \gamma)$ ,  
E=thermal; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced shape of neutron flux,  
covariances. JOUR ARISE 68 592
- 2010LE13 NUCLEAR REACTIONS  $\text{Mo}(p, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} /$   
 $^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} /$   
 $^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E_\gamma$ ,  $I_\gamma$ ;  
deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010SZ03 NUCLEAR REACTIONS  $^{192}\text{Os}(p, n)$ ,  $(p, 3n)$ ,  $(p, 4n)$ ,  $(p, 5n)$ ,  $(p, 6n)$ ,  
 $\text{Cu}(p, n)^{65}\text{Zn}$ ,  $\text{Al}(p, X)^{24}\text{Na}$ ,  $\text{Cu}(p, X)^{62}\text{Zn}$  E < 66 MeV; measured  
reaction products,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ , integral yields. Comparison with  
model code ALICE / ASH. JOUR NIMBE 268 3306
- $^{65}\text{Ga}$  2010AL19 NUCLEAR REACTIONS  $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} /$   
 $^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ ,  
E=51-164 MeV; measured reaction products recoils,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ ,  
angular momentum. Comparison with statistical code PACE-2. JOUR  
JPGPE 37 115101

**A=66**

- $^{66}\text{Mn}$  2010GA06 NUCLEAR REACTIONS  $^9\text{Be}(^{62}\text{Fe}, ^{62}\text{Fe}')$ , E=73.0 MeV / nucleon  
[ $^{62}\text{Fe}$  secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130  
MeV / nucleon],  $^9\text{Be}(^{64}\text{Fe}, ^{64}\text{Fe}')$ , E=67.5 MeV / nucleon [ $^{64}\text{Fe}$   
secondary beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV /  
nucleon],  $^9\text{Be}(^{66}\text{Fe}, ^{66}\text{Fe}')$ , E=82.6 MeV / nucleon [ $^{66}\text{Fe}$  secondary  
beam from primary reaction  $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon],  
 $^9\text{Be}(^{60}\text{Cr}, ^{60}\text{Cr}')$ , E=80.6 MeV / nucleon [ $^{60}\text{Cr}$  secondary beam from  
primary reaction  $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon],  $^9\text{Be}(^{62}\text{Cr},$   
 $^{62}\text{Cr}')$ , E=74.6 MeV / nucleon [ $^{62}\text{Cr}$  secondary beam from primary  
reaction  $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon],  $^9\text{Be}(^{64}\text{Cr}, ^{64}\text{Cr}')$ ,  
E=87.0 MeV / nucleon [ $^{64}\text{Cr}$  secondary beam from primary reaction  
 $^9\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  
(particle) $\gamma$ -coin,  $\sigma$ .  $^{62,64,66}\text{Fe}$ ,  $^{60,62,64}\text{Cr}$ ; deduced levels, J,  $\pi$ .  
Comparison with large-scale shell-model calculations in different model  
spaces.  $^9\text{Be}(^{76}\text{Ge}, X)^{62}\text{Fe} / ^{64}\text{Fe} / ^{66}\text{Fe} / ^{60}\text{Cr} / ^{62}\text{Cr} / ^{64}\text{Cr} / ^{65}\text{Mn} /$   
 $^{66}\text{Mn} / ^{67}\text{Fe} / ^{69}\text{Co}$ , E=130 MeV / nucleon; measured yields of  
secondary ion beams. JOUR PRVCA 81 051304
- $^{66}\text{Fe}$  2010FE01 ATOMIC MASSES  $^{63,64,65,65m,66}\text{Fe}$ ,  $^{64,65,66,67,67m}\text{Co}$ ; measured  
cyclotron resonance frequencies and mass excesses using LEBIT  
Penning-trap mass spectrometer. Comparison with AME-2003  
evaluation.  $^{61,63,65,67}\text{Fe}$ ; systematics of low-lying levels. Z=24-31,  
N=35-44; systematics of two-neutron separation energies. JOUR  
PRVCA 81 044318

A=66 (*continued*)

- 2010GA06 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{62}\text{Fe}, {}^{62}\text{Fe}')$ , E=73.0 MeV / nucleon [ ${}^{62}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  ${}^9\text{Be}({}^{64}\text{Fe}, {}^{64}\text{Fe}')$ , E=67.5 MeV / nucleon [ ${}^{64}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  ${}^9\text{Be}({}^{66}\text{Fe}, {}^{66}\text{Fe}')$ , E=82.6 MeV / nucleon [ ${}^{66}\text{Fe}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  ${}^9\text{Be}({}^{60}\text{Cr}, {}^{60}\text{Cr}')$ , E=80.6 MeV / nucleon [ ${}^{60}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  ${}^9\text{Be}({}^{62}\text{Cr}, {}^{62}\text{Cr}')$ , E=74.6 MeV / nucleon [ ${}^{62}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon],  ${}^9\text{Be}({}^{64}\text{Cr}, {}^{64}\text{Cr}')$ , E=87.0 MeV / nucleon [ ${}^{64}\text{Cr}$  secondary beam from primary reaction  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ .  ${}^{62,64,66}\text{Fe}$ ,  ${}^{60,62,64}\text{Cr}$ ; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces.  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X})$   ${}^{62}\text{Fe}$  /  ${}^{64}\text{Fe}$  /  ${}^{66}\text{Fe}$  /  ${}^{60}\text{Cr}$  /  ${}^{62}\text{Cr}$  /  ${}^{64}\text{Cr}$  /  ${}^{65}\text{Mn}$  /  ${}^{66}\text{Mn}$  /  ${}^{67}\text{Fe}$  /  ${}^{69}\text{Co}$ , E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- ${}^{66}\text{Co}$  2008KWZZ NUCLEAR REACTIONS  $\text{He}({}^{63}\text{Fe}, \text{X})$ , ( ${}^{64}\text{Co}, \text{X}$ ), E=86 MeV / nucleon; measured  $I\gamma(t)$ ,  $E\gamma$ , A / Q, ToF.  ${}^{63,64,65,65m}\text{Fe}$ ,  ${}^{64,65,66}\text{Co}$  deduced mass excess.  ${}^{65}\text{Fe}$  deduced levels, J,  $\pi$ , isomer decay,  $T_{1/2}$ . Results on CD only. Penning trap mass spectrometer. CONF E.Lansing (NS2008),P129,Kwiatkowski
- 2010FE01 ATOMIC MASSES  ${}^{63,64,65,65m,66}\text{Fe}$ ,  ${}^{64,65,66,67,67m}\text{Co}$ ; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation.  ${}^{61,63,65,67}\text{Fe}$ ; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- ${}^{66}\text{Cu}$  2010LE19 NUCLEAR REACTIONS  ${}^{65}\text{Cu}({}^8\text{He}, \text{X})$   ${}^{65}\text{Cu}$  /  ${}^{66}\text{Cu}$  /  ${}^{67}\text{Cu}$  /  ${}^{68}\text{Zn}$  /  ${}^{69}\text{Zn}$  /  ${}^{68}\text{Ga}$  /  ${}^{69}\text{Ga}$  /  ${}^{70}\text{Ga}$ , [ ${}^8\text{He}$  secondary beam from C( ${}^{13}\text{C}$ , X), E=75 MeV / nucleon primary reaction], E=19.9, 30.6 MeV; measured  $E\gamma$ ,  $I\gamma$ , neutron spectra, (particle) $\gamma$ -, (particle)n $\gamma$ -,  $\gamma\gamma$ -coin, residue  $\sigma$  for fusion and neutron transfer,  $\sigma(\theta)$  for  ${}^4\text{He}$ ,  ${}^6\text{He}$  and  ${}^8\text{He}$  using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
- 2011L001 NUCLEAR MOMENTS  ${}^{66}\text{Cu}$  [from Cu(d, p), E=6 MeV]; measured quadrupole oscillation frequency; deduced spectroscopic quadrupole moment of the  $6^-$  isomeric state, deformation, oblate shape. Comparison with HFB calculations. JOUR PYLBB 694 316
- ${}^{66}\text{Zn}$  2010M014 NUCLEAR REACTIONS  ${}^{12}\text{C}({}^{68}\text{Zn}, {}^{68}\text{Zn}')$ , E=180 MeV; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma(\theta, \text{H})$ , precession angles in transient fields.  ${}^{68}\text{Zn}$ ; deduced g factors. Coulomb excitation.  ${}^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
- 2010M014 NUCLEAR MOMENTS  ${}^{68}\text{Zn}$ ; measured g factors by (particle) $\gamma(\theta, \text{H})$  in transient fields.  ${}^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301

KEYNUMBERS AND KEYWORDS

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**A=66 (continued)**

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| $^{66}\text{Ga}$ | 2008MEZV | NUCLEAR REACTIONS $^{209}\text{Bi}(\alpha, x)$ , E=28.8, 32.8 MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; $^{186}\text{W}(p, n)$ , E=7-15 MeV; deduced $\sigma$ ; calculated $\sigma$ ; $\text{Zn}(d, x)^{61}\text{Cu}$ , E $\approx$ 3-19 MeV; $\text{Zn}(d, x)^{64}\text{Cu}$ , E $\approx$ 3-19 MeV; $\text{Zn}(d, x)^{66}\text{Ga}$ , E $\approx$ 3-19 MeV; $\text{Zn}(d, x)^{67}\text{Ga}$ , E $\approx$ 3-19 MeV; $\text{Zn}(d, x)^{65}\text{Zn}$ , E $\approx$ 3-19 MeV; $\text{Zn}(d, x)^{69}\text{Zn}$ , E $\approx$ 3-19 MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields; $^{103}\text{Rh}(d, 2n)$ , E $\approx$ 3-20 MeV; $^{232}\text{Th}(p, 3n)$ , E $\approx$ 13-31 MeV; calculated $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403  |
|                  | 2010AL19 | NUCLEAR REACTIONS $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ , E=51-164 MeV; measured reaction products recoils, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101   |
|                  | 2010HE04 | NUCLEAR REACTIONS $\text{Cd}(\alpha, xn\alpha)$ , $^{108}\text{Cd}(\alpha, 2n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{106}\text{Cd}(\alpha, np)$ , $^{109}\text{Cd}(\alpha, np)$ , $(\alpha, 3np)$ , $^{110}\text{Cd}(\alpha, n)$ , $(\alpha, p)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{111}\text{Cd}(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 3np)$ , $^{112}\text{Cd}(\alpha, 3n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $^{113}\text{Cd}(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{114}\text{Cd}(\alpha, n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $(\alpha, 4np)$ , $(\alpha, n2p)$ , $^{116}\text{Cd}(\alpha, 3n)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $(\alpha, 3n2p)$ , $\text{Cu}(\alpha, X)^{66}\text{Ga} / ^{67}\text{Ga}$ , E=5-50 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376 |
| $^{66}\text{Ge}$ | 2008WEZW | RADIOACTIVITY $^{66}\text{Ge}$ ; $^{68}\text{Ge}$ ; $^{94}\text{Zr}$ ; $^{120}\text{Te}$ ; measured decay products; deduced $B(E2)$ , $T_{1/2}$ ; $^{140}\text{Nd}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma(\theta)$ -coin; deduced E, J, $\pi$ , mixed-symmetry states. Results on CD only. CONF E.Lansing (NS2008),P23,Werner  |
|                  | 2010AL19 | NUCLEAR REACTIONS $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ , E=51-164 MeV; measured reaction products recoils, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101   |

**A=67**

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| $^{67}\text{Fe}$ | 2010DA06 | NUCLEAR REACTIONS $\text{Ni}(^{86}\text{Kr}, X)$ , E=60.5 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (fragment) $\gamma$ -coin, and $\gamma(t)$ . Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. $^{50}\text{K}$ , $^{60}\text{V}$ , $^{62,64}\text{Mn}$ , $^{65,67}\text{Fe}$ , $^{68,70}\text{Co}$ , $^{75}\text{Cu}$ , $^{78}\text{Zn}$ , $^{78}\text{Ga}$ ; deduced isomers, half-lives, J, $\pi$ , multipolarities. $^{69,71,73}\text{Cu}$ ; deduced $B(M1)$ , $B(E2)$ values. $^{75}\text{Cu}$ ; deduced levels, J, $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304 |
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A=67 (*continued*)

- 2010FE01 ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- 2010GA06 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>62</sup>Fe, <sup>62</sup>Fe'), E=73.0 MeV / nucleon [<sup>62</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Fe, <sup>64</sup>Fe'), E=67.5 MeV / nucleon [<sup>64</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>66</sup>Fe, <sup>66</sup>Fe'), E=82.6 MeV / nucleon [<sup>66</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=80.6 MeV / nucleon [<sup>60</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=74.6 MeV / nucleon [<sup>62</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Cr, <sup>64</sup>Cr'), E=87.0 MeV / nucleon [<sup>64</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ . <sup>62,64,66</sup>Fe, <sup>60,62,64</sup>Cr; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>62</sup>Fe / <sup>64</sup>Fe / <sup>66</sup>Fe / <sup>60</sup>Cr / <sup>62</sup>Cr / <sup>64</sup>Cr / <sup>65</sup>Mn / <sup>66</sup>Mn / <sup>67</sup>Fe / <sup>69</sup>Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- <sup>67</sup>Co 2010FE01 ATOMIC MASSES <sup>63,64,65,65m,66</sup>Fe, <sup>64,65,66,67,67m</sup>Co; measured cyclotron resonance frequencies and mass excesses using LEBIT Penning-trap mass spectrometer. Comparison with AME-2003 evaluation. <sup>61,63,65,67</sup>Fe; systematics of low-lying levels. Z=24-31, N=35-44; systematics of two-neutron separation energies. JOUR PRVCA 81 044318
- <sup>67</sup>Cu 2010LE19 NUCLEAR REACTIONS <sup>65</sup>Cu(<sup>8</sup>He, X)<sup>65</sup>Cu / <sup>66</sup>Cu / <sup>67</sup>Cu / <sup>68</sup>Zn / <sup>69</sup>Zn / <sup>68</sup>Ga / <sup>69</sup>Ga / <sup>70</sup>Ga, [<sup>8</sup>He secondary beam from C(<sup>13</sup>C, X), E=75 MeV / nucleon primary reaction], E=19.9, 30.6 MeV; measured E $\gamma$ , I $\gamma$ , neutron spectra, (particle) $\gamma$ -, (particle)n $\gamma$ -,  $\gamma\gamma$ -coin, residue  $\sigma$  for fusion and neutron transfer,  $\sigma(\theta)$  for <sup>4</sup>He, <sup>6</sup>He and <sup>8</sup>He using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
- <sup>67</sup>Ga 2008MEZV NUCLEAR REACTIONS <sup>209</sup>Bi( $\alpha$ , x), E=28.8, 32.8 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ; <sup>186</sup>W(p, n), E=7-15 MeV; deduced  $\sigma$ ; calculated  $\sigma$ ; Zn(d, x)<sup>61</sup>Cu, E $\approx$ 3-19 MeV; Zn(d, x)<sup>64</sup>Cu, E $\approx$ 3-19 MeV; Zn(d, x)<sup>66</sup>Ga, E $\approx$ 3-19 MeV; Zn(d, x)<sup>67</sup>Ga, E $\approx$ 3-19 MeV; Zn(d, x)<sup>65</sup>Zn, E $\approx$ 3-19 MeV; Zn(d, x)<sup>69</sup>Zn, E $\approx$ 3-19 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields; <sup>103</sup>Rh(d, 2n), E $\approx$ 3-20 MeV; <sup>232</sup>Th(p, 3n), E $\approx$ 13-31 MeV; calculated  $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403

KEYNUMBERS AND KEYWORDS

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**A=67 (continued)**

- 2010AL19 NUCLEAR REACTIONS  $^{55}\text{Mn}(^{20}\text{Ne}, \text{X})^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ ,  
E=51-164 MeV; measured reaction products recoils,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ,  
angular momentum. Comparison with statistical code PACE-2. JOUR  
JPGPE 37 115101
- 2010CH16 NUCLEAR REACTIONS  $\text{U}(\text{p}, \text{X})^{67}\text{Ga} / ^{69}\text{Ga} / ^{71}\text{Ga} / ^{73}\text{Ga} / ^{75}\text{Ga} / ^{77}\text{Ga} / ^{79}\text{Ga} / ^{81}\text{Ga}$ , E=1.4 GeV; measured optical hfs spectra;  
deduced ground J,  $\pi$ , magnetic dipole and electric quadrupole  
moments, anomalous ground state spins. JOUR PRLTA 104 252502
- 2010HE04 NUCLEAR REACTIONS  $\text{Cd}(\alpha, \text{xn}\alpha)$ ,  $^{108}\text{Cd}(\alpha, 2\text{n})$ ,  $(\alpha, \text{p})$ ,  $(\alpha, \text{np})$ ,  
 $(\alpha, 2\text{np})$ ,  $(\alpha, 3\text{np})$ ,  $^{106}\text{Cd}(\alpha, \text{np})$ ,  $^{109}\text{Cd}(\alpha, \text{np})$ ,  $(\alpha, 3\text{np})$ ,  $^{110}\text{Cd}(\alpha, \text{n})$ ,  
 $(\alpha, \text{p})$ ,  $(\alpha, 2\text{np})$ ,  $(\alpha, 3\text{np})$ ,  $^{111}\text{Cd}(\alpha, \text{p})$ ,  $(\alpha, \text{np})$ ,  $(\alpha, 3\text{np})$ ,  $^{112}\text{Cd}(\alpha, 3\text{n})$ ,  
 $(\alpha, \text{p})$ ,  $(\alpha, \text{np})$ ,  $(\alpha, 2\text{np})$ ,  $^{113}\text{Cd}(\alpha, \text{p})$ ,  $(\alpha, \text{np})$ ,  $(\alpha, 2\text{np})$ ,  $(\alpha, 3\text{np})$ ,  
 $^{114}\text{Cd}(\alpha, \text{n})$ ,  $(\alpha, \text{p})$ ,  $(\alpha, \text{np})$ ,  $(\alpha, 2\text{np})$ ,  $(\alpha, 3\text{np})$ ,  $(\alpha, 4\text{np})$ ,  $(\alpha, \text{n}2\text{p})$ ,  
 $^{116}\text{Cd}(\alpha, 3\text{n})$ ,  $(\alpha, 2\text{np})$ ,  $(\alpha, 3\text{np})$ ,  $(\alpha, 3\text{n}2\text{p})$ ,  $\text{Cu}(\alpha, \text{X})^{66}\text{Ga} / ^{67}\text{Ga}$ ,  
E=5-50 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with  
experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR  
NIMBE 268 1376
- $^{67}\text{Ge}$  2010AL19 NUCLEAR REACTIONS  $^{55}\text{Mn}(^{20}\text{Ne}, \text{X})^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ ,  
E=51-164 MeV; measured reaction products recoils,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ,  
angular momentum. Comparison with statistical code PACE-2. JOUR  
JPGPE 37 115101
- 2010BA16 NUCLEAR REACTIONS  $^{76}\text{Ge}$ ,  $^{74}\text{Ge}$ ,  $\text{Ge}(\text{p}, \text{X})^{67}\text{Ge} / ^{68}\text{Ge} / ^{69}\text{Ge} / ^{71}\text{As} / ^{74}\text{As} / ^{65}\text{Zn} / ^{60}\text{Co}$ , E=100 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ .  
JOUR PANUE 73 1106
- $^{67}\text{As}$  2008ORZZ NUCLEAR REACTIONS  $^{40}\text{Ca}(^{32}\text{S}, \text{n}\alpha)$ ,  $(^{32}\text{S}, \text{p}\alpha)$ , E=90 MeV;  
measured reaction products,  $E\gamma$ ,  $I\gamma$ ;  $^{67}\text{As}$ ,  $^{67}\text{Se}$ ; deduced level energies,  
J,  $\pi$ ,  $\text{B}(\text{E}1)\text{T}_{1/2}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.)  
Proc,P307,Orlandi
- $^{67}\text{Se}$  2008ORZZ NUCLEAR REACTIONS  $^{40}\text{Ca}(^{32}\text{S}, \text{n}\alpha)$ ,  $(^{32}\text{S}, \text{p}\alpha)$ , E=90 MeV;  
measured reaction products,  $E\gamma$ ,  $I\gamma$ ;  $^{67}\text{As}$ ,  $^{67}\text{Se}$ ; deduced level energies,  
J,  $\pi$ ,  $\text{B}(\text{E}1)\text{T}_{1/2}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.)  
Proc,P307,Orlandi

**A=68**

- $^{68}\text{Co}$  2010DA06 NUCLEAR REACTIONS  $\text{Ni}(^{86}\text{Kr}, \text{X})$ , E=60.5 MeV / nucleon;  
measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma(\text{t})$ . Identification of A and Z  
by energy-loss, total-kinetic-energy, and time-of-flight measurements.  
 $^{50}\text{K}$ ,  $^{60}\text{V}$ ,  $^{62,64}\text{Mn}$ ,  $^{65,67}\text{Fe}$ ,  $^{68,70}\text{Co}$ ,  $^{75}\text{Cu}$ ,  $^{78}\text{Zn}$ ,  $^{78}\text{Ga}$ ; deduced isomers,  
half-lives, J,  $\pi$ , multipolarities.  $^{69,71,73}\text{Cu}$ ; deduced  $\text{B}(\text{M}1)$ ,  $\text{B}(\text{E}2)$   
values.  $^{75}\text{Cu}$ ; deduced levels, J,  $\pi$ , and transition rates for proposed  
level-scheme scenarios and comparisons with shell-model calculations.  
 $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-  
states. JOUR PRVCA 81 034304

KEYNUMBERS AND KEYWORDS

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**A=68 (continued)**

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| $^{68}\text{Zn}$ | 2008BEZH | NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle   |
|                  | 2010LE19 | NUCLEAR REACTIONS $^{65}\text{Cu}(^8\text{He}, \text{X})^{65}\text{Cu} / ^{66}\text{Cu} / ^{67}\text{Cu} / ^{68}\text{Zn} / ^{69}\text{Zn} / ^{68}\text{Ga} / ^{69}\text{Ga} / ^{70}\text{Ga}$ , [ $^8\text{He}$ secondary beam from C( $^{13}\text{C}$ , X), E=75 MeV / nucleon primary reaction], E=19.9, 30.6 MeV; measured $E\gamma$ , $I\gamma$ , neutron spectra, (particle) $\gamma$ -, (particle)n $\gamma$ -, $\gamma\gamma$ -coin, residue $\sigma$ for fusion and neutron transfer, $\sigma(\theta)$ for $^4\text{He}$ , $^6\text{He}$ and $^8\text{He}$ using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617 |
|                  | 2010M014 | NUCLEAR REACTIONS $^{12}\text{C}(^{68}\text{Zn}, ^{68}\text{Zn}')$ , E=180 MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma(\theta, \text{H})$ , precession angles in transient fields. $^{68}\text{Zn}$ ; deduced g factors. Coulomb excitation. $^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301  |
|                  | 2010M014 | NUCLEAR MOMENTS $^{68}\text{Zn}$ ; measured g factors by (particle) $\gamma(\theta, \text{H})$ in transient fields. $^{62,64,66,70}\text{Zn}$ ; reanalyzed g factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301  |
| $^{68}\text{Ga}$ | 2010LE19 | NUCLEAR REACTIONS $^{65}\text{Cu}(^8\text{He}, \text{X})^{65}\text{Cu} / ^{66}\text{Cu} / ^{67}\text{Cu} / ^{68}\text{Zn} / ^{69}\text{Zn} / ^{68}\text{Ga} / ^{69}\text{Ga} / ^{70}\text{Ga}$ , [ $^8\text{He}$ secondary beam from C( $^{13}\text{C}$ , X), E=75 MeV / nucleon primary reaction], E=19.9, 30.6 MeV; measured $E\gamma$ , $I\gamma$ , neutron spectra, (particle) $\gamma$ -, (particle)n $\gamma$ -, $\gamma\gamma$ -coin, residue $\sigma$ for fusion and neutron transfer, $\sigma(\theta)$ for $^4\text{He}$ , $^6\text{He}$ and $^8\text{He}$ using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617 |
| $^{68}\text{Ge}$ | 2008WEZW | RADIOACTIVITY $^{66}\text{Ge}$ ; $^{68}\text{Ge}$ ; $^{94}\text{Zr}$ ; $^{120}\text{Te}$ ; measured decay products; deduced B(E2), $T_{1/2}$ ; $^{140}\text{Nd}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma(\theta)$ -coin; deduced E, J, $\pi$ , mixed-symmetry states. Results on CD only. CONF E.Lansing (NS2008),P23,Werner   |
|                  | 2010BA16 | NUCLEAR REACTIONS $^{76}\text{Ge}$ , $^{74}\text{Ge}$ , $\text{Ge}(p, \text{X})^{67}\text{Ge} / ^{68}\text{Ge} / ^{69}\text{Ge} / ^{71}\text{As} / ^{74}\text{As} / ^{65}\text{Zn} / ^{60}\text{Co}$ , E=100 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR PANUE 73 1106  |
|                  | 2010MI18 | NUCLEAR REACTIONS $^{58}\text{Ni}(^{16}\text{O}, \text{X})^{68}\text{Ge} / ^{71}\text{Se} / ^{72}\text{Se} / ^{71}\text{As} / ^{72}\text{Br}$ , E=40-60 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $\gamma$ -ray energies and intensities. Comparison with evaporation codes CASCADE and PACE 4. JOUR RJPHE 55 712  |
| $^{68}\text{As}$ | 2008SAZF | RADIOACTIVITY $^{64}\text{Ge}$ , $^{68}\text{Se}(\text{EC})$ ; measured $T_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P172,Savory   |
| $^{68}\text{Se}$ | 2008SAZF | ATOMIC MASSES $^{68,70}\text{Se}$ , $^{70,71}\text{Br}$ ; measured mass using LEBIT facility. Results on CD only. CONF E.Lansing (NS2008),P172,Savory   |
|                  | 2008SAZF | RADIOACTIVITY $^{64}\text{Ge}$ , $^{68}\text{Se}(\text{EC})$ ; measured $T_{1/2}$ . Results on CD only. CONF E.Lansing (NS2008),P172,Savory   |



## A=69

- <sup>69</sup>Co      2010GA06      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>62</sup>Fe, <sup>62</sup>Fe'), E=73.0 MeV / nucleon [<sup>62</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Fe, <sup>64</sup>Fe'), E=67.5 MeV / nucleon [<sup>64</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>66</sup>Fe, <sup>66</sup>Fe'), E=82.6 MeV / nucleon [<sup>66</sup>Fe secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=80.6 MeV / nucleon [<sup>60</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=74.6 MeV / nucleon [<sup>62</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon], <sup>9</sup>Be(<sup>64</sup>Cr, <sup>64</sup>Cr'), E=87.0 MeV / nucleon [<sup>64</sup>Cr secondary beam from primary reaction <sup>9</sup>Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin,  $\sigma$ . <sup>62,64,66</sup>Fe, <sup>60,62,64</sup>Cr; deduced levels, J,  $\pi$ . Comparison with large-scale shell-model calculations in different model spaces. <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>62</sup>Fe / <sup>64</sup>Fe / <sup>66</sup>Fe / <sup>60</sup>Cr / <sup>62</sup>Cr / <sup>64</sup>Cr / <sup>65</sup>Mn / <sup>66</sup>Mn / <sup>67</sup>Fe / <sup>69</sup>Co, E=130 MeV / nucleon; measured yields of secondary ion beams. JOUR PRVCA 81 051304
- <sup>69</sup>Cu      2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multipolarities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- <sup>69</sup>Zn      2008MEZV      NUCLEAR REACTIONS <sup>209</sup>Bi( $\alpha$ , x), E=28.8, 32.8 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ; <sup>186</sup>W(p, n), E=7-15 MeV; deduced  $\sigma$ ; calculated  $\sigma$ ; Zn(d, x)<sup>61</sup>Cu, E $\approx$ 3-19 MeV; Zn(d, x)<sup>64</sup>Cu, E $\approx$ 3-19 MeV; Zn(d, x)<sup>66</sup>Ga, E $\approx$ 3-19 MeV; Zn(d, x)<sup>67</sup>Ga, E $\approx$ 3-19 MeV; Zn(d, x)<sup>65</sup>Zn, E $\approx$ 3-19 MeV; Zn(d, x)<sup>69</sup>Zn, E $\approx$ 3-19 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields; <sup>103</sup>Rh(d, 2n), E $\approx$ 3-20 MeV; <sup>232</sup>Th(p, 3n), E $\approx$ 13-31 MeV; calculated  $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403
- 2008SEZU      NUCLEAR REACTIONS <sup>68,70</sup>Zn(n,  $\gamma$ ), E $\approx$ thermal; measured E $\gamma$ , I $\gamma$ ; deduced resonance integral,  $\sigma$ , isomer  $\sigma$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P509
- 2008VLZZ      NUCLEAR REACTIONS <sup>72,74</sup>Ge(n,  $\alpha$ ), E=9.6, 10.6, 11.1, 11.4 MeV; <sup>76</sup>Ge(n, 2n), E=9.6, 10.6, 11.1, 11.4 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$  isomer,  $\sigma$  ground state; calculated  $\sigma$  isomer,  $\sigma$  ground state using EMPIRE; <sup>191</sup>Ir(n, 2n), E=10.0, 10.5, 11.0, 11.3 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced  $\sigma$  isomer,  $\sigma$  ground state; calculated  $\sigma$  isomer,  $\sigma$  ground state using STAPRE-F. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P471

**A=69 (continued)**

- 2009VLZZ NUCLEAR REACTIONS  $^{72,74}\text{Ge}(n, \alpha)$ ,  $E=9.6\text{-}11.4$  MeV;  $^{76}\text{Ge}(n, 2n)$ ,  $E=9.6\text{-}11.4$  MeV; measured  $^{69,71}\text{Zn}$ ,  $^{75}\text{Ge}$   $E\gamma$ ,  $I\gamma$ , isomeric transition; deduced  $\sigma(g)$ ,  $\sigma(m)$ ; calculated  $\sigma(g)$ ,  $\sigma(m)$  using EMPIRE-II code; analyzed influence of pre-equilibrium. Compared to available data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P627,Vlastou
- 2010LE19 NUCLEAR REACTIONS  $^{65}\text{Cu}(^8\text{He}, X)^{65}\text{Cu} / ^{66}\text{Cu} / ^{67}\text{Cu} / ^{68}\text{Zn} / ^{69}\text{Zn} / ^{68}\text{Ga} / ^{69}\text{Ga} / ^{70}\text{Ga}$ , [ $^8\text{He}$  secondary beam from  $\text{C}(^{13}\text{C}, X)$ ,  $E=75$  MeV / nucleon primary reaction],  $E=19.9, 30.6$  MeV; measured  $E\gamma$ ,  $I\gamma$ , neutron spectra, (particle) $\gamma^-$ , (particle) $n\gamma^-$ ,  $\gamma\gamma$ -coin, residue  $\sigma$  for fusion and neutron transfer,  $\sigma(\theta)$  for  $^4\text{He}$ ,  $^6\text{He}$  and  $^8\text{He}$  using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
- $^{69}\text{Ga}$  2010CH16 NUCLEAR REACTIONS  $\text{U}(p, X)^{67}\text{Ga} / ^{69}\text{Ga} / ^{71}\text{Ga} / ^{73}\text{Ga} / ^{75}\text{Ga} / ^{77}\text{Ga} / ^{79}\text{Ga} / ^{81}\text{Ga}$ ,  $E=1.4$  GeV; measured optical hfs spectra; deduced ground  $J$ ,  $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502
- 2010LE19 NUCLEAR REACTIONS  $^{65}\text{Cu}(^8\text{He}, X)^{65}\text{Cu} / ^{66}\text{Cu} / ^{67}\text{Cu} / ^{68}\text{Zn} / ^{69}\text{Zn} / ^{68}\text{Ga} / ^{69}\text{Ga} / ^{70}\text{Ga}$ , [ $^8\text{He}$  secondary beam from  $\text{C}(^{13}\text{C}, X)$ ,  $E=75$  MeV / nucleon primary reaction],  $E=19.9, 30.6$  MeV; measured  $E\gamma$ ,  $I\gamma$ , neutron spectra, (particle) $\gamma^-$ , (particle) $n\gamma^-$ ,  $\gamma\gamma$ -coin, residue  $\sigma$  for fusion and neutron transfer,  $\sigma(\theta)$  for  $^4\text{He}$ ,  $^6\text{He}$  and  $^8\text{He}$  using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
- $^{69}\text{Ge}$  2010AL19 NUCLEAR REACTIONS  $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ ,  $E=51\text{-}164$  MeV; measured reaction products recoils,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , angular momentum. Comparison with statistical code PACE-2. JOUR JPGPE 37 115101
- 2010BA16 NUCLEAR REACTIONS  $^{76}\text{Ge}$ ,  $^{74}\text{Ge}$ ,  $\text{Ge}(p, X)^{67}\text{Ge} / ^{68}\text{Ge} / ^{69}\text{Ge} / ^{71}\text{As} / ^{74}\text{As} / ^{65}\text{Zn} / ^{60}\text{Co}$ ,  $E=100$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR PANUE 73 1106

**A=70**

- $^{70}\text{Co}$  2010DA06 NUCLEAR REACTIONS  $\text{Ni}(^{86}\text{Kr}, X)$ ,  $E=60.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma(t)$ . Identification of  $A$  and  $Z$  by energy-loss, total-kinetic-energy, and time-of-flight measurements.  $^{50}\text{K}$ ,  $^{60}\text{V}$ ,  $^{62,64}\text{Mn}$ ,  $^{65,67}\text{Fe}$ ,  $^{68,70}\text{Co}$ ,  $^{75}\text{Cu}$ ,  $^{78}\text{Zn}$ ,  $^{78}\text{Ga}$ ; deduced isomers, half-lives,  $J$ ,  $\pi$ , multiplicities.  $^{69,71,73}\text{Cu}$ ; deduced  $B(M1)$ ,  $B(E2)$  values.  $^{75}\text{Cu}$ ; deduced levels,  $J$ ,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations.  $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of  $1 / 2^-$ ,  $3 / 2^-$  and  $5 / 2^-$  states. JOUR PRVCA 81 034304

KEYNUMBERS AND KEYWORDS

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**A=70 (continued)**

$^{70}\text{Ni}$	2008AZZZ	NUCLEAR REACTIONS $^{208}\text{Pb}(^{70}\text{Ni}, ^{70}\text{Ni}')$ , ( $^{74}\text{Zn}, ^{74}\text{Zn}'$ ), ( $^{76}\text{Ge}, ^{76}\text{Ge}'$ ), $E=60$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; $^{70}\text{Ni}$ , $^{74}\text{Zn}$ , $^{76}\text{Ge}$ ; deduced level energies, $J$ , $\pi$ , $\sigma$ , $B(E2)$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez
$^{70}\text{Zn}$	2010M014	NUCLEAR REACTIONS $^{12}\text{C}(^{68}\text{Zn}, ^{68}\text{Zn}')$ , $E=180$ MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma(\theta, H)$ , precession angles in transient fields. $^{68}\text{Zn}$ ; deduced $g$ factors. Coulomb excitation. $^{62,64,66,70}\text{Zn}$ ; reanalyzed $g$ factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
	2010M014	NUCLEAR MOMENTS $^{68}\text{Zn}$ ; measured $g$ factors by (particle) $\gamma(\theta, H)$ in transient fields. $^{62,64,66,70}\text{Zn}$ ; reanalyzed $g$ factors. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 014301
$^{70}\text{Ga}$	2010LE19	NUCLEAR REACTIONS $^{65}\text{Cu}(^8\text{He}, X)^{65}\text{Cu} / ^{66}\text{Cu} / ^{67}\text{Cu} / ^{68}\text{Zn} / ^{69}\text{Zn} / ^{68}\text{Ga} / ^{69}\text{Ga} / ^{70}\text{Ga}$ , [ $^8\text{He}$ secondary beam from $\text{C}(^{13}\text{C}, X)$ , $E=75$ MeV / nucleon primary reaction], $E=19.9, 30.6$ MeV; measured $E\gamma$ , $I\gamma$ , neutron spectra, (particle) $\gamma^-$ , (particle) $n\gamma^-$ , $\gamma\gamma$ -coin, residue $\sigma$ for fusion and neutron transfer, $\sigma(\theta)$ for $^4\text{He}$ , $^6\text{He}$ and $^8\text{He}$ using EXOGAM array and neutron wall. Coupled reaction channel calculations. CASCADE code used for statistical model calculation. JOUR PRVCA 82 044617
$^{70}\text{Ge}$	2008BEZH	NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced $g$ factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle
	2010SU05	NUCLEAR REACTIONS $^{60}\text{Ni}(^{12}\text{C}, 2p)$ , $E=45$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and $\gamma(\theta)$ . $^{70}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , multipolarity, and bands. Comparison with shell model calculations using G-matrix and EPQQM interactions, and with structures of $^{66,68}\text{Ge}$ . JOUR PRVCA 81 024309
$^{70}\text{As}$	2010AL19	NUCLEAR REACTIONS $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ , $E=51-164$ MeV; measured reaction products recoils, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101
$^{70}\text{Se}$	2008LJZZ	NUCLEAR REACTIONS $^{40}\text{Ca}(^{36}\text{Ar}, 2p\alpha)$ , $E$ not given; $^{40}\text{Ca}(^{36}\text{Ar}, 4p)$ , $E$ not given; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using plunger technique; deduced $^{70}\text{Se}$ $T_{1/2}$ , $B(E2)$ , deformation; calculated $E$ , $J$ , $\pi$ , configuration mixing, shape coexistence. Results on CD only. CONF E.Lansing (NS2008),P8,Ljungvall
	2008SAZF	ATOMIC MASSES $^{68,70}\text{Se}$ , $^{70,71}\text{Br}$ ; measured mass using LEBIT facility. Results on CD only. CONF E.Lansing (NS2008),P172,Savory
	2010AL19	NUCLEAR REACTIONS $^{55}\text{Mn}(^{20}\text{Ne}, X)^{70}\text{Se} / ^{70}\text{As} / ^{71}\text{As} / ^{72}\text{As} / ^{66}\text{Ge} / ^{67}\text{Ge} / ^{69}\text{Ge} / ^{65}\text{Ga} / ^{66}\text{Ga} / ^{67}\text{Ga} / ^{63}\text{Zn} / ^{60}\text{Cu} / ^{61}\text{Cu}$ , $E=51-164$ MeV; measured reaction products recoils, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101
$^{70}\text{Br}$	2008SAZF	ATOMIC MASSES $^{68,70}\text{Se}$ , $^{70,71}\text{Br}$ ; measured mass using LEBIT facility. Results on CD only. CONF E.Lansing (NS2008),P172,Savory

## A=71

- <sup>71</sup>Mn      20100H02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta$ E-TOF- $B\rho$  method. JOUR JUPSA 79 073201
- <sup>71</sup>Co      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010RAZY      RADIOACTIVITY <sup>71,73</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -, (implant ions) $\beta\gamma$ -coin, half-lives using SeGA array. <sup>71,73</sup>Ni; deduced levels, J,  $\pi$ , logft values. Comparisons with shell-model calculations. PREPRINT Rajabali,11/7/2010
- <sup>71</sup>Ni      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010RAZY      RADIOACTIVITY <sup>71,73</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -, (implant ions) $\beta\gamma$ -coin, half-lives using SeGA array. <sup>71,73</sup>Ni; deduced levels, J,  $\pi$ , logft values. Comparisons with shell-model calculations. PREPRINT Rajabali,11/7/2010
- <sup>71</sup>Cu      2008YOZV      RADIOACTIVITY <sup>21</sup>Mg;<sup>21</sup>F;<sup>71</sup>Cu;<sup>72</sup>Cu; measured  $\beta$  asymmetry using laser spectroscopy; deduced ground state  $\mu$ , quadrupole moment, spin. Results on CD only. CONF E.Lansing (NS2008),P63,Yordanov

KEYNUMBERS AND KEYWORDS

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A=71 (*continued*)

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|                  | 2010DA06 | NUCLEAR REACTIONS Ni( <sup>86</sup> Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup> K, <sup>60</sup> V, <sup>62,64</sup> Mn, <sup>65,67</sup> Fe, <sup>68,70</sup> Co, <sup>75</sup> Cu, <sup>78</sup> Zn, <sup>78</sup> Ga; deduced isomers, half-lives, J, $\pi$ , multipolarities. <sup>69,71,73</sup> Cu; deduced B(M1), B(E2) values. <sup>75</sup> Cu; deduced levels, J, $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup> Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304 |
| <sup>71</sup> Zn | 2008SEZU | NUCLEAR REACTIONS <sup>68,70</sup> Zn(n, $\gamma$ ), E $\approx$ thermal; measured E $\gamma$ , I $\gamma$ ; deduced resonance integral, $\sigma$ , isomer $\sigma$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P509  |
|                  | 2008VLZZ | NUCLEAR REACTIONS <sup>72,74</sup> Ge(n, $\alpha$ ), E=9.6, 10.6, 11.1, 11.4 MeV; <sup>76</sup> Ge(n, 2n), E=9.6, 10.6, 11.1, 11.4 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ isomer, $\sigma$ ground state; calculated $\sigma$ isomer, $\sigma$ ground state using EMPIRE; <sup>191</sup> Ir(n, 2n), E=10.0, 10.5, 11.0, 11.3 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced $\sigma$ isomer, $\sigma$ ground state; calculated $\sigma$ isomer, $\sigma$ ground state using STAPRE-F. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P471   |
|                  | 2009VLZZ | NUCLEAR REACTIONS <sup>72,74</sup> Ge(n, $\alpha$ ), E=9.6-11.4 MeV; <sup>76</sup> Ge(n, 2n), E=9.6-11.4 MeV; measured <sup>69,71</sup> Zn, <sup>75</sup> Ge E $\gamma$ , I $\gamma$ , isomeric transition; deduced $\sigma$ (g), $\sigma$ (m); calculated $\sigma$ (g), $\sigma$ (m) using EMPIRE-II code; analyzed influence of pre-equilibrium. Compared to available data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P627,Vlastou   |
| <sup>71</sup> Ga | 2010CH16 | NUCLEAR REACTIONS U(p, X) <sup>67</sup> Ga / <sup>69</sup> Ga / <sup>71</sup> Ga / <sup>73</sup> Ga / <sup>75</sup> Ga / <sup>77</sup> Ga / <sup>79</sup> Ga / <sup>81</sup> Ga, E=1.4 GeV; measured optical hfs spectra; deduced ground J, $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502   |
| <sup>71</sup> As | 2010AL19 | NUCLEAR REACTIONS <sup>55</sup> Mn( <sup>20</sup> Ne, X) <sup>70</sup> Se / <sup>70</sup> As / <sup>71</sup> As / <sup>72</sup> As / <sup>66</sup> Ge / <sup>67</sup> Ge / <sup>69</sup> Ge / <sup>65</sup> Ga / <sup>66</sup> Ga / <sup>67</sup> Ga / <sup>63</sup> Zn / <sup>60</sup> Cu / <sup>61</sup> Cu, E=51-164 MeV; measured reaction products recoils, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , angular momentum. Comparison with statistical code PACE-2. JOUR JPGPE 37 115101  |
|                  | 2010BA16 | NUCLEAR REACTIONS <sup>76</sup> Ge, <sup>74</sup> Ge, Ge(p, X) <sup>67</sup> Ge / <sup>68</sup> Ge / <sup>69</sup> Ge / <sup>71</sup> As / <sup>74</sup> As / <sup>65</sup> Zn / <sup>60</sup> Co, E=100 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR PANUE 73 1106   |
|                  | 2010MI18 | NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>16</sup> O, X) <sup>68</sup> Ge / <sup>71</sup> Se / <sup>72</sup> Se / <sup>71</sup> As / <sup>72</sup> Br, E=40-60 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , $\gamma$ -ray energies and intensities. Comparison with evaporation codes CASCADE and PACE 4. JOUR RJPHE 55 712   |
| <sup>71</sup> Se | 2010MI18 | NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>16</sup> O, X) <sup>68</sup> Ge / <sup>71</sup> Se / <sup>72</sup> Se / <sup>71</sup> As / <sup>72</sup> Br, E=40-60 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , $\gamma$ -ray energies and intensities. Comparison with evaporation codes CASCADE and PACE 4. JOUR RJPHE 55 712   |
| <sup>71</sup> Br | 2008SAZF | ATOMIC MASSES <sup>68,70</sup> Se, <sup>70,71</sup> Br; measured mass using LEBIT facility. Results on CD only. CONF E.Lansing (NS2008),P172,Savory  |

KEYNUMBERS AND KEYWORDS

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**A=71 (continued)**

<sup>71</sup>Kr      2008NAZR      NUCLEAR REACTIONS Ca(<sup>36</sup>Na, np), E=103 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$ -coin; deduced E, J,  $\pi$ ; Ca(<sup>32</sup>S, x)<sup>71</sup>Kr, E not given; Ca(<sup>33</sup>S, x)<sup>71</sup>Kr, E not given; measured E $\gamma$ , I $\gamma$ . Results on CD only. CONF E.Lansing (NS2008),P4,Nara Singh

**A=72**

<sup>72</sup>Co      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali

2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679

<sup>72</sup>Ni      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali

2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679

2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806

<sup>72</sup>Cu      2008Y0ZV      RADIOACTIVITY <sup>21</sup>Mg;<sup>21</sup>F;<sup>71</sup>Cu;<sup>72</sup>Cu; measured  $\beta$  asymmetry using laser spectroscopy; deduced ground state  $\mu$ , quadrupole moment, spin. Results on CD only. CONF E.Lansing (NS2008),P63,Yordanov

2010FL02      NUCLEAR MOMENTS <sup>72</sup>Cu, <sup>74</sup>Cu; measured resonance fluorescence spectra, hyperfine structure parameters, spins, static magnetic dipole and electric quadrupole moments of the ground states using collinear laser spectroscopy at the CERN on-Line Isotope Mass Separator (ISOLDE) facility. Comparison with shell-model calculations using the JUN45 interaction. JOUR PRVCA 82 041302

KEYNUMBERS AND KEYWORDS

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**A=72 (continued)**

<sup>72</sup> Ge	2008STZT	RADIOACTIVITY <sup>98</sup> Mo, <sup>72,76</sup> Ge; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin; deduced attenuation, g-factor. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P379
<sup>72</sup> As	2010AL19	NUCLEAR REACTIONS <sup>55</sup> Mn( <sup>20</sup> Ne, X) <sup>70</sup> Se / <sup>70</sup> As / <sup>71</sup> As / <sup>72</sup> As / <sup>66</sup> Ge / <sup>67</sup> Ge / <sup>69</sup> Ge / <sup>65</sup> Ga / <sup>66</sup> Ga / <sup>67</sup> Ga / <sup>63</sup> Zn / <sup>60</sup> Cu / <sup>61</sup> Cu, E=51-164 MeV; measured reaction products recoils, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , angular momentum.Comparison with statistical code PACE-2. JOUR JPGPE 37 115101
	2010PA29	NUCLEAR REACTIONS <sup>56</sup> Fe( <sup>19</sup> F, n2p) <sup>72</sup> As, E=60 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma(\theta)$ , $\gamma(\theta, H, t)$ , and magnetic moment. JOUR PRVCA 82 044313
	2010PA29	NUCLEAR MOMENTS <sup>72</sup> As; measured magnetic moment by time-integral perturbed angular distributions method. Comparison with shell-model calculations. JOUR PRVCA 82 044313
<sup>72</sup> Se	2008LJZZ	NUCLEAR REACTIONS <sup>40</sup> Ca( <sup>36</sup> Ar, 2p $\alpha$ ), E not given; <sup>40</sup> Ca( <sup>36</sup> Ar, 4p), E not given; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin using plunger technique; deduced <sup>70</sup> Se T <sub>1/2</sub> , B(E2), deformation; calculated E, J, $\pi$ , configuration mixing, shape coexistence. Results on CD only. CONF E.Lansing (NS2008),P8,Ljungvall
	2010MI18	NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>16</sup> O, X) <sup>68</sup> Ge / <sup>71</sup> Se / <sup>72</sup> Se / <sup>71</sup> As / <sup>72</sup> Br, E=40-60 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , $\gamma$ -ray energies and intensities. Comparison with evaporation codes CASCADE and PACE 4. JOUR RJPHE 55 712
<sup>72</sup> Br	2010MI18	NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>16</sup> O, X) <sup>68</sup> Ge / <sup>71</sup> Se / <sup>72</sup> Se / <sup>71</sup> As / <sup>72</sup> Br, E=40-60 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , $\gamma$ -ray energies and intensities. Comparison with evaporation codes CASCADE and PACE 4. JOUR RJPHE 55 712

**A=73**

<sup>73</sup> Fe	2010OH02	NUCLEAR REACTIONS Be, Pb( <sup>238</sup> U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup> Mn, <sup>73,74</sup> Fe, <sup>76</sup> Co, <sup>79</sup> Ni, <sup>81,82</sup> Cu, <sup>84,85</sup> Zn, <sup>87</sup> Ga, <sup>90</sup> Ge, <sup>95</sup> Se, <sup>98</sup> Br, <sup>101</sup> Kr, <sup>103</sup> Rb, <sup>106,107</sup> Sr, <sup>108,109</sup> Y, <sup>111,112</sup> Zr, <sup>114,115</sup> Nb, <sup>115,116,117</sup> Mo, <sup>119,120</sup> Tc, <sup>121,122,123,124</sup> Ru, <sup>123,124,125,126</sup> Rh, <sup>127,128</sup> Pd, <sup>133</sup> Cd, <sup>138</sup> Sn, <sup>140</sup> Sb, <sup>143</sup> Te, <sup>145</sup> I, <sup>148</sup> Xe, <sup>152</sup> Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF-B $\rho$ method. JOUR JUPSA 79 073201
<sup>73</sup> Co	2008RAZS	RADIOACTIVITY <sup>71,72,73,74,75</sup> Co( $\beta^-$ )[from <sup>9</sup> Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin. <sup>71,73</sup> Ni, <sup>71,72,73</sup> Co deduced levels, J, $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
	2008RAZV	RADIOACTIVITY <sup>71</sup> Co( $\beta^-$ ), <sup>72</sup> Co( $\beta^-$ ), <sup>73</sup> Co( $\beta^-$ ), <sup>74</sup> Co( $\beta^-$ ), <sup>75</sup> Co( $\beta^-$ )[from <sup>9</sup> Be( <sup>86</sup> Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\beta$ -delayed neutron decay; deduced <sup>71,73</sup> Ni E, J, $\pi$ ; calculated <sup>69,71,73,75,77</sup> Ni E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679

**A=73 (continued)**

- 2010H012 RADIOACTIVITY  $^{73,74,75}\text{Co}$ ,  $^{75,76,77,78}\text{Ni}$ ,  $^{76,77,78,79,80}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{81,82}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$ [from  $\text{Be}^{(86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $\beta$  spectra,  $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives,  $P(n)$  using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis.  $A=1-210$ ; calculated abundances with classical r-process and HEW models using known decay data.  $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- 2010RAZY RADIOACTIVITY  $^{71,73}\text{Co}(\beta^-)$ [from  $^9\text{Be}^{(86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -, (implant ions) $\beta\gamma$ -coin, half-lives using SeGA array.  $^{71,73}\text{Ni}$ ; deduced levels,  $J$ ,  $\pi$ , logft values. Comparisons with shell-model calculations. PREPRINT Rajabali,11/7/2010
- $^{73}\text{Ni}$  2008RAZS RADIOACTIVITY  $^{71,72,73,74,75}\text{Co}(\beta^-)$ [from  $^9\text{Be}^{(86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin.  $^{71,73}\text{Ni}$ ,  $^{71,72,73}\text{Co}$  deduced levels,  $J$ ,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZY RADIOACTIVITY  $^{71}\text{Co}(\beta^-)$ ,  $^{72}\text{Co}(\beta^-)$ ,  $^{73}\text{Co}(\beta^-)$ ,  $^{74}\text{Co}(\beta^-)$ ,  $^{75}\text{Co}(\beta^-)$ [from  $^9\text{Be}^{(86}\text{Kr}, \text{x})$ ,  $E=140$  MeV / nucleon fragmentation]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced  $^{71,73}\text{Ni}$   $E$ ,  $J$ ,  $\pi$ ; calculated  $^{69,71,73,75,77}\text{Ni}$   $E$ ,  $J$ ,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010H012 RADIOACTIVITY  $^{73,74,75}\text{Co}$ ,  $^{75,76,77,78}\text{Ni}$ ,  $^{76,77,78,79,80}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{81,82}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$ [from  $\text{Be}^{(86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $\beta$  spectra,  $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives,  $P(n)$  using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis.  $A=1-210$ ; calculated abundances with classical r-process and HEW models using known decay data.  $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- 2010RAZY RADIOACTIVITY  $^{71,73}\text{Co}(\beta^-)$ [from  $^9\text{Be}^{(86}\text{Kr}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -, (implant ions) $\beta\gamma$ -coin, half-lives using SeGA array.  $^{71,73}\text{Ni}$ ; deduced levels,  $J$ ,  $\pi$ , logft values. Comparisons with shell-model calculations. PREPRINT Rajabali,11/7/2010
- $^{73}\text{Cu}$  2010DA06 NUCLEAR REACTIONS  $\text{Ni}^{(86}\text{Kr}, \text{X})$ ,  $E=60.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma(t)$ . Identification of  $A$  and  $Z$  by energy-loss, total-kinetic-energy, and time-of-flight measurements.  $^{50}\text{K}$ ,  $^{60}\text{V}$ ,  $^{62,64}\text{Mn}$ ,  $^{65,67}\text{Fe}$ ,  $^{68,70}\text{Co}$ ,  $^{75}\text{Cu}$ ,  $^{78}\text{Zn}$ ,  $^{78}\text{Ga}$ ; deduced isomers, half-lives,  $J$ ,  $\pi$ , multiplicities.  $^{69,71,73}\text{Cu}$ ; deduced  $B(M1)$ ,  $B(E2)$  values.  $^{75}\text{Cu}$ ; deduced levels,  $J$ ,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations.  $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of  $1 / 2^-$ ,  $3 / 2^-$  and  $5 / 2^-$  states. JOUR PRVCA 81 034304



KEYNUMBERS AND KEYWORDS

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**A=73 (continued)**

- <sup>73</sup>Ga      2010CH16      NUCLEAR REACTIONS U(p, X)<sup>67</sup>Ga / <sup>69</sup>Ga / <sup>71</sup>Ga / <sup>73</sup>Ga / <sup>75</sup>Ga / <sup>77</sup>Ga / <sup>79</sup>Ga / <sup>81</sup>Ga, E=1.4 GeV; measured optical hfs spectra; deduced ground J,  $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502
- <sup>73</sup>Se      2010PAZY      NUCLEAR REACTIONS <sup>74,82</sup>Se( $\gamma$ , n), (n, 2n), E $\gamma$ =27, 28, 29, 30 MeV bremsstrahlung, E $n$ =14 MeV; measured isomeric yield ratios with activation method. <sup>81m,g</sup>Se; deduced Y $_m$  / Y $_g$  vs E $\gamma$ . CONF St.-Petersburg,P186,Palvanov
- <sup>73</sup>Kr      2010ST05      NUCLEAR REACTIONS <sup>40</sup>Ca(<sup>40</sup>Ca, n2p $\alpha$ )<sup>73</sup>Kr, E=185 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, p $\gamma\gamma$ -, n $\gamma\gamma$ -,  $\alpha\gamma\gamma$ -coin, DCO using EUROBALL spectrometer. <sup>73</sup>Kr; deduced levels, J,  $\pi$ , rotational bands, moment of inertia. Comparison with band structures of <sup>75</sup>Kr and <sup>77</sup>Kr and with configuration-dependent Cranked Nilsson-Strutinsky calculations. JOUR PRVCA 81 054307

**A=74**

- <sup>74</sup>Fe      2010OH02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>74</sup>Co      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806

**A=74 (continued)**

- <sup>74</sup>Ni      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010A001      NUCLEAR REACTIONS <sup>1</sup>H(<sup>74</sup>Ni, <sup>74</sup>Ni'), E=81 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; <sup>74</sup>Ni; deduced J,  $\pi$ , level energy,  $\sigma$ , deformation length and parameter. JOUR PYLBB 692 302
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>74</sup>Cu      2010FL02      NUCLEAR MOMENTS <sup>72</sup>Cu, <sup>74</sup>Cu; measured resonance fluorescence spectra, hyperfine structure parameters, spins, static magnetic dipole and electric quadrupole moments of the ground states using collinear laser spectroscopy at the CERN on-Line Isotope Mass Separator (ISOLDE) facility. Comparison with shell-model calculations using the JUN45 interaction. JOUR PRVCA 82 041302
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>74</sup>Zn      2008AZZZ      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>70</sup>Ni, <sup>70</sup>Ni'), (<sup>74</sup>Zn, <sup>74</sup>Zn'), (<sup>76</sup>Ge, <sup>76</sup>Ge'), E=60 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , reaction products; <sup>70</sup>Ni, <sup>74</sup>Zn, <sup>76</sup>Ge; deduced level energies, J,  $\pi$ ,  $\sigma$ , B(E2). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez
- <sup>74</sup>Ge      2009WAZW      NUCLEAR REACTIONS <sup>77</sup>Se, <sup>99</sup>Ru, <sup>101</sup>Ru, <sup>123</sup>Te(n,  $\alpha$ ), E=thermal; measured E $\alpha$ , I $\alpha$ ; deduced E, J,  $\pi$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P84,Wagemans
- 2010K015      ATOMIC MASSES <sup>74</sup>Ge, <sup>74</sup>Se; measured masses using JYFLTRAP penning trap; deduced Q-value for neutrino-less 2EC decay. JOUR PYLBB 684 17

KEYNUMBERS AND KEYWORDS

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**A=74 (continued)**

	2010K015	RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ ; deduced Q-value for neutrino-less 2EC decay from atomic mass measurements; calculated $T_{1/2}$ and nuclear matrix elements using QRPA wave functions in a multiple-commutator model. JOUR PYLBB 684 17
	2010M003	ATOMIC MASSES $^{74,76}\text{Se}$ , $^{74,76}\text{Ge}$ ; measured cyclotron frequencies in a Penning-trap system relative to $^{84}\text{Kr}$ , atomic masses and systematic shifts for ion pairs. Comparisons with previous measurements and with AME-2003. JOUR PRVCA 81 032501
	2010M003	RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ , $^{76}\text{Ge}(2\beta^-)$ ; deduced Q values from measured masses. Discussed resonant enhancement for neutrinoless double-electron capture decay of $^{74}\text{Se}$ . JOUR PRVCA 81 032501
$^{74}\text{As}$	2008FAZU	RADIOACTIVITY $^{74}\text{As}$ [from $^{74}\text{Ge}(p, n)$ ]; measured $E_\gamma$ , $I_\gamma$ ; deduced intensity ratio $\beta^-$ -decay and $\beta^+$ / EC-decay. REPT ATOMKI 2008 Annual,P22,Farkas
	2010BA16	NUCLEAR REACTIONS $^{76}\text{Ge}$ , $^{74}\text{Ge}$ , $\text{Ge}(p, X)^{67}\text{Ge}$ / $^{68}\text{Ge}$ / $^{69}\text{Ge}$ / $^{71}\text{As}$ / $^{74}\text{As}$ / $^{65}\text{Zn}$ / $^{60}\text{Co}$ , $E=100$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . JOUR PANUE 73 1106
$^{74}\text{Se}$	2010K015	ATOMIC MASSES $^{74}\text{Ge}$ , $^{74}\text{Se}$ ; measured masses using JYFLTRAP penning trap; deduced Q-value for neutrino-less 2EC decay. JOUR PYLBB 684 17
	2010K015	RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ ; deduced Q-value for neutrino-less 2EC decay from atomic mass measurements; calculated $T_{1/2}$ and nuclear matrix elements using QRPA wave functions in a multiple-commutator model. JOUR PYLBB 684 17
	2010M003	ATOMIC MASSES $^{74,76}\text{Se}$ , $^{74,76}\text{Ge}$ ; measured cyclotron frequencies in a Penning-trap system relative to $^{84}\text{Kr}$ , atomic masses and systematic shifts for ion pairs. Comparisons with previous measurements and with AME-2003. JOUR PRVCA 81 032501
	2010M003	RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ , $^{76}\text{Ge}(2\beta^-)$ ; deduced Q values from measured masses. Discussed resonant enhancement for neutrinoless double-electron capture decay of $^{74}\text{Se}$ . JOUR PRVCA 81 032501
$^{74}\text{Br}$	2010SP05	NUCLEAR REACTIONS $^{77,78,80}\text{Se}(p, n)$ , $(p, 2n)$ , $(p, 4n)^{77}\text{Br}$ , $^{80}\text{Se}(p, n)$ , $E=21-85$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749
$^{74}\text{Rb}$	2008SVZX	RADIOACTIVITY $^{62}\text{Ga}$ ; measured $I_\beta$ , $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft, branching ratio; calculated isospin symmetry breaking using shell model; $^{26}\text{Na}(\beta^-)$ ; measured $I_\beta(t)$ , $I_\gamma(t)$ ; deduced $T_{1/2}$ ; $^{18}\text{Ne}$ ; measured $E_\gamma$ , $I_\gamma$ , $I_\beta(t)$ , $\beta\gamma$ -coin, $\gamma\gamma$ -coin; deduced $T_{1/2}$ ; $^{38}\text{K}$ ; measured $I_\beta(t)$ ; deduced isomer decay, $T_{1/2}$ , M3 branching ratio, log ft; $^{74}\text{Rb}$ ; measured decay products; deduced $T_{1/2}$ , branching ratio, log ft. Results on CD only. CONF E.Lansing (NS2008),P19,Svensson

## A=75

- <sup>75</sup>Co      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>75</sup>Ni      2008RAZS      RADIOACTIVITY <sup>71,72,73,74,75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon];measured E(particle), I(particle), E $\gamma$ , I $\gamma$ , E $\beta$ , I $\beta$ ,  $\beta\gamma$ -coin,  $\gamma\gamma$ -coin. <sup>71,73</sup>Ni, <sup>71,72,73</sup>Co deduced levels, J,  $\pi$ . Comparison with shell model calculation with NR78 interaction. Results on CD only. CONF E.Lansing (NS2008),P167,Rajabali
- 2008RAZV      RADIOACTIVITY <sup>71</sup>Co( $\beta^-$ ), <sup>72</sup>Co( $\beta^-$ ), <sup>73</sup>Co( $\beta^-$ ), <sup>74</sup>Co( $\beta^-$ ), <sup>75</sup>Co( $\beta^-$ )[from <sup>9</sup>Be(<sup>86</sup>Kr, x), E=140 MeV / nucleon fragmentation]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta$ -delayed neutron decay; deduced <sup>71,73</sup>Ni E, J,  $\pi$ ; calculated <sup>69,71,73,75,77</sup>Ni E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P679
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806

**A=75 (continued)**

- <sup>75</sup>Cu      2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multipolarities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>75</sup>Zn      2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>75</sup>Ga      2010CH16      NUCLEAR REACTIONS U(p, X)<sup>67</sup>Ga / <sup>69</sup>Ga / <sup>71</sup>Ga / <sup>73</sup>Ga / <sup>75</sup>Ga / <sup>77</sup>Ga / <sup>79</sup>Ga / <sup>81</sup>Ga, E=1.4 GeV; measured optical hfs spectra; deduced ground J,  $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502
- <sup>75</sup>Ge      2008VLZZ      NUCLEAR REACTIONS <sup>72,74</sup>Ge(n,  $\alpha$ ), E=9.6, 10.6, 11.1, 11.4 MeV; <sup>76</sup>Ge(n, 2n), E=9.6, 10.6, 11.1, 11.4 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$  isomer,  $\sigma$  ground state; calculated  $\sigma$  isomer,  $\sigma$  ground state using EMPIRE; <sup>191</sup>Ir(n, 2n), E=10.0, 10.5, 11.0, 11.3 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced  $\sigma$  isomer,  $\sigma$  ground state; calculated  $\sigma$  isomer,  $\sigma$  ground state using STAPRE-F. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P471
- 2009VLZZ      NUCLEAR REACTIONS <sup>72,74</sup>Ge(n,  $\alpha$ ), E=9.6-11.4 MeV; <sup>76</sup>Ge(n, 2n), E=9.6-11.4 MeV; measured <sup>69,71</sup>Zn, <sup>75</sup>Ge E $\gamma$ , I $\gamma$ , isomeric transition; deduced  $\sigma$ (g),  $\sigma$ (m); calculated  $\sigma$ (g),  $\sigma$ (m) using EMPIRE-II code; analyzed influence of pre-equilibrium. Compared to available data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P627,Vlastou
- 2010ME01      NUCLEAR REACTIONS <sup>74</sup>Ge(n,  $\gamma$ )<sup>75</sup>Ge / <sup>75m</sup>Ge, E=thermal; measured E $\gamma$ , I $\gamma$ ,  $\sigma$  using activation method and cold neutrons. Comparison with previous results. JOUR PRVCA 81 027603

KEYNUMBERS AND KEYWORDS

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**A=75 (continued)**

<sup>75</sup> As	2009HAZX	NUCLEAR REACTIONS <sup>74</sup> Ge(p, $\gamma$ ), E=2-3 MeV; measured E $\gamma$ , I $\gamma$ using HPGe detectors of HORUS $\gamma$ array. Further evaluation in progress. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P298,Hasper
<sup>75</sup> Se	2009IGZZ	NUCLEAR REACTIONS <sup>74,77</sup> Se(n, $\gamma$ ), E=15-100keV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , d $\sigma$ (E $\gamma$ ). Compared to other measurements and to JENDL-3.3, ENDF / B-VII.0 and ENDF / B-VI.8. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P376,Igashira
<sup>75</sup> Br	2010SP05	NUCLEAR REACTIONS <sup>77,78,80</sup> Se(p, n), (p, 2n), (p, 4n) <sup>77</sup> Br, <sup>80</sup> Se(p, n), E=21-85 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749
<sup>75</sup> Kr	2010TR05	NUCLEAR REACTIONS <sup>50</sup> Cr( <sup>28</sup> Si, n2p), E=90 MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ , t); deduced T <sub>1/2</sub> , transitional quadrupole moment. Comparison with nearby nuclei. JOUR NUPAB 834 72c

**A=76**

<sup>76</sup> Co	20100H02	NUCLEAR REACTIONS Be, Pb( <sup>238</sup> U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup> Mn, <sup>73,74</sup> Fe, <sup>76</sup> Co, <sup>79</sup> Ni, <sup>81,82</sup> Cu, <sup>84,85</sup> Zn, <sup>87</sup> Ga, <sup>90</sup> Ge, <sup>95</sup> Se, <sup>98</sup> Br, <sup>101</sup> Kr, <sup>103</sup> Rb, <sup>106,107</sup> Sr, <sup>108,109</sup> Y, <sup>111,112</sup> Zr, <sup>114,115</sup> Nb, <sup>115,116,117</sup> Mo, <sup>119,120</sup> Tc, <sup>121,122,123,124</sup> Ru, <sup>123,124,125,126</sup> Rh, <sup>127,128</sup> Pd, <sup>133</sup> Cd, <sup>138</sup> Sn, <sup>140</sup> Sb, <sup>143</sup> Te, <sup>145</sup> I, <sup>148</sup> Xe, <sup>152</sup> Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta$ E-TOF-B $\rho$ method. JOUR JUPSA 79 073201
<sup>76</sup> Ni	2010H012	RADIOACTIVITY <sup>73,74,75</sup> Co, <sup>75,76,77,78</sup> Ni, <sup>76,77,78,79,80</sup> Cu, <sup>79,80,81</sup> Zn, <sup>81,82</sup> Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup> Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
<sup>76</sup> Cu	2008ILZZ	RADIOACTIVITY <sup>76</sup> Cu( $\beta^-$ ), <sup>76</sup> Cu( $\beta^-$ ), <sup>77</sup> Cu( $\beta^-$ ), <sup>78</sup> Cu( $\beta^-$ ), <sup>79</sup> Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup> Zn E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
	2008WIZO	RADIOACTIVITY <sup>76,77,78,79</sup> Cu, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup> Zn, <sup>82,83</sup> Ge deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger

KEYNUMBERS AND KEYWORDS

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**A=76 (continued)**

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| 2010H012                  | RADIOACTIVITY <sup>73,74,75</sup> Co, <sup>75,76,77,78</sup> Ni, <sup>76,77,78,79,80</sup> Cu, <sup>79,80,81</sup> Zn, <sup>81,82</sup> Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup> Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| <sup>76</sup> Zn 2008ILZZ | RADIOACTIVITY <sup>76</sup> Cu( $\beta^-$ ), <sup>76</sup> Cu( $\beta^-$ ), <sup>77</sup> Cu( $\beta^-$ ), <sup>78</sup> Cu( $\beta^-$ ), <sup>79</sup> Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup> Zn E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687   |
| 2008WIZO                  | RADIOACTIVITY <sup>76,77,78,79</sup> Cu, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup> Zn, <sup>82,83</sup> Ge deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger  |
| 2009IL01                  | RADIOACTIVITY <sup>77</sup> Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ , $\beta$ -spectra, $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup> Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup> Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup> Zn, <sup>76,77</sup> Ga, <sup>77</sup> Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup> Zn; deduced levels, J, $\pi$ , and half-life. Comparison with <sup>73</sup> Cu to <sup>73</sup> Zn decay. JOUR PRVCA 80 054304   |
| 2010H012                  | RADIOACTIVITY <sup>73,74,75</sup> Co, <sup>75,76,77,78</sup> Ni, <sup>76,77,78,79,80</sup> Cu, <sup>79,80,81</sup> Zn, <sup>81,82</sup> Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup> Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| <sup>76</sup> Ga 2009IL01 | RADIOACTIVITY <sup>77</sup> Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ , $\beta$ -spectra, $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup> Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup> Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup> Zn, <sup>76,77</sup> Ga, <sup>77</sup> Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup> Zn; deduced levels, J, $\pi$ , and half-life. Comparison with <sup>73</sup> Cu to <sup>73</sup> Zn decay. JOUR PRVCA 80 054304   |
| <sup>76</sup> Ge 2008AZZZ | NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>70</sup> Ni, <sup>70</sup> Ni'), ( <sup>74</sup> Zn, <sup>74</sup> Zn'), ( <sup>76</sup> Ge, <sup>76</sup> Ge'), E=60 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , reaction products; <sup>70</sup> Ni, <sup>74</sup> Zn, <sup>76</sup> Ge; deduced level energies, J, $\pi$ , $\sigma$ , B(E2). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez  |

KEYNUMBERS AND KEYWORDS

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**A=76 (continued)**

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|                  | 2008CHZL | RADIOACTIVITY $^{76}\text{Ge}(2\beta^-);^{36}\text{Ar}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , electron spectrum; deduced $2\beta(0\nu)$ -decay $T_{1/2}$ . Heidelberg-Moscow and Gerda experiments. PREPRINT arXiv:0812.1206v1 [nucl-ex]  |
|                  | 2008STZT | RADIOACTIVITY $^{98}\text{Mo}$ , $^{72,76}\text{Ge}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced attenuation, g-factor. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P379  |
|                  | 2009IL01 | RADIOACTIVITY $^{77}\text{Cu}(\beta^-)$ , $(\beta^-n)$ [from U(p, X), E not given]; measured $E\gamma$ , $I\gamma$ , $\beta$ -spectra, $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. Isobarically purified $^{77}\text{Cu}$ beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. $^{77m}\text{Zn}(\text{IT})$ ; measured $E\gamma$ , half-life and decay branches. $^{76,77}\text{Zn}$ , $^{76,77}\text{Ga}$ , $^{77}\text{Ge}(\beta^-)$ ; measured $E\gamma$ . $^{76,77}\text{Zn}$ ; deduced levels, J, $\pi$ , and half-life. Comparison with $^{73}\text{Cu}$ to $^{73}\text{Zn}$ decay. JOUR PRVCA 80 054304 |
|                  | 2010M003 | ATOMIC MASSES $^{74,76}\text{Se}$ , $^{74,76}\text{Ge}$ ; measured cyclotron frequencies in a Penning-trap system relative to $^{84}\text{Kr}$ , atomic masses and systematic shifts for ion pairs. Comparisons with previous measurements and with AME-2003. JOUR PRVCA 81 032501   |
|                  | 2010M003 | RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ , $^{76}\text{Ge}(2\beta^-)$ ; deduced Q values from measured masses. Discussed resonant enhancement for neutrinoless double-electron capture decay of $^{74}\text{Se}$ . JOUR PRVCA 81 032501  |
| $^{76}\text{Se}$ | 2008CHZL | RADIOACTIVITY $^{76}\text{Ge}(2\beta^-);^{36}\text{Ar}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , electron spectrum; deduced $2\beta(0\nu)$ -decay $T_{1/2}$ . Heidelberg-Moscow and Gerda experiments. PREPRINT arXiv:0812.1206v1 [nucl-ex]  |
|                  | 2010M003 | ATOMIC MASSES $^{74,76}\text{Se}$ , $^{74,76}\text{Ge}$ ; measured cyclotron frequencies in a Penning-trap system relative to $^{84}\text{Kr}$ , atomic masses and systematic shifts for ion pairs. Comparisons with previous measurements and with AME-2003. JOUR PRVCA 81 032501   |
|                  | 2010M003 | RADIOACTIVITY $^{74}\text{Se}(2\text{EC})$ , $^{76}\text{Ge}(2\beta^-)$ ; deduced Q values from measured masses. Discussed resonant enhancement for neutrinoless double-electron capture decay of $^{74}\text{Se}$ . JOUR PRVCA 81 032501  |
| $^{76}\text{Br}$ | 2010SP05 | NUCLEAR REACTIONS $^{77,78,80}\text{Se}(p, n)$ , $(p, 2n)$ , $(p, 4n)$ $^{77}\text{Br}$ , $^{80}\text{Se}(p, n)$ , E=21-85 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749  |
| $^{76}\text{Kr}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |
| $^{76}\text{Sr}$ | 2010SC21 | NUCLEAR REACTIONS $^{40}\text{Ca}(^{40}\text{Ca}, \alpha)$ , E=50 MeV / nucleon; measured $E\alpha$ , $I\alpha$ , $\sigma$ , $\sigma(\theta)$ . $^{36}\text{Ar}$ ; deduced missing energy spectrum, levels, J, $\pi$ . Comparison of $\sigma(\theta)$ with calculations using time-dependent Schroedinger equation (TDSE). JOUR PRVCA 82 031301  |



## A=77

- <sup>77</sup>Ni      2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>77</sup>Cu      2008ILZZ      RADIOACTIVITY <sup>76</sup>Cu( $\beta^-$ ), <sup>76</sup>Cu( $\beta^-$ ), <sup>77</sup>Cu( $\beta^-$ ), <sup>78</sup>Cu( $\beta^-$ ), <sup>79</sup>Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup>Zn E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
- 2008WIZO      RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2009IL01      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ -spectra,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup>Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup>Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup>Zn, <sup>76,77</sup>Ga, <sup>77</sup>Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup>Zn; deduced levels, J,  $\pi$ , and half-life. Comparison with <sup>73</sup>Cu to <sup>73</sup>Zn decay. JOUR PRVCA 80 054304
- 2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multipolarities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-states. JOUR PRVCA 81 034304
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806

**A=77 (continued)**

- <sup>77</sup>Zn      2008ILZZ      RADIOACTIVITY <sup>76</sup>Cu( $\beta^-$ ), <sup>76</sup>Cu( $\beta^-$ ), <sup>77</sup>Cu( $\beta^-$ ), <sup>78</sup>Cu( $\beta^-$ ), <sup>79</sup>Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup>Zn E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
- 2008WIZO      RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2009IL01      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ -spectra,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup>Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup>Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup>Zn, <sup>76,77</sup>Ga, <sup>77</sup>Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup>Zn; deduced levels, J,  $\pi$ , and half-life. Comparison with <sup>73</sup>Cu to <sup>73</sup>Zn decay. JOUR PRVCA 80 054304
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>77</sup>Ga      2009IL01      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ -spectra,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup>Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup>Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup>Zn, <sup>76,77</sup>Ga, <sup>77</sup>Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup>Zn; deduced levels, J,  $\pi$ , and half-life. Comparison with <sup>73</sup>Cu to <sup>73</sup>Zn decay. JOUR PRVCA 80 054304
- 2010CH16      NUCLEAR REACTIONS U(p, X)<sup>67</sup>Ga / <sup>69</sup>Ga / <sup>71</sup>Ga / <sup>73</sup>Ga / <sup>75</sup>Ga / <sup>77</sup>Ga / <sup>79</sup>Ga / <sup>81</sup>Ga, E=1.4 GeV; measured optical hfs spectra; deduced ground J,  $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502
- <sup>77</sup>Ge      2009IL01      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from U(p, X), E not given]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ -spectra,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives. Isobarically purified <sup>77</sup>Cu beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. <sup>77m</sup>Zn(IT); measured E $\gamma$ , half-life and decay branches. <sup>76,77</sup>Zn, <sup>76,77</sup>Ga, <sup>77</sup>Ge( $\beta^-$ ); measured E $\gamma$ . <sup>76,77</sup>Zn; deduced levels, J,  $\pi$ , and half-life. Comparison with <sup>73</sup>Cu to <sup>73</sup>Zn decay. JOUR PRVCA 80 054304
- 2009MEZW      NUCLEAR REACTIONS <sup>76</sup>Ge(n,  $\gamma$ ), E $\approx$ 1.83 meV; measured E $\gamma$ , I $\gamma$ ; deduced <sup>77</sup>Ge ground-state  $\sigma$ , isomer  $\sigma$ , isomeric ratio. GERDA facility. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P559,Meierhofer

KEYNUMBERS AND KEYWORDS

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**A=77 (continued)**

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| 2010DE01         |          | NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge}$ / $^{82}\text{Br}$ / $^{85}\text{Kr}$ / $^{85}\text{Sr}$ / $^{85}\text{Y}$ / $^{87}\text{Kr}$ / $^{87}\text{Sr}$ / $^{87}\text{Y}$ / $^{88}\text{Kr}$ / $^{91}\text{Sr}$ / $^{91}\text{Y}$ / $^{92}\text{Sr}$ / $^{92}\text{Y}$ / $^{93}\text{Y}$ / $^{93}\text{Mo}$ / $^{93}\text{Tc}$ / $^{95}\text{Zr}$ / $^{95}\text{Nb}$ / $^{95}\text{Tc}$ / $^{96}\text{Nb}$ / $^{97}\text{Zr}$ / $^{97}\text{Nb}$ / $^{99}\text{Mo}$ / $^{99}\text{Tc}$ / $^{99}\text{Rh}$ / $^{101}\text{Tc}$ / $^{101}\text{Rh}$ / $^{103}\text{Ru}$ / $^{105}\text{Ru}$ / $^{105}\text{Rh}$ / $^{109}\text{In}$ / $^{111}\text{Pd}$ / $^{111}\text{Ag}$ / $^{112}\text{Pd}$ / $^{112}\text{Ag}$ / $^{113}\text{Ag}$ / $^{115}\text{Ag}$ / $^{115}\text{Cd}$ / $^{117}\text{Cd}$ / $^{117}\text{In}$ , E=50, 3500 MeV; measured $E\gamma$ , $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
| $^{77}\text{As}$ | 2009IL01 | RADIOACTIVITY $^{77}\text{Cu}(\beta^-)$ , $(\beta^-n)$ [from U(p, X), E not given]; measured $E\gamma$ , $I\gamma$ , $\beta$ -spectra, $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. Isobarically purified $^{77}\text{Cu}$ beams of 200 keV and 225 MeV obtained at the Holifield Radioactive Ion Beam Facility. $^{77m}\text{Zn}(\text{IT})$ ; measured $E\gamma$ , half-life and decay branches. $^{76,77}\text{Zn}$ , $^{76,77}\text{Ga}$ , $^{77}\text{Ge}(\beta^-)$ ; measured $E\gamma$ . $^{76,77}\text{Zn}$ ; deduced levels, J, $\pi$ , and half-life. Comparison with $^{73}\text{Cu}$ to $^{73}\text{Zn}$ decay. JOUR PRVCA 80 054304   |
| $^{77}\text{Br}$ | 2010SP05 | NUCLEAR REACTIONS $^{77,78,80}\text{Se}(\text{p}, \text{n})$ , $(\text{p}, 2\text{n})$ , $(\text{p}, 4\text{n})^{77}\text{Br}$ , $^{80}\text{Se}(\text{p}, \text{n})$ , E=21-85 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749   |
| $^{77}\text{Kr}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |

**A=78**

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| $^{78}\text{Ni}$ | 2010H012 | RADIOACTIVITY $^{73,74,75}\text{Co}$ , $^{75,76,77,78}\text{Ni}$ , $^{76,77,78,79,80}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{81,82}\text{Ga}(\beta^-)$ , $(\beta^-n)$ [from Be( $^{86}\text{Kr}$ , X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| $^{78}\text{Cu}$ | 2008ILZZ | RADIOACTIVITY $^{76}\text{Cu}(\beta^-)$ , $^{76}\text{Cu}(\beta^-)$ , $^{77}\text{Cu}(\beta^-)$ , $^{78}\text{Cu}(\beta^-)$ , $^{79}\text{Cu}(\beta^-)$ [from U(p, f)]; measured A(particle), Z(particle), $E\gamma$ , $I\gamma$ ; deduced $^{76,77,78,79}\text{Zn}$ E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687   |
|                  | 2008WIZO | RADIOACTIVITY $^{76,77,78,79}\text{Cu}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. $^{76,77,78}\text{Zn}$ , $^{82,83}\text{Ge}$ deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger  |

**A=78 (continued)**

- 2010H012 RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>78</sup>Zn 2008ILZZ RADIOACTIVITY <sup>76</sup>Cu( $\beta^-$ ), <sup>76</sup>Cu( $\beta^-$ ), <sup>77</sup>Cu( $\beta^-$ ), <sup>78</sup>Cu( $\beta^-$ ), <sup>79</sup>Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup>Zn E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
- 2008WIZO RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2010DA06 NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multipolarities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- 2010H012 RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>78</sup>Ga 2008FOZS NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. <sup>60</sup>Mn, <sup>78</sup>Ga, <sup>82</sup>Ga, <sup>92</sup>Br, <sup>95</sup>Rb, <sup>98</sup>Rb, <sup>92</sup>Y, <sup>101</sup>Y, <sup>112</sup>Tc deduced isomeric transition, T<sub>1/2</sub>, isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden

## A=78 (continued)

- 2010DA06 NUCLEAR REACTIONS Ni( $^{86}\text{Kr}$ , X), E=60.5 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma(t)$ . Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements.  $^{50}\text{K}$ ,  $^{60}\text{V}$ ,  $^{62,64}\text{Mn}$ ,  $^{65,67}\text{Fe}$ ,  $^{68,70}\text{Co}$ ,  $^{75}\text{Cu}$ ,  $^{78}\text{Zn}$ ,  $^{78}\text{Ga}$ ; deduced isomers, half-lives, J,  $\pi$ , multipolarities.  $^{69,71,73}\text{Cu}$ ; deduced B(M1), B(E2) values.  $^{75}\text{Cu}$ ; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations.  $^{69,71,73,75,77,79}\text{Cu}$ ; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2- states. JOUR PRVCA 81 034304
- 2010H012 RADIOACTIVITY  $^{73,74,75}\text{Co}$ ,  $^{75,76,77,78}\text{Ni}$ ,  $^{76,77,78,79,80}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{81,82}\text{Ga}(\beta^-)$ , ( $\beta^-n$ )[from Be( $^{86}\text{Kr}$ , X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data.  $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- $^{78}\text{Se}$  2009IGZZ NUCLEAR REACTIONS  $^{74,77}\text{Se}(n, \gamma)$ , E=15-100keV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ,  $d\sigma(E\gamma)$ . Compared to other measurements and to JENDL-3.3, ENDF / B-VII.0 and ENDF / B-VI.8. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P376,Igashira
- 2010GAZZ RADIOACTIVITY  $^{78}\text{Kr}(2\text{EC})$ ; measured  $T_{1/2}$  lower limit of ( $2\nu+0\nu$ )-accompanied decay. Baksan Underground Neutrino Observatory, proportional counter filled with Kr (enriched / natural). CONF St.-Petersburg,P100,Gavriljuk
- 2010KA17 NUCLEAR REACTIONS  $^{77}\text{Se}$ ,  $^{197}\text{Au}(n, \gamma)$ , E=15-100, 510 keV; measured TOF,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ,  $\gamma$ -ray multiplicities. Comparison with JENDL-3.3, ENDF / B-VII.0, ENDF / B-VI.8 libraries. JOUR JNSTA 47 634
- $^{78}\text{Br}$  2010SP05 NUCLEAR REACTIONS  $^{77,78,80}\text{Se}(p, n)$ , ( $p, 2n$ ), ( $p, 4n$ ) $^{77}\text{Br}$ ,  $^{80}\text{Se}(p, n)$ , E=21-85 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  and their uncertainties, integral yields. JOUR RAACA 98 749
- $^{78}\text{Kr}$  2010GAZZ RADIOACTIVITY  $^{78}\text{Kr}(2\text{EC})$ ; measured  $T_{1/2}$  lower limit of ( $2\nu+0\nu$ )-accompanied decay. Baksan Underground Neutrino Observatory, proportional counter filled with Kr (enriched / natural). CONF St.-Petersburg,P100,Gavriljuk
- $^{78}\text{Sr}$  2010HE16 NUCLEAR REACTIONS  $^{40}\text{Ca}(^{40}\text{Ca}, 2p)$ ,  $^{48}\text{Ca}(^{48}\text{Ca}, 2p)$ , E=80 MeV / nucleon; measured  $E_p$ ,  $I_p(\theta)$ , pp-coin, Z(particle), A(particle), particle multiplicity, total transverse energy; deduced pp correlation function, emitting source size. JOUR NUPAB 834 552c

## A=79

- <sup>79</sup>Ni      20100H02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta$ E-TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>79</sup>Cu      2008ILZZ      RADIOACTIVITY <sup>76</sup>Cu( $\beta^-$ ), <sup>76</sup>Cu( $\beta^-$ ), <sup>77</sup>Cu( $\beta^-$ ), <sup>78</sup>Cu( $\beta^-$ ), <sup>79</sup>Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup>Zn E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
- 2008WIZO      RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2010DA06      NUCLEAR REACTIONS Ni(<sup>86</sup>Kr, X), E=60.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -coin, and  $\gamma$ (t). Identification of A and Z by energy-loss, total-kinetic-energy, and time-of-flight measurements. <sup>50</sup>K, <sup>60</sup>V, <sup>62,64</sup>Mn, <sup>65,67</sup>Fe, <sup>68,70</sup>Co, <sup>75</sup>Cu, <sup>78</sup>Zn, <sup>78</sup>Ga; deduced isomers, half-lives, J,  $\pi$ , multipolarities. <sup>69,71,73</sup>Cu; deduced B(M1), B(E2) values. <sup>75</sup>Cu; deduced levels, J,  $\pi$ , and transition rates for proposed level-scheme scenarios and comparisons with shell-model calculations. <sup>69,71,73,75,77,79</sup>Cu; shell model calculations of 1 / 2-, 3 / 2- and 5 / 2-states. JOUR PRVCA 81 034304
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>79</sup>Zn      2008ILZZ      RADIOACTIVITY <sup>76</sup>Cu( $\beta^-$ ), <sup>76</sup>Cu( $\beta^-$ ), <sup>77</sup>Cu( $\beta^-$ ), <sup>78</sup>Cu( $\beta^-$ ), <sup>79</sup>Cu( $\beta^-$ )[from U(p, f)]; measured A(particle), Z(particle), E $\gamma$ , I $\gamma$ ; deduced <sup>76,77,78,79</sup>Zn E, J,  $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P687
- 2008WIZO      RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger

KEYNUMBERS AND KEYWORDS

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**A=79 (continued)**

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| 2010H012         |          | RADIOACTIVITY <sup>73,74,75</sup> Co, <sup>75,76,77,78</sup> Ni, <sup>76,77,78,79,80</sup> Cu, <sup>79,80,81</sup> Zn, <sup>81,82</sup> Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup> Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| <sup>79</sup> Ga | 2010CH16 | NUCLEAR REACTIONS U(p, X) <sup>67</sup> Ga / <sup>69</sup> Ga / <sup>71</sup> Ga / <sup>73</sup> Ga / <sup>75</sup> Ga / <sup>77</sup> Ga / <sup>79</sup> Ga / <sup>81</sup> Ga, E=1.4 GeV; measured optical hfs spectra; deduced ground J, $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502   |
|                  | 2010H012 | RADIOACTIVITY <sup>73,74,75</sup> Co, <sup>75,76,77,78</sup> Ni, <sup>76,77,78,79,80</sup> Cu, <sup>79,80,81</sup> Zn, <sup>81,82</sup> Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be( <sup>86</sup> Kr, X), E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup> Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| <sup>79</sup> Se | 2010KI03 | NUCLEAR REACTIONS <sup>80</sup> Se( $\gamma$ , n), E=10.5-16 MeV; measured emitted neutrons; deduced $\sigma$ . Laser-Compton scattering (LCS). JOUR JNSTA 47 367  |
| <sup>79</sup> Br | 2010SP05 | NUCLEAR REACTIONS <sup>77,78,80</sup> Se(p, n), (p, 2n), (p, 4n) <sup>77</sup> Br, <sup>80</sup> Se(p, n), E=21-85 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749  |
| <sup>79</sup> Kr | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup> Kr, <sup>111</sup> Cd, <sup>121,124,126</sup> I, <sup>120,121,122,123,125,127,129,131,133</sup> Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup> Hg, <sup>204,205,206,207,208,209,210</sup> At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |

## A=80

- <sup>80</sup>Cu      2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>80</sup>Zn      2008DEZP      NUCLEAR REACTIONS <sup>192</sup>Os, <sup>238</sup>U(<sup>82</sup>Se, X)<sup>81</sup>Ga / <sup>82</sup>Ge / <sup>83</sup>As / <sup>80</sup>Zn, E=460, 505 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced level energies, J,  $\pi$ . Comparison with shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P73,De Angelis
- 2008KOYY      RADIOACTIVITY <sup>17</sup>Ne; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; <sup>38</sup>Ca; <sup>26</sup>Al; <sup>80</sup>Zn;<sup>81</sup>Zn;<sup>132</sup>Sn;<sup>134</sup>Sn; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in <sup>17</sup>Ne spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska
- 2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- <sup>80</sup>Ga      2010H012      RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806



KEYNUMBERS AND KEYWORDS

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**A=80 (continued)**

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| $^{80}\text{Ge}$ | 2010H012 | RADIOACTIVITY $^{73,74,75}\text{Co}$ , $^{75,76,77,78}\text{Ni}$ , $^{76,77,78,79,80}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{81,82}\text{Ga}(\beta^-)$ , $(\beta^-n)$ [from $\text{Be}(^{86}\text{Kr}, X)$ , $E=140$ MeV / nucleon]; measured $\beta$ spectra, $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, $P(n)$ using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. $A=1-210$ ; calculated abundances with classical r-process and HEW models using known decay data. $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806 |
| $^{80}\text{Se}$ | 2010ADZZ | NUCLEAR REACTIONS $\text{Ti}$ , $\text{Cr}$ , $^{80}\text{Se}(n, n'\gamma)$ , $E=\text{fast}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma(\theta)$ , $T_{1/2}$ by DSAM, $^{48\text{nullTi},53}\text{Cr}$ , $^{80}\text{Se}$ ; deduced levels. CONF St.-Petersburg,P108,Adymov   |
| $^{80}\text{Br}$ | 2010SP05 | NUCLEAR REACTIONS $^{77,78,80}\text{Se}(p, n)$ , $(p, 2n)$ , $(p, 4n)^{77}\text{Br}$ , $^{80}\text{Se}(p, n)$ , $E=21-85$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and their uncertainties, integral yields. JOUR RAACA 98 749   |
| $^{80}\text{Kr}$ | 2010NA13 | ATOMIC MASSES $^{80,86,87,94,96,97}\text{Kr}$ ; measured cyclotron frequencies and ratios; deduced mass excess, deformation. Penning-trap mass spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502   |

**A=81**

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|------------------|----------|--|
| $^{81}\text{Cu}$ | 20100H02 | NUCLEAR REACTIONS $\text{Be}$ , $\text{Pb}(^{238}\text{U}, F)$ , $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20-56$ , $A=52-152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{81}\text{Zn}$ | 2008KOYY | RADIOACTIVITY $^{17}\text{Ne}$ ; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; $^{38}\text{Ca}$ ; $^{26}\text{Al}$ ; $^{80}\text{Zn}$ ; $^{81}\text{Zn}$ ; $^{132}\text{Sn}$ ; $^{134}\text{Sn}$ ; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in $^{17}\text{Ne}$ spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska  |
|                  | 2010H012 | RADIOACTIVITY $^{73,74,75}\text{Co}$ , $^{75,76,77,78}\text{Ni}$ , $^{76,77,78,79,80}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{81,82}\text{Ga}(\beta^-)$ , $(\beta^-n)$ [from $\text{Be}(^{86}\text{Kr}, X)$ , $E=140$ MeV / nucleon]; measured $\beta$ spectra, $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, $P(n)$ using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. $A=1-210$ ; calculated abundances with classical r-process and HEW models using known decay data. $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806   |

KEYNUMBERS AND KEYWORDS

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A=81 (*continued*)

$^{81}\text{Ga}$	2008DEZP	NUCLEAR REACTIONS $^{192}\text{Os}$ , $^{238}\text{U}(^{82}\text{Se}, \text{X})^{81}\text{Ga}$ / $^{82}\text{Ge}$ / $^{83}\text{As}$ / $^{80}\text{Zn}$ , E=460, 505 MeV; measured reaction products, $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced level energies, J, $\pi$ . Comparison with shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P73,De Angelis
	2010CH16	NUCLEAR REACTIONS $\text{U}(p, \text{X})^{67}\text{Ga}$ / $^{69}\text{Ga}$ / $^{71}\text{Ga}$ / $^{73}\text{Ga}$ / $^{75}\text{Ga}$ / $^{77}\text{Ga}$ / $^{79}\text{Ga}$ / $^{81}\text{Ga}$ , E=1.4 GeV; measured optical hfs spectra; deduced ground J, $\pi$ , magnetic dipole and electric quadrupole moments, anomalous ground state spins. JOUR PRLTA 104 252502
	2010H012	RADIOACTIVITY $^{73,74,75}\text{Co}$ , $^{75,76,77,78}\text{Ni}$ , $^{76,77,78,79,80}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{81,82}\text{Ga}(\beta^-)$ , $(\beta^- n)$ [from $\text{Be}(^{86}\text{Kr}, \text{X})$ , E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
$^{81}\text{Ge}$	2010H012	RADIOACTIVITY $^{73,74,75}\text{Co}$ , $^{75,76,77,78}\text{Ni}$ , $^{76,77,78,79,80}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{81,82}\text{Ga}(\beta^-)$ , $(\beta^- n)$ [from $\text{Be}(^{86}\text{Kr}, \text{X})$ , E=140 MeV / nucleon]; measured $\beta$ spectra, $\beta n$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
$^{81}\text{Se}$	2010PAZY	NUCLEAR REACTIONS $^{74,82}\text{Se}(\gamma, n)$ , $(n, 2n)$ , $E\gamma=27, 28, 29, 30$ MeV bremsstrahlung, $E_n=14$ MeV; measured isomeric yield ratios with activation method. $^{81m,g}\text{Se}$ ; deduced $Y_m / Y_g$ vs $E\gamma$ . CONF St.-Petersburg,P186,Palvanov
$^{81}\text{Br}$	2010MI21	RADIOACTIVITY $^{81}\text{Kr}(\text{EC})$ [from $^{93}\text{Nb}(p, \text{X})$ , E=1 GeV]; measured $E\gamma$ , $I\gamma$ , x-ray spectrum, $\gamma(x \text{ ray})$ -coin; deduced K-component of the radiative electron capture spectrum. Comparison with theoretical model predictions. $^{83}\text{Rb}(\text{EC})$ ; measured $E\gamma$ . JOUR PRVCA 82 044308
$^{81}\text{Kr}$	2010MI21	RADIOACTIVITY $^{81}\text{Kr}(\text{EC})$ [from $^{93}\text{Nb}(p, \text{X})$ , E=1 GeV]; measured $E\gamma$ , $I\gamma$ , x-ray spectrum, $\gamma(x \text{ ray})$ -coin; deduced K-component of the radiative electron capture spectrum. Comparison with theoretical model predictions. $^{83}\text{Rb}(\text{EC})$ ; measured $E\gamma$ . JOUR PRVCA 82 044308

KEYNUMBERS AND KEYWORDS

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**A=81 (continued)**

- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy}$  /  $^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{81}\text{Rb}$  2010ERZZ NUCLEAR REACTIONS  $^{85}\text{Rb}(\gamma, \text{n})$ ,  $(\gamma, 2\text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $^{87}\text{Rb}(\gamma, \text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $(\gamma, 5\text{n})$ , E=67.7 MeV bremsstrahlung; measured relative yields with activation method.  $^{86}\text{Rb}$ ; deduced yield in  $(\gamma, \text{n})$ .  $^{84}\text{Rb}$ ; deduced yield in  $(\gamma, \text{n})+(\gamma, 3\text{n})$ .  $^{83}\text{Rb}$ ; deduced yield in  $(\gamma, 2\text{n})+(\gamma, 3\text{n})$ .  $^{82}\text{Rb}$ ; deduced yield in  $(\gamma, 3\text{n})+(\gamma, 4\text{n})$ .  $^{81}\text{Rb}$ ; deduced yield in  $(\gamma, 4\text{n})+(\gamma, 5\text{n})$ . CONF St.-Petersburg,P189,Ermakov

**A=82**

- $^{82}\text{Cu}$  20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- $^{82}\text{Ga}$  2008FOZS NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle),  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin.  $^{60}\text{Mn}$ ,  $^{78}\text{Ga}$ ,  $^{82}\text{Ga}$ ,  $^{92}\text{Br}$ ,  $^{95}\text{Rb}$ ,  $^{98}\text{Rb}$ ,  $^{92}\text{Y}$ ,  $^{101}\text{Y}$ ,  $^{112}\text{Tc}$  deduced isomeric transition,  $T_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden
- 2010H012 RADIOACTIVITY  $^{73,74,75}\text{Co}$ ,  $^{75,76,77,78}\text{Ni}$ ,  $^{76,77,78,79,80}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{81,82}\text{Ga}(\beta^-)$ ,  $(\beta^- \text{n})$ [from Be( $^{86}\text{Kr}$ , X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta\text{n}$ -coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data.  $^{78}\text{Ni}(\beta^-)$ ; calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- $^{82}\text{Ge}$  2008DEZP NUCLEAR REACTIONS  $^{192}\text{Os}$ ,  $^{238}\text{U}(^{82}\text{Se}, \text{X})^{81}\text{Ga}$  /  $^{82}\text{Ge}$  /  $^{83}\text{As}$  /  $^{80}\text{Zn}$ , E=460, 505 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced level energies, J,  $\pi$ . Comparison with shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P73,De Angelis

A=82 (continued)

- 2008WIZO RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2010GA14 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>82</sup>Ge, <sup>82</sup>Ge'), E=89.4 MeV / nucleon; <sup>197</sup>Au(<sup>84</sup>Se, <sup>84</sup>Se'), E=95.4 MeV / nucleon; <sup>9</sup>Be(<sup>82</sup>Ge, <sup>82</sup>Ge'), E=87.6 MeV / nucleon; <sup>9</sup>Be(<sup>84</sup>Se, <sup>84</sup>Se'), E=92 MeV / nucleon, [<sup>82</sup>Ge and <sup>84</sup>Se secondary beams from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , (particle) $\gamma$ -coin; <sup>82</sup>Ge, <sup>84</sup>Se; deduced levels, J, B(E2), T<sub>1/2</sub>. Intermediate energy Coulomb excitation and inelastic scattering. Comparison with systematics of B(E2) values for first 2+ state in N=50 isotones for Z(even)=30-42 and even-even Ge (A=64-82) and Se (A=68-84) isotopes, and with shell-model calculations. Systematics of first 3- states in even-even Se (A=74-82) and N=50 isotones. JOUR PRVCA 81 064326
- 2010H012 RADIOACTIVITY <sup>73,74,75</sup>Co, <sup>75,76,77,78</sup>Ni, <sup>76,77,78,79,80</sup>Cu, <sup>79,80,81</sup>Zn, <sup>81,82</sup>Ga( $\beta^-$ ), ( $\beta^-$ n)[from Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured  $\beta$  spectra,  $\beta$ n-coin, neutron spectra, half-lives, delayed neutron-emission probabilities; calculated half-lives, P(n) using QRPA, CQRPA and OXBASH shell model. Discussed effects on various types of models for the rapid neutron-capture process (r-process) in nucleosynthesis. A=1-210; calculated abundances with classical r-process and HEW models using known decay data. <sup>78</sup>Ni( $\beta^-$ ); calculated Gamow-Teller strengths, effect on abundances. JOUR PRVCA 82 025806
- 2010WI03 RADIOACTIVITY <sup>83,84,85</sup>Ga( $\beta^-$ ), ( $\beta^-$ n) [from <sup>238</sup>U(p, F), E=54 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta$ n $\gamma$ -coin, and half-lives. <sup>82,83,84,85</sup>Ge; deduced level, J,  $\pi$ , configurations. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the SKO<sub>T</sub> functionals. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 81 044303
- <sup>82</sup>As 2010WI03 RADIOACTIVITY <sup>83,84,85</sup>Ga( $\beta^-$ ), ( $\beta^-$ n) [from <sup>238</sup>U(p, F), E=54 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta$ n $\gamma$ -coin, and half-lives. <sup>82,83,84,85</sup>Ge; deduced level, J,  $\pi$ , configurations. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the SKO<sub>T</sub> functionals. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 81 044303
- <sup>82</sup>Se 2009DA25 RADIOACTIVITY <sup>48</sup>Ca, <sup>82</sup>Se, <sup>96</sup>Zr, <sup>100</sup>Mo, <sup>116</sup>Cd, <sup>130</sup>Te, <sup>150</sup>Nd(2 $\beta$ ); measured T<sub>1/2</sub> for zero / two-neutrino 2 $\beta$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c
- 2010SI06 RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te(2 $\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270

## A=82 (continued)

- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ ,  $E=54$  MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level,  $J$ ,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ;  $N=28-82$ ,  $Z=20-50$ ; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{82}\text{Br}$  2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, F)^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ ,  $E=50, 3500$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- $^{82}\text{Kr}$  2008LEZK NUCLEAR REACTIONS  $\text{Mg}(p, ^3\text{He})$ ,  $E=14.7-1600$  MeV;  $\text{Al}(p, ^3\text{He})$ ,  $E=41.5-397$  MeV;  $\text{Si}(p, ^3\text{He})$ ,  $E=31.3-1600$  MeV;  $\text{Pb}(p, ^3\text{He})$ ,  $E=44.2-2595$  MeV;  $\text{Bi}(p, ^3\text{He})$ ,  $E=102-2589$  MeV;  $\text{Bi}(p, \alpha)$ ,  $E=102-2589$  MeV;  $\text{Bi}(p, x)^{82}\text{Kr}$ ,  $E=102-2589$  MeV;  $\text{Bi}(p, x)^{85}\text{Kr}$ ,  $E=102-2589$  MeV;  $\text{Bi}(p, x)^{130}\text{Xe}$ ,  $E=102-2589$  MeV;  $\text{Bi}(p, x)^{131}\text{Xe}$ ,  $E=102-2589$  MeV; measured He, Kr, Xe using cryogenic traps; deduced He, Kr, Xe  $\sigma$ ; calculated  $\sigma$  using INCL4 / ABLA code. Compared to other measurements of similar kind done by the same group. CONF Nice (Nucl Data for Sci and Technol) Proc,P1061
- 2010SI06 RADIOACTIVITY  $^{100}\text{Mo}$ ,  $^{82}\text{Se}$ ,  $^{116}\text{Cd}$ ,  $^{150}\text{Nd}$ ,  $^{96}\text{Zr}$ ,  $^{48}\text{Ca}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E_e$ ,  $I_e$ ; deduced  $T_{1/2}$ . JOUR PPNPD 64 270
- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, X)^{168}\text{Dy} / ^{170}\text{Dy}$ ,  $E=460$  MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma^-$ , (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels,  $J$ ,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced  $4+$  to  $2+$  transition.  $^{170}\text{Er}$ ; measured  $E_\gamma$ .  $Z=64-72$ ,  $N=94-108$ ; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{82}\text{Rb}$  2009YU10 NUCLEAR REACTIONS  $^{60}\text{Ni}(^{27}\text{Al}, n4p)^{82}\text{Rb}$ ,  $E=130$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced magnetic rotational bands,  $g$  factors. JOUR CPCHC 33 s01 188
- 2010ERZZ NUCLEAR REACTIONS  $^{85}\text{Rb}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $^{87}\text{Rb}(\gamma, n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $E=67.7$  MeV bremsstrahlung; measured relative yields with activation method.  $^{86}\text{Rb}$ ; deduced yield in  $(\gamma, n)$ .  $^{84}\text{Rb}$ ; deduced yield in  $(\gamma, n)+(\gamma, 3n)$ .  $^{83}\text{Rb}$ ; deduced yield in  $(\gamma, 2n)+(\gamma, 3n)$ .  $^{82}\text{Rb}$ ; deduced yield in  $(\gamma, 3n)+(\gamma, 4n)$ .  $^{81}\text{Rb}$ ; deduced yield in  $(\gamma, 4n)+(\gamma, 5n)$ . CONF St.-Petersburg,P189,Ermakov
- 2010YU03 NUCLEAR REACTIONS  $^{60}\text{Ni}(^{27}\text{Al}, n4p)^{82}\text{Rb}$ ,  $E=130$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $g$  factors. Comparison with semiclassical model calculations. JOUR CPBHA 19 062701

KEYNUMBERS AND KEYWORDS

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**A=82 (continued)**

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| $^{82}\text{Sr}$ | 2009FA14 | NUCLEAR REACTIONS $^{58}\text{Ni}(^{28}\text{Si}, 4\text{p})^{82}\text{Sr}$ , E=110 MeV; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands, g factors, proton alignment. JOUR CPCHC 33 s01 206  |
|                  | 2010FA08 | NUCLEAR REACTIONS $^{58}\text{Ni}(^{28}\text{Si}, 4\text{p})$ , E=110 MeV; measured $E\gamma$ , $I\gamma$ . $^{82}\text{Sr}$ ; deduced g factor, rotational bands. Comparison with particle rotor model with Nilsson potential. JOUR NUPAB 834 107c   |
| $^{82}\text{Nb}$ | 2009GA40 | NUCLEAR REACTIONS $\text{Be}(^{107}\text{Ag}, \text{X})^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} / ^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}$ , E=750 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. $^{82,84}\text{Nb}$ , $^{86,87,88}\text{Tc}$ , $^{93}\text{Ru}$ , $^{94,96}\text{Pd}$ ; deduced levels, isomers, J, $\pi$ , and half-lives. $^{82}\text{Nb}$ , $^{86}\text{Tc}$ ; calculated potential energy surfaces. $^{82}\text{Nb}$ , $^{86,88}\text{Tc}$ ; calculated levels by shell-model and comparison with level systematics of $^{82}\text{Zr}$ and $^{86}\text{Mo}$ . JOUR PRVCA 80 064303 |

**A=83**

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| $^{83}\text{Ga}$ | 2008WIZO | RADIOACTIVITY $^{76,77,78,79}\text{Cu}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. $^{76,77,78}\text{Zn}$ , $^{82,83}\text{Ge}$ deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger  |
|                  | 2008WIZS | RADIOACTIVITY $^{83}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-)$ , $^{85}\text{Ga}(\beta^-)$ [from $^{235}\text{U}+\text{p}$ ]; measured $E\gamma$ , $I\gamma$ , $I\beta$ , $\beta\gamma$ -coin; deduced E, J, $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663   |
|                  | 2010WI03 | RADIOACTIVITY $^{83,84,85}\text{Ga}(\beta^-)$ , $(\beta^-n)$ [from $^{238}\text{U}(\text{p}, \text{F})$ , E=54 MeV]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma^-$ , $\gamma\gamma^-$ , $\beta n\gamma$ -coin, and half-lives. $^{82,83,84,85}\text{Ge}$ ; deduced level, J, $\pi$ , configurations. $^{82,83,84}\text{Ge}$ , $^{82,83,84}\text{As}$ , $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the $\text{SKO}_T$ functionals. $^{82,83,84}\text{Ge}$ , $^{82,83,84}\text{As}$ , $^{83}\text{Se}(\beta^-)$ ; measured $E\gamma$ . JOUR PRVCA 81 044303 |
| $^{83}\text{Ge}$ | 2008CIZZ | NUCLEAR REACTIONS $^2\text{H}(^{82}\text{Ge}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; $^2\text{H}(^{84}\text{Se}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; $^2\text{H}(^{130}\text{Sn}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; $^2\text{H}(^{132}\text{Sn}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; $^2\text{H}(^{134}\text{Te}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; measured $E\text{p}$ , $I\text{p}(\theta)$ ; deduced Q-values, E, J, $\pi$ . Compared with NNDC tables. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P580   |
|                  | 2008WIZO | RADIOACTIVITY $^{76,77,78,79}\text{Cu}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. $^{76,77,78}\text{Zn}$ , $^{82,83}\text{Ge}$ deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger  |
|                  | 2008WIZS | RADIOACTIVITY $^{83}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-)$ , $^{85}\text{Ga}(\beta^-)$ [from $^{235}\text{U}+\text{p}$ ]; measured $E\gamma$ , $I\gamma$ , $I\beta$ , $\beta\gamma$ -coin; deduced E, J, $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663   |

A=83 (*continued*)

- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{83}\text{As}$  2008DEZP NUCLEAR REACTIONS  $^{192}\text{Os}$ ,  $^{238}\text{U}(^{82}\text{Se}, X)^{81}\text{Ga} / ^{82}\text{Ge} / ^{83}\text{As} / ^{80}\text{Zn}$ , E=460, 505 MeV; measured reaction products,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced level energies, J,  $\pi$ . Comparison with shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P73,De Angelis
- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{83}\text{Se}$  2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{83}\text{Br}$  2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{83}\text{Kr}$  2010LI13 RADIOACTIVITY  $^{83m}\text{Kr}(\text{IT})$ [from  $^{83}\text{Rb}(\varepsilon)$ ]; measured  $E_\gamma$ ,  $I_\gamma$ , half-life in liquid argon and neon environments. Discussed applicability of  $^{83m}\text{Kr}$  as a calibration source for liquid argon, neon dark matter and solar neutrino detectors. JOUR PRVCA 81 045803
- 2010MI21 RADIOACTIVITY  $^{81}\text{Kr}(\text{EC})$ [from  $^{93}\text{Nb}(p, X)$ , E=1 GeV]; measured  $E_\gamma$ ,  $I_\gamma$ , x-ray spectrum,  $\gamma(x \text{ ray})$ -coin; deduced K-component of the radiative electron capture spectrum. Comparison with theoretical model predictions.  $^{83}\text{Rb}(\text{EC})$ ; measured  $E_\gamma$ . JOUR PRVCA 82 044308

KEYNUMBERS AND KEYWORDS

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**A=83 (continued)**

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| 2010S003         |          | NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, J, $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{83}\text{Rb}$ | 2010ERZZ | NUCLEAR REACTIONS $^{85}\text{Rb}(\gamma, \text{n})$ , $(\gamma, 2\text{n})$ , $(\gamma, 3\text{n})$ , $(\gamma, 4\text{n})$ , $^{87}\text{Rb}(\gamma, \text{n})$ , $(\gamma, 3\text{n})$ , $(\gamma, 4\text{n})$ , $(\gamma, 5\text{n})$ , E=67.7 MeV bremsstrahlung; measured relative yields with activation method. $^{86}\text{Rb}$ ; deduced yield in $(\gamma, \text{n})$ . $^{84}\text{Rb}$ ; deduced yield in $(\gamma, \text{n})+(\gamma, 3\text{n})$ . $^{83}\text{Rb}$ ; deduced yield in $(\gamma, 2\text{n})+(\gamma, 3\text{n})$ . $^{82}\text{Rb}$ ; deduced yield in $(\gamma, 3\text{n})+(\gamma, 4\text{n})$ . $^{81}\text{Rb}$ ; deduced yield in $(\gamma, 4\text{n})+(\gamma, 5\text{n})$ . CONF St.-Petersburg,P189,Ermakov  |
|                  | 2010MI21 | RADIOACTIVITY $^{81}\text{Kr}(\text{EC})$ [from $^{93}\text{Nb}(\text{p}, \text{X})$ , E=1 GeV]; measured $E\gamma$ , $I\gamma$ , x-ray spectrum, $\gamma(\text{x ray})$ -coin; deduced K-component of the radiative electron capture spectrum. Comparison with theoretical model predictions. $^{83}\text{Rb}(\text{EC})$ ; measured $E\gamma$ . JOUR PRVCA 82 044308  |
|                  | 2010SH17 | RADIOACTIVITY $^{83}\text{Sr}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{83}\text{Rb}$ ; deduced levels, J, $\pi$ , yrast states. Comparison with projected shell model. JOUR NUPAB 834 90c  |
| $^{83}\text{Sr}$ | 2010SH17 | RADIOACTIVITY $^{83}\text{Sr}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{83}\text{Rb}$ ; deduced levels, J, $\pi$ , yrast states. Comparison with projected shell model. JOUR NUPAB 834 90c  |

**A=84**

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| $^{84}\text{Zn}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-B}\rho$ method. JOUR JUPSA 79 073201 |
| $^{84}\text{Ga}$ | 2008WIZO | RADIOACTIVITY $^{76,77,78,79}\text{Cu}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. $^{76,77,78}\text{Zn}$ , $^{82,83}\text{Ge}$ deduced levels, J, $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger   |
|                  | 2008WIZS | RADIOACTIVITY $^{83}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-)$ , $^{85}\text{Ga}(\beta^-)$ [from $^{235}\text{U}+\text{p}$ ]; measured $E\gamma$ , $I\gamma$ , $I\beta$ , $\beta\gamma$ -coin; deduced E, J, $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663  |



A=84 (*continued*)

- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{84}\text{Ge}$  2008WIZO RADIOACTIVITY  $^{76,77,78,79}\text{Cu}$ ,  $^{83,84,85}\text{Ga}(\beta^-)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio.  $^{76,77,78}\text{Zn}$ ,  $^{82,83}\text{Ge}$  deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2008WIZS RADIOACTIVITY  $^{83}\text{Ga}(\beta^-)$ ,  $^{84}\text{Ga}(\beta^-)$ ,  $^{85}\text{Ga}(\beta^-)$ [from  $^{235}\text{U}+p$ ]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $I_\beta$ ,  $\beta\gamma$ -coin; deduced E, J,  $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663
- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{84}\text{As}$  2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303
- $^{84}\text{Se}$  2010GA14 NUCLEAR REACTIONS  $^{197}\text{Au}(^{82}\text{Ge}, ^{82}\text{Ge}')$ , E=89.4 MeV / nucleon;  $^{197}\text{Au}(^{84}\text{Se}, ^{84}\text{Se}')$ , E=95.4 MeV / nucleon;  $^9\text{Be}(^{82}\text{Ge}, ^{82}\text{Ge}')$ , E=87.6 MeV / nucleon;  $^9\text{Be}(^{84}\text{Se}, ^{84}\text{Se}')$ , E=92 MeV / nucleon, [ $^{82}\text{Ge}$  and  $^{84}\text{Se}$  secondary beams from  $^9\text{Be}(^{86}\text{Kr}, X)$ , E=140 MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\sigma$ , (particle) $\gamma$ -coin;  $^{82}\text{Ge}$ ,  $^{84}\text{Se}$ ; deduced levels, J, B(E2),  $T_{1/2}$ . Intermediate energy Coulomb excitation and inelastic scattering. Comparison with systematics of B(E2) values for first 2+ state in N=50 isotones for Z(even)=30-42 and even-even Ge (A=64-82) and Se (A=68-84) isotopes, and with shell-model calculations. Systematics of first 3- states in even-even Se (A=74-82) and N=50 isotones. JOUR PRVCA 81 064326
- 2010WI03 RADIOACTIVITY  $^{83,84,85}\text{Ga}(\beta^-)$ ,  $(\beta^-n)$  [from  $^{238}\text{U}(p, F)$ , E=54 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives.  $^{82,83,84,85}\text{Ge}$ ; deduced level, J,  $\pi$ , configurations.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the  $\text{SKO}_T$  functionals.  $^{82,83,84}\text{Ge}$ ,  $^{82,83,84}\text{As}$ ,  $^{83}\text{Se}(\beta^-)$ ; measured  $E_\gamma$ . JOUR PRVCA 81 044303

KEYNUMBERS AND KEYWORDS

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**A=84 (continued)**

$^{84}\text{Kr}$	2010S003	<p>NUCLEAR REACTIONS <math>^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}</math>, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, <math>E\gamma</math>, <math>I\gamma</math>, <math>\gamma\gamma</math>-, (particle)<math>\gamma</math>-coin using CLARA HPGe array. <math>^{168}\text{Dy}</math>; deduced levels, J, <math>\pi</math>, rotational bands, moments of inertia. <math>^{170}\text{Dy}</math>; deduced 4+ to 2+ transition. <math>^{170}\text{Er}</math>; measured <math>E\gamma</math>. Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <math>^{81,82,83,84,85,86,87,88,89,90}\text{Kr}</math>, <math>^{162,163,164,165,166,167,168,169,170,171}\text{Dy}</math>;</p> <p>measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310</p>
$^{84}\text{Rb}$	2010ERZZ	<p>NUCLEAR REACTIONS <math>^{85}\text{Rb}(\gamma, \text{n})</math>, <math>(\gamma, 2\text{n})</math>, <math>(\gamma, 3\text{n})</math>, <math>(\gamma, 4\text{n})</math>, <math>^{87}\text{Rb}(\gamma, \text{n})</math>, <math>(\gamma, 3\text{n})</math>, <math>(\gamma, 4\text{n})</math>, <math>(\gamma, 5\text{n})</math>, E=67.7 MeV bremsstrahlung; measured relative yields with activation method. <math>^{86}\text{Rb}</math>; deduced yield in <math>(\gamma, \text{n})</math>. <math>^{84}\text{Rb}</math>; deduced yield in <math>(\gamma, \text{n})+(\gamma, 3\text{n})</math>. <math>^{83}\text{Rb}</math>; deduced yield in <math>(\gamma, 2\text{n})+(\gamma, 3\text{n})</math>. <math>^{82}\text{Rb}</math>; deduced yield in <math>(\gamma, 3\text{n})+(\gamma, 4\text{n})</math>. <math>^{81}\text{Rb}</math>; deduced yield in <math>(\gamma, 4\text{n})+(\gamma, 5\text{n})</math>. CONF St.-Petersburg,P189,Ermakov</p>
	2010MA02	<p>NUCLEAR REACTIONS <math>^{85,87}\text{Rb}(\gamma, \text{n})^{84}\text{Rb} / ^{86}\text{Rb}</math>, E=10.5-12 MeV; measured <math>E\gamma</math>, <math>I\gamma</math>; deduced yields of isomers, J, <math>\pi</math>. Comparison with TALYS calculation. JOUR JPGPE 37 035101</p>
	2010SH12	<p>NUCLEAR REACTIONS <math>^{70}\text{Zn}(^{18}\text{O}, 3\text{np})</math>, E=75 MeV; measured <math>E\gamma</math>, <math>I\gamma</math>, <math>\gamma\gamma</math>-coin, DCO. <math>^{84}\text{Rb}</math>; deduced levels, J, <math>\pi</math>, multiplicities, bands, configurations, kinematic moments of inertia. Total Routhian surface calculations. Comparison with projected shell-model calculations, and with structures of <math>^{80,82}\text{Rb}</math>. JOUR PRVCA 82 014306</p>
$^{84}\text{Nb}$	2008STZM	<p>RADIOACTIVITY <math>^{84}\text{Mo}(\text{EC})</math>[from <math>^{124}\text{Xe}</math> fragmentation on <math>^9\text{Be}</math> target]; measured <math>E\gamma</math>, <math>I\gamma</math>, <math>E\beta</math>, <math>I\beta</math>, <math>\beta\gamma</math>-coin, (particle)<math>\gamma</math>-coin; deduced <math>T_{1/2}</math>. Results on CD only. CONF E.Lansing (NS2008),P179,Stoker</p>
	2009GA40	<p>NUCLEAR REACTIONS <math>\text{Be}(^{107}\text{Ag}, \text{X})^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} / ^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}</math>, E=750 MeV / nucleon; measured <math>E\gamma</math>, <math>I\gamma</math>, isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. <math>^{82,84}\text{Nb}</math>, <math>^{86,87,88}\text{Tc}</math>, <math>^{93}\text{Ru}</math>, <math>^{94,96}\text{Pd}</math>; deduced levels, isomers, J, <math>\pi</math>, and half-lives. <math>^{82}\text{Nb}</math>, <math>^{86}\text{Tc}</math>; calculated potential energy surfaces. <math>^{82}\text{Nb}</math>, <math>^{86,88}\text{Tc}</math>; calculated levels by shell-model and comparison with level systematics of <math>^{82}\text{Zr}</math> and <math>^{86}\text{Mo}</math>. JOUR PRVCA 80 064303</p>
$^{84}\text{Mo}$	2008STZM	<p>RADIOACTIVITY <math>^{84}\text{Mo}(\text{EC})</math>[from <math>^{124}\text{Xe}</math> fragmentation on <math>^9\text{Be}</math> target]; measured <math>E\gamma</math>, <math>I\gamma</math>, <math>E\beta</math>, <math>I\beta</math>, <math>\beta\gamma</math>-coin, (particle)<math>\gamma</math>-coin; deduced <math>T_{1/2}</math>. Results on CD only. CONF E.Lansing (NS2008),P179,Stoker</p>

## A=85

- <sup>85</sup>Zn 20100H02 NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF- $B\rho$  method. JOUR JUPSA 79 073201
- <sup>85</sup>Ga 2008WIZO RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured  $E\gamma$ ,  $I\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2008WIZS RADIOACTIVITY <sup>83</sup>Ga( $\beta^-$ ), <sup>84</sup>Ga( $\beta^-$ ), <sup>85</sup>Ga( $\beta^-$ )[from <sup>235</sup>U+p]; measured  $E\gamma$ ,  $I\gamma$ ,  $I\beta$ ,  $\beta\gamma$ -coin; deduced E, J,  $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663
- 2010WI03 RADIOACTIVITY <sup>83,84,85</sup>Ga( $\beta^-$ ), ( $\beta^-n$ ) [from <sup>238</sup>U(p, F), E=54 MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives. <sup>82,83,84,85</sup>Ge; deduced level, J,  $\pi$ , configurations. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the SKO<sub>T</sub> functionals. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); measured  $E\gamma$ . JOUR PRVCA 81 044303
- <sup>85</sup>Ge 2008WIZO RADIOACTIVITY <sup>76,77,78,79</sup>Cu, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured  $E\gamma$ ,  $I\gamma$ ,  $\beta$ -delayed neutron decay, (particle) $\gamma$ -coin; deduced branching ratio. <sup>76,77,78</sup>Zn, <sup>82,83</sup>Ge deduced levels, J,  $\pi$ . A=82, 83, 84 deduced chain branching ratio. Results on CD only. CONF E.Lansing (NS2008),P194,Winger
- 2008WIZS RADIOACTIVITY <sup>83</sup>Ga( $\beta^-$ ), <sup>84</sup>Ga( $\beta^-$ ), <sup>85</sup>Ga( $\beta^-$ )[from <sup>235</sup>U+p]; measured  $E\gamma$ ,  $I\gamma$ ,  $I\beta$ ,  $\beta\gamma$ -coin; deduced E, J,  $\pi$ , I. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P663
- 2010WI03 RADIOACTIVITY <sup>83,84,85</sup>Ga( $\beta^-$ ), ( $\beta^-n$ ) [from <sup>238</sup>U(p, F), E=54 MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma^-$ ,  $\gamma\gamma^-$ ,  $\beta n\gamma$ -coin, and half-lives. <sup>82,83,84,85</sup>Ge; deduced level, J,  $\pi$ , configurations. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); N=28-82, Z=20-50; systematics of neutron single-particle states. Comparison with spherical HFB calculations using the SKO<sub>T</sub> functionals. <sup>82,83,84</sup>Ge, <sup>82,83,84</sup>As, <sup>83</sup>Se( $\beta^-$ ); measured  $E\gamma$ . JOUR PRVCA 81 044303
- <sup>85</sup>As 2010LI02 ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- <sup>85</sup>Se 2008CIZZ NUCLEAR REACTIONS <sup>2</sup>H(<sup>82</sup>Ge, p), E $\approx$ 4-5 MeV / nucleon; <sup>2</sup>H(<sup>84</sup>Se, p), E $\approx$ 4-5 MeV / nucleon; <sup>2</sup>H(<sup>130</sup>Sn, p), E $\approx$ 4-5 MeV / nucleon; <sup>2</sup>H(<sup>132</sup>Sn, p), E $\approx$ 4-5 MeV / nucleon; <sup>2</sup>H(<sup>134</sup>Te, p), E $\approx$ 4-5 MeV / nucleon; measured  $E_p$ ,  $I_p(\theta)$ ; deduced Q-values, E, J,  $\pi$ . Compared with NNDC tables. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P580

KEYNUMBERS AND KEYWORDS

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A=85 (*continued*)

- <sup>85</sup>Kr      2008LEZK      NUCLEAR REACTIONS Mg(p, <sup>3</sup>He), E=14.7-1600 MeV; Al(p, <sup>3</sup>He), E=41.5-397 MeV; Si(p, <sup>3</sup>He), E=31.3-1600 MeV; Pb(p, <sup>3</sup>He), E=44.2-2595 MeV; Bi(p, <sup>3</sup>He), E=102-2589 MeV; Bi(p, α), E=102-2589 MeV; Bi(p, x)<sup>82</sup>Kr, E=102-2589 MeV; Bi(p, x)<sup>85</sup>Kr, E=102-2589 MeV; Bi(p, x)<sup>130</sup>Xe, E=102-2589 MeV; Bi(p, x)<sup>131</sup>Xe, E=102-2589 MeV; measured He, Kr, Xe using cryogenic traps; deduced He, Kr, Xe σ; calculated σ using INCL4 / ABLA code. Compared to other measurements of similar kind done by the same group. CONF Nice (Nucl Data for Sci and Technol) Proc,P1061
- 2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured Eγ, Iγ, A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th(γ, F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured Eγ, Iγ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010S003      NUCLEAR REACTIONS <sup>170</sup>Er(<sup>82</sup>Se, X)<sup>168</sup>Dy / <sup>170</sup>Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, Eγ, Iγ, γγ-, (particle)γ-coin using CLARA HPGe array. <sup>168</sup>Dy; deduced levels, J, π, rotational bands, moments of inertia. <sup>170</sup>Dy; deduced 4+ to 2+ transition. <sup>170</sup>Er; measured Eγ. Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup>Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup>Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- <sup>85</sup>Sr      2009KIZX      NUCLEAR REACTIONS <sup>85</sup>Rb(p, n), E=2-4 MeV; measured Eγ, Iγ, isomeric transition; deduced ground state σ, isomeric σ, S-factor; calculated using NON-SMOKER Hauser-Feshbach code using different optical model parameters. Compared to data of Kastleiner. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P476,Kiss
- 2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th(γ, F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured Eγ, Iγ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24

KEYNUMBERS AND KEYWORDS

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**A=85 (continued)**

<sup>85</sup>Y      2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24

**A=86**

<sup>86</sup>As      2010LI02      ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511

<sup>86</sup>Kr      2010NA13      ATOMIC MASSES <sup>80,86,87,94,96,97</sup>Kr; measured cyclotron frequencies and ratios; deduced mass excess, deformation. Penning-trap mass spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502

            2010S003      NUCLEAR REACTIONS <sup>170</sup>Er(<sup>82</sup>Se, X)<sup>168</sup>Dy / <sup>170</sup>Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup>Dy; deduced levels, J,  $\pi$ , rotational bands, moments of inertia. <sup>170</sup>Dy; deduced 4+ to 2+ transition. <sup>170</sup>Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup>Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup>Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310

<sup>86</sup>Rb      2010ERZZ      NUCLEAR REACTIONS <sup>85</sup>Rb( $\gamma$ , n), ( $\gamma$ , 2n), ( $\gamma$ , 3n), ( $\gamma$ , 4n), <sup>87</sup>Rb( $\gamma$ , n), ( $\gamma$ , 3n), ( $\gamma$ , 4n), ( $\gamma$ , 5n), E=67.7 MeV bremsstrahlung; measured relative yields with activation method. <sup>86</sup>Rb; deduced yield in ( $\gamma$ , n). <sup>84</sup>Rb; deduced yield in ( $\gamma$ , n)+( $\gamma$ , 3n). <sup>83</sup>Rb; deduced yield in ( $\gamma$ , 2n)+( $\gamma$ , 3n). <sup>82</sup>Rb; deduced yield in ( $\gamma$ , 3n)+( $\gamma$ , 4n). <sup>81</sup>Rb; deduced yield in ( $\gamma$ , 4n)+( $\gamma$ , 5n). CONF St.-Petersburg,P189,Ermakov

            2010MA02      NUCLEAR REACTIONS <sup>85,87</sup>Rb( $\gamma$ , n)<sup>84</sup>Rb / <sup>86</sup>Rb, E=10.5-12 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yields of isomers, J,  $\pi$ . Comparison with TALYS calculation. JOUR JPGPE 37 035101

<sup>86</sup>Sr      2010RU07      NUCLEAR REACTIONS <sup>73</sup>Ge(<sup>16</sup>O, 2np), E=57 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (neutron) $\gamma$ -coin using NE213 and HPGe detectors. <sup>86,88</sup>Y; deduced levels, J,  $\pi$ ,  $\mu$ , configurations, multipolarities, B(E1), B(E2), B(E3), B(M1), T<sub>1/2</sub>. Comparison with shell model calculations. <sup>85</sup>Rb(<sup>3</sup>He, 2n), (<sup>3</sup>He, np), E not given; analyzed E $\gamma$ , I $\gamma$ ,  $\gamma$ (H,  $\theta$ , t). <sup>86</sup>Sr, <sup>86</sup>Y; deduced g-factor. JOUR ZAANE 44 31

<sup>86</sup>Y      2010BEZV      NUCLEAR REACTIONS <sup>90</sup>Zr( $\gamma$ , 2np)<sup>87</sup>Y, <sup>90</sup>Zr( $\gamma$ , 3np)<sup>86</sup>Y, <sup>91</sup>Zr( $\gamma$ , 3np)<sup>87</sup>Y, <sup>91</sup>Zr( $\gamma$ , 4np)<sup>86</sup>Y, E=90 MeV bremsstrahlung; measured yields with activation method. <sup>86,87</sup>Y; deduced isomeric ratios Y<sub>m</sub> / Y<sub>g</sub>. CONF St.-Petersburg,P152,Bezshyyko

KEYNUMBERS AND KEYWORDS

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**A=86 (continued)**

- 2010RU07      NUCLEAR REACTIONS  $^{73}\text{Ge}(^{16}\text{O}, 2\text{np})$ ,  $E=57$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ , (neutron) $\gamma$ -coin using NE213 and HPGe detectors.  $^{86,88}\text{Y}$ ; deduced levels,  $J$ ,  $\pi$ ,  $\mu$ , configurations, multipolarities, B(E1), B(E2), B(E3), B(M1),  $T_{1/2}$ . Comparison with shell model calculations.  $^{85}\text{Rb}(^3\text{He}, 2\text{n})$ , ( $^3\text{He}$ , np),  $E$  not given; analyzed  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\text{H}, \theta, t)$ .  $^{86}\text{Sr}$ ,  $^{86}\text{Y}$ ; deduced  $g$ -factor. JOUR ZAANE 44 31
- $^{86}\text{Tc}$       2009GA40      NUCLEAR REACTIONS  $\text{Be}(^{107}\text{Ag}, \text{X})^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} / ^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}$ ,  $E=750$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility.  $^{82,84}\text{Nb}$ ,  $^{86,87,88}\text{Tc}$ ,  $^{93}\text{Ru}$ ,  $^{94,96}\text{Pd}$ ; deduced levels, isomers,  $J$ ,  $\pi$ , and half-lives.  $^{82}\text{Nb}$ ,  $^{86}\text{Tc}$ ; calculated potential energy surfaces.  $^{82}\text{Nb}$ ,  $^{86,88}\text{Tc}$ ; calculated levels by shell-model and comparison with level systematics of  $^{82}\text{Zr}$  and  $^{86}\text{Mo}$ . JOUR PRVCA 80 064303

**A=87**

- $^{87}\text{Ga}$       2010OH02      NUCLEAR REACTIONS  $\text{Be}$ ,  $\text{Pb}(^{238}\text{U}, \text{F})$ ,  $E=345$  MeV / nucleon; measured yields of fission fragments.  $Z=20-56$ ,  $A=52-152$ ; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF- $B\rho$  method. JOUR JUPSA 79 073201
- $^{87}\text{Br}$       2008RIZX      RADIOACTIVITY  $^9\text{Li}$ ,  $^{17}\text{N}$ ,  $^{87}\text{Br}$ ,  $^{88}\text{Br}(\beta^-)$ [from  $\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $\text{Fe}(p, x)$ ,  $E=1$  GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- $^{87}\text{Kr}$       2008RIZX      RADIOACTIVITY  $^9\text{Li}$ ,  $^{17}\text{N}$ ,  $^{87}\text{Br}$ ,  $^{88}\text{Br}(\beta^-)$ [from  $\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $\text{Fe}(p, x)$ ,  $E=1$  GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- 2008TAZI      NUCLEAR REACTIONS  $\text{Pb}(p, x)$ ,  $E=1, 1.4$  GeV;  $\text{Bi}(p, x)$ ,  $E=1, 1.4$  GeV; measured  $E\gamma$ ,  $I\gamma$ ,  $A(\text{particle})$  using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010DE01      NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ ,  $E=50, 3500$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24

## A=87 (continued)

- 2010NA13 ATOMIC MASSES  $^{80,86,87,94,96,97}\text{Kr}$ ; measured cyclotron frequencies and ratios; deduced mass excess, deformation. Penning-trap mass spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502
- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E_\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{87}\text{Sr}$  2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010SE05 NUCLEAR REACTIONS  $^{90}\text{Zr}(n, \alpha)$ , (n, p), (n, 2n), (n, X) $^{89m}\text{Y}$ ,  $^{91}\text{Zr}(n, n\alpha)$ , (n, p), (n, X) $^{90m}\text{Y}$ ,  $^{92}\text{Zr}(n, p)$ , (n, X) $^{91m}\text{Y}$ ,  $^{94}\text{Zr}(n, \alpha)$ , (n, p), (n, X) $^{93}\text{Y}$ , E=13.1-20.6 MeV; measured  $\sigma$  using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149
- $^{87}\text{Y}$  2010BEZV NUCLEAR REACTIONS  $^{90}\text{Zr}(\gamma, 2np)^{87}\text{Y}$ ,  $^{90}\text{Zr}(\gamma, 3np)^{86}\text{Y}$ ,  $^{91}\text{Zr}(\gamma, 3np)^{87}\text{Y}$ ,  $^{91}\text{Zr}(\gamma, 4np)^{86}\text{Y}$ , E=90 MeV bremsstrahlung; measured yields with activation method.  $^{86,87}\text{Y}$ ; deduced isomeric ratios  $Y_m / Y_g$ . CONF St.-Petersburg,P152,Bezshyyko
- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- $^{87}\text{Tc}$  2009GA40 NUCLEAR REACTIONS  $\text{Be}(^{107}\text{Ag}, \text{X})^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} / ^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}$ , E=750 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility.  $^{82,84}\text{Nb}$ ,  $^{86,87,88}\text{Tc}$ ,  $^{93}\text{Ru}$ ,  $^{94,96}\text{Pd}$ ; deduced levels, isomers, J,  $\pi$ , and half-lives.  $^{82}\text{Nb}$ ,  $^{86}\text{Tc}$ ; calculated potential energy surfaces.  $^{82}\text{Nb}$ ,  $^{86,88}\text{Tc}$ ; calculated levels by shell-model and comparison with level systematics of  $^{82}\text{Zr}$  and  $^{86}\text{Mo}$ . JOUR PRVCA 80 064303

## A=88

- <sup>88</sup>Br      2008RIZX      RADIOACTIVITY <sup>9</sup>Li, <sup>17</sup>N, <sup>87</sup>Br, <sup>88</sup>Br( $\beta^-$ )[from Pb, <sup>209</sup>Bi, Fe(p, x), E=1 GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- 2010RE01      NUCLEAR REACTIONS <sup>232</sup>Th(<sup>6</sup>Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup>Br, <sup>93</sup>Rb, <sup>95,98,99</sup>Y, <sup>99</sup>Mo, <sup>100</sup>Tc, <sup>121,123</sup>In, <sup>119,120,121,122,123,124,125,126,127</sup>Sn, <sup>123,125,127,131</sup>Sb, <sup>131</sup>I, <sup>132</sup>Te, <sup>134,136</sup>Xe; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- <sup>88</sup>Kr      2008RIZX      RADIOACTIVITY <sup>9</sup>Li, <sup>17</sup>N, <sup>87</sup>Br, <sup>88</sup>Br( $\beta^-$ )[from Pb, <sup>209</sup>Bi, Fe(p, x), E=1 GeV]; measured  $\beta$ -delayed neutron decay. CONF Nice (Nucl Data for Sci and Technol) Proc,P1073
- 2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010S003      NUCLEAR REACTIONS <sup>170</sup>Er(<sup>82</sup>Se, X)<sup>168</sup>Dy / <sup>170</sup>Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup>Dy; deduced levels, J,  $\pi$ , rotational bands, moments of inertia. <sup>170</sup>Dy; deduced 4+ to 2+ transition. <sup>170</sup>Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup>Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup>Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- <sup>88</sup>Y      2010RA09      NUCLEAR REACTIONS <sup>89</sup>Y, <sup>90</sup>Zr, <sup>93</sup>Nb, <sup>133</sup>Cs, <sup>197</sup>Au( $\gamma$ , n), <sup>99</sup>Tc( $\gamma$ , 3n), E<32 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$  and uncertainties. Bremsstrahlung photons. JOUR JNSTA 47 618
- 2010RU07      NUCLEAR REACTIONS <sup>73</sup>Ge(<sup>16</sup>O, 2np), E=57 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (neutron) $\gamma$ -coin using NE213 and HPGe detectors. <sup>86,88</sup>Y; deduced levels, J,  $\pi$ ,  $\mu$ , configurations, multipolarities, B(E1), B(E2), B(E3), B(M1), T<sub>1/2</sub>. Comparison with shell model calculations. <sup>85</sup>Rb(<sup>3</sup>He, 2n), (<sup>3</sup>He, np), E not given; analyzed E $\gamma$ , I $\gamma$ ,  $\gamma$ (H,  $\theta$ , t). <sup>86</sup>Sr, <sup>86</sup>Y; deduced g-factor. JOUR ZAANE 44 31



KEYNUMBERS AND KEYWORDS

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**A=88 (continued)**

- <sup>88</sup>Zr      2009BRZV      NUCLEAR REACTIONS <sup>89</sup>Y(p, 2n), E=tandem; measured E $\gamma$ , I $\gamma$ ; deduced <sup>88</sup>Zr multipole mixing ratio, B(M1), B(E2). CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P581,Braun
- <sup>88</sup>Tc      2009GA40      NUCLEAR REACTIONS Be(<sup>107</sup>Ag, X)<sup>82</sup>Nb / <sup>84</sup>Nb / <sup>86</sup>Tc / <sup>87</sup>Tc / <sup>88</sup>Tc / <sup>90</sup>Rh / <sup>93</sup>Ru / <sup>94</sup>Pd / <sup>96</sup>Pd, E=750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. <sup>82,84</sup>Nb, <sup>86,87,88</sup>Tc, <sup>93</sup>Ru, <sup>94,96</sup>Pd; deduced levels, isomers, J,  $\pi$ , and half-lives. <sup>82</sup>Nb, <sup>86</sup>Tc; calculated potential energy surfaces. <sup>82</sup>Nb, <sup>86,88</sup>Tc; calculated levels by shell-model and comparison with level systematics of <sup>82</sup>Zr and <sup>86</sup>Mo. JOUR PRVCA 80 064303

**A=89**

- <sup>89</sup>Se      2010LI02      ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- <sup>89</sup>Kr      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010S003      NUCLEAR REACTIONS <sup>170</sup>Er(<sup>82</sup>Se, X)<sup>168</sup>Dy / <sup>170</sup>Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup>Dy; deduced levels, J,  $\pi$ , rotational bands, moments of inertia. <sup>170</sup>Dy; deduced 4+ to 2+ transition. <sup>170</sup>Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup>Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup>Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- <sup>89</sup>Y      2008OHZT      NUCLEAR REACTIONS <sup>12</sup>C, <sup>89</sup>Y, <sup>208</sup>Pb(n, n), E=96 MeV; measured En, In( $\theta$ ); deduced d $\sigma$ ( $\theta$ ); calculated d $\sigma$ ( $\theta$ ) using different models. <sup>12</sup>C(n, n) d $\sigma$  compared also to <sup>12</sup>C(p, p). CONF Nice (Nucl Data for Sci and Technol) Proc,P1023
- 2010BA31      NUCLEAR REACTIONS U(p, F)<sup>89</sup>Y / <sup>96</sup>Y / <sup>98</sup>Y / <sup>99</sup>Y / <sup>100</sup>Y, E=30 MeV; measured hyperfine resonance fluorescence spectra; deduced isotope shifts, hyperfine parameters, nuclear spin and prolate shape. JOUR JPGPE 37 105103
- 2010SE05      NUCLEAR REACTIONS <sup>90</sup>Zr(n,  $\alpha$ ), (n, p), (n, 2n), (n, X)<sup>89m</sup>Y, <sup>91</sup>Zr(n, n $\alpha$ ), (n, p), (n, X)<sup>90m</sup>Y, <sup>92</sup>Zr(n, p), (n, X)<sup>91m</sup>Y, <sup>94</sup>Zr(n,  $\alpha$ ), (n, p), (n, X)<sup>93</sup>Y, E=13.1-20.6 MeV; measured  $\sigma$  using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149

KEYNUMBERS AND KEYWORDS

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**A=89 (continued)**

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| $^{89}\text{Zr}$ | 2010EL04 | NUCLEAR REACTIONS $^{60}\text{Ni}$ , $^{95}\text{Mo}(n, p)$ , $^{92}\text{Mo}(n, \alpha)$ , $^{90}\text{Zr}(n, 2n)$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{92}\text{Mo}(n, p)$ E=fission spectrum; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007  |
|                  | 2010ERZY | NUCLEAR REACTIONS $\text{Mo}(\gamma, xnyp)$ , E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration. $^{90,99}\text{Mo}$ , $^{97,96,95,90,89}\text{Nb}$ , $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov  |
|                  | 2010LE13 | NUCLEAR REACTIONS $\text{Mo}(p, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced yields, $\sigma$ . JOUR ARISE 68 2355 |
|                  | 2010RA09 | NUCLEAR REACTIONS $^{89}\text{Y}$ , $^{90}\text{Zr}$ , $^{93}\text{Nb}$ , $^{133}\text{Cs}$ , $^{197}\text{Au}(\gamma, n)$ , $^{99}\text{Tc}(\gamma, 3n)$ , E<32 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and uncertainties. Bremsstrahlung photons. JOUR JNSTA 47 618   |
|                  | 2010SE05 | NUCLEAR REACTIONS $^{90}\text{Zr}(n, \alpha)$ , $(n, p)$ , $(n, 2n)$ , $(n, X)^{89m}\text{Y}$ , $^{91}\text{Zr}(n, n\alpha)$ , $(n, p)$ , $(n, X)^{90m}\text{Y}$ , $^{92}\text{Zr}(n, p)$ , $(n, X)^{91m}\text{Y}$ , $^{94}\text{Zr}(n, \alpha)$ , $(n, p)$ , $(n, X)^{93}\text{Y}$ , E=13.1-20.6 MeV; measured $\sigma$ using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149                             |
|                  | 2010ZH08 | NUCLEAR REACTIONS $^{89}\text{Y}(n, \gamma)$ , $^{93}\text{Nb}$ , $^{90}\text{Zr}(n, 2n)$ , E=13.5-14.6 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 1367   |
| $^{89}\text{Nb}$ | 2010ERZY | NUCLEAR REACTIONS $\text{Mo}(\gamma, xnyp)$ , E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration. $^{90,99}\text{Mo}$ , $^{97,96,95,90,89}\text{Nb}$ , $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov  |

**A=90**

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| $^{90}\text{Ge}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{90}\text{Kr}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |

## A=90 (continued)

- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. 81,82,83,84,85,86,87,88,89,90Kr, 162,163,164,165,166,167,168,169,170,171Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{90}\text{Rb}$  2010VI01 NUCLEAR REACTIONS  $^{235}\text{U}$ ,  $^{239}\text{Pu}(\gamma, \text{F})^{90}\text{Rb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{132}\text{Sb} / ^{131}\text{Te} / ^{133}\text{Te} / ^{134}\text{I} / ^{136}\text{I} / ^{135}\text{Xe}$ , E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500
- $^{90}\text{Y}$  2010SE05 NUCLEAR REACTIONS  $^{90}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, 2n), (n, X) $^{89\text{m}}\text{Y}$ ,  $^{91}\text{Zr}(\text{n}, \text{n}\alpha)$ , (n, p), (n, X) $^{90\text{m}}\text{Y}$ ,  $^{92}\text{Zr}(\text{n}, \text{p})$ , (n, X) $^{91\text{m}}\text{Y}$ ,  $^{94}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, X) $^{93}\text{Y}$ , E=13.1-20.6 MeV; measured  $\sigma$  using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149
- 2010ZH08 NUCLEAR REACTIONS  $^{89}\text{Y}(\text{n}, \gamma)$ ,  $^{93}\text{Nb}$ ,  $^{90}\text{Zr}(\text{n}, 2\text{n})$ , E=13.5-14.6 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR NIMBE 268 1367
- $^{90}\text{Zr}$  2009RUZX NUCLEAR REACTIONS  $^{90}\text{Zr}(\gamma, \gamma')$ , E=6.8-10.8 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ; deduced B(M1); calculated B(M1) using QRPA with different wave functions. REPT TUNL-XLVIII,P89,Rusev
- 2010KR01 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{90}\text{Zr}(^6\text{Li}, ^6\text{Li})$ , ( $^6\text{Li}, ^6\text{Li}'$ ), E=240 MeV; measured particle spectra,  $\sigma(\theta)$  using multipole dipole-multipole (MDM) magnetic spectrometer.  $^{58}\text{Ni}$ ,  $^{90}\text{Zr}$ ; deduced levels, J,  $\pi$ , B(E2) for first 2+, and B(E3) for first 3- states. Comparison with deformed potential (DP) model and density-dependent double-folding (DDF) calculations using M3Y NN effective interaction and phenomenological Woods-Saxon potential. JOUR PRVCA 81 014603
- $^{90}\text{Nb}$  2010ERZY NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration.  $^{90,99}\text{Mo}$ ,  $^{97,96,95,90,89}\text{Nb}$ ,  $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr( $^7\text{Li}$ , X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{94\text{m}}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{96\text{m}}\text{Tc} / ^{93\text{m}}\text{Mo} / ^{90}\text{Nb} / ^{96}\text{Nb}$ , E=37-45 MeV; Y( $^9\text{Be}$ , X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{93\text{m}}\text{Mo}$ , E=30-48 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603
- $^{90}\text{Mo}$  2009BE49 NUCLEAR REACTIONS  $^{90}\text{Zr}(^3\text{He}, 3\text{n})$ , E=27 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ; deduced mixing ratios.  $^{90}\text{Mo}$ ; deduced energy levels, J,  $\pi$ , B(E2), B(M1). Comparison with interacting boson model and systematics of adjacent nuclei. JOUR ZAANE 42 7

KEYNUMBERS AND KEYWORDS

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**A=90 (continued)**

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| 2010ERZY         | NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration. $^{90,99}\text{Mo}$ , $^{97,96,95,90,89}\text{Nb}$ , $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov   |
| 2010LE13         | NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced yields, $\sigma$ . JOUR ARISE 68 2355  |
| $^{90}\text{Rh}$ | 2009GA40 NUCLEAR REACTIONS Be( $^{107}\text{Ag}$ , X) $^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} / ^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}$ , E=750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. $^{82,84}\text{Nb}$ , $^{86,87,88}\text{Tc}$ , $^{93}\text{Ru}$ , $^{94,96}\text{Pd}$ ; deduced levels, isomers, J, $\pi$ , and half-lives. $^{82}\text{Nb}$ , $^{86}\text{Tc}$ ; calculated potential energy surfaces. $^{82}\text{Nb}$ , $^{86,88}\text{Tc}$ ; calculated levels by shell-model and comparison with level systematics of $^{82}\text{Zr}$ and $^{86}\text{Mo}$ . JOUR PRVCA 80 064303 |

**A=91**

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| $^{91}\text{Rb}$ | 2010SI17 RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays. $^{91,93,95}\text{Rb}$ ; deduced levels, J, $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in $^{89,91,93,95}\text{Rb}$ . $^{93}\text{Rb}$ , $^{95}\text{Y}$ ; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302  |
| $^{91}\text{Sr}$ | 2010DE01 NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
|                  | 2010SE05 NUCLEAR REACTIONS $^{90}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, 2n), (n, X) $^{89\text{m}}\text{Y}$ , $^{91}\text{Zr}(\text{n}, \text{n}\alpha)$ , (n, p), (n, X) $^{90\text{m}}\text{Y}$ , $^{92}\text{Zr}(\text{n}, \text{p})$ , (n, X) $^{91\text{m}}\text{Y}$ , $^{94}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, X) $^{93}\text{Y}$ , E=13.1-20.6 MeV; measured $\sigma$ using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149  |
| $^{91}\text{Y}$  | 2010DE01 NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
|                  | 2010SE05 NUCLEAR REACTIONS $^{90}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, 2n), (n, X) $^{89\text{m}}\text{Y}$ , $^{91}\text{Zr}(\text{n}, \text{n}\alpha)$ , (n, p), (n, X) $^{90\text{m}}\text{Y}$ , $^{92}\text{Zr}(\text{n}, \text{p})$ , (n, X) $^{91\text{m}}\text{Y}$ , $^{94}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, X) $^{93}\text{Y}$ , E=13.1-20.6 MeV; measured $\sigma$ using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149  |

KEYNUMBERS AND KEYWORDS

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**A=91 (continued)**

$^{91}\text{Zr}$	2008TAZG	NUCLEAR REACTIONS $^{90,91,92,93,94,96}\text{Zr}(n, \gamma)$ , $^{139}\text{La}(n, \gamma)$ , E=1 eV-1 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced average $\sigma$ , capture kernels; calculated $^{90,91,92,94,96}\text{Zr}$ , $^{139}\text{La}$ average $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303
	2010C002	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , Pb, $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643
	2010UT01	NUCLEAR REACTIONS $^{96}\text{Zr}(\gamma, n)$ , E=8.1-14 MeV; measured $E\gamma$ , $I\gamma$ , En, In, $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation. $^{90,91,92,93,94,95,96}\text{Zr}(n, \gamma)$ , E=1 keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801
$^{91}\text{Nb}$	2010HE15	NUCLEAR REACTIONS $^{76}\text{Ge}(^{19}\text{F}, 4n)^{91}\text{Nb}$ , E=80 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states and bands, J, $\pi$ , level scheme. JOUR CPLEE 27 102104
	2010OR01	NUCLEAR REACTIONS $^{93}\text{Nb}(n, n'\gamma)$ , E=1.5-3 MeV; $^{92}\text{Zr}(p, 2n\gamma)$ , E=11.5-19 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , $\gamma\gamma(\theta)$ , level half-lives by DSAM. $^{93}\text{Nb}$ ; deduced levels, J, $\pi$ , multipolarity, mixing ratios, configurations, B(M1), B(E2), One-phonon isoscalar and isovector excitations. Comparison with shell-model calculations. JOUR PRVCA 82 044317
$^{91}\text{Mo}$	2008SCZS	NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , $(\gamma, n)$ , E<13.2 MeV;measured reaction products; $^{92,94,96,98,100}\text{Mo}$ ; deduced $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
	2010ER01	NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured $\gamma$ spectra, $\gamma(\theta)$ , photon yields, photon strength functions. $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ , E<20 MeV bremsstrahlung spectrum; measured $\gamma$ continuum spectra, activation yields, and $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
$^{91}\text{Tc}$	2008CHZN	NUCLEAR REACTIONS $^{40}\text{Ca}(^{58}\text{Ni}, 2p\alpha)$ , E=240 MeV; $^{40}\text{Ca}(^{58}\text{Ni}, 3p\alpha)$ , E=240 MeV; $^{40}\text{Ca}(^{58}\text{Ni}, 4p)$ , E=240 MeV; measured $E\gamma$ , $I\gamma(\theta, t)$ ; deduced $d\sigma(\theta)$ , f-factors. Results on CD only. CONF E.Lansing (NS2008),P15,Chiara

KEYNUMBERS AND KEYWORDS

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A=92

$^{92}\text{Br}$	2008FOZS	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. $^{60}\text{Mn}$ , $^{78}\text{Ga}$ , $^{82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95}\text{Rb}$ , $^{98}\text{Rb}$ , $^{92}\text{Y}$ , $^{101}\text{Y}$ , $^{112}\text{Tc}$ deduced isomeric transition, T $_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden
$^{92}\text{Kr}$	2009MUZW	NUCLEAR REACTIONS $^{12}\text{C}(^{88}\text{Kr}, ^{88}\text{Kr}')$ , E not given; $^{109}\text{Ag}(^{92}\text{Kr}, ^{92}\text{Kr}')$ , E not given; measured Coulomb excitation E $\gamma$ , I $\gamma$ ; deduced $^{88,92}\text{Kr}$ B(E2). $^{92}\text{Kr}$ B(E2) in contrast to what was supposed. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P587,Mucher
$^{92}\text{Sr}$	2010DE01	NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
$^{92}\text{Y}$	2008FOZS	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. $^{60}\text{Mn}$ , $^{78}\text{Ga}$ , $^{82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95}\text{Rb}$ , $^{98}\text{Rb}$ , $^{92}\text{Y}$ , $^{101}\text{Y}$ , $^{112}\text{Tc}$ deduced isomeric transition, T $_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden
	2010DE01	NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
	2010SE05	NUCLEAR REACTIONS $^{90}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, 2n), (n, X) $^{89\text{m}}\text{Y}$ , $^{91}\text{Zr}(\text{n}, \text{n}\alpha)$ , (n, p), (n, X) $^{90\text{m}}\text{Y}$ , $^{92}\text{Zr}(\text{n}, \text{p})$ , (n, X) $^{91\text{m}}\text{Y}$ , $^{94}\text{Zr}(\text{n}, \alpha)$ , (n, p), (n, X) $^{93}\text{Y}$ , E=13.1-20.6 MeV; measured $\sigma$ using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149
$^{92}\text{Zr}$	2008BEZH	NUCLEAR MOMENTS $^{70}\text{Ge}$ , $^{68}\text{Zn}$ , $^{92,94}\text{Zr}$ , $^{36,38,40}\text{S}$ , $^{38,40,42}\text{Ar}$ ; measured hyperfine spectra, Doppler-shifted $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle
	2008TAZG	NUCLEAR REACTIONS $^{90,91,92,93,94,96}\text{Zr}(\text{n}, \gamma)$ , $^{139}\text{La}(\text{n}, \gamma)$ , E=1 eV-1 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin; deduced average $\sigma$ , capture kernels; calculated $^{90,91,92,94,96}\text{Zr}$ , $^{139}\text{La}$ average $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303
	2009SCZV	NUCLEAR REACTIONS $^{92}\text{Zr}(\text{e}, \text{e}')$ , E=63 MeV; measured Ee, Ie, $\theta(\text{e})$ ; deduced B(E2) using PWBA and QPM (Quasiparticle-Phonon Model) calculations. Compared with data obtained from (n, n' $\gamma$ ) reaction. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P607,Scheikh-Obeid

KEYNUMBERS AND KEYWORDS

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**A=92 (continued)**

- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ ,  $E=0.001-1$  MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010UT01 NUCLEAR REACTIONS  $^{96}\text{Zr}(\gamma, n)$ ,  $E=8.1-14$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E_n$ ,  $I_n$ ,  $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation.  $^{90,91,92,93,94,95,96}\text{Zr}(n, \gamma)$ ,  $E=1$  keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801
- $^{92}\text{Nb}$  2009ZH37 NUCLEAR REACTIONS  $^{93}\text{Nb}$ ,  $^{122,128}\text{Te}(n, 2n)^{92m}\text{Nb} / ^{121}\text{Te} / ^{121m}\text{Te} / ^{127}\text{Te} / ^{127m}\text{Te} /$ ,  $E=14$  MeV; measured  $E\gamma$ ,  $I\gamma$  and  $\sigma$  by activation method relative to that for  $^{93}\text{Nb}(n, 2n)^{92m}\text{Nb}$  reaction; analyzed  $\sigma$  for  $^{121g}\text{Te}$  and  $^{127g}\text{Te}$  by considering effects of population of isomeric states. JOUR PRVCA 80 054615
- 2010EL04 NUCLEAR REACTIONS  $^{60}\text{Ni}$ ,  $^{95}\text{Mo}(n, p)$ ,  $^{92}\text{Mo}(n, \alpha)$ ,  $^{90}\text{Zr}(n, 2n)$ ,  $^{54}\text{Fe}$ ,  $^{58}\text{Ni}$ ,  $^{92}\text{Mo}(n, p)$   $E$ =fission spectrum; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007
- 2010LE13 NUCLEAR REACTIONS  $\text{Mo}(p, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ ,  $E=8.4-37.1$  MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010LU01 NUCLEAR REACTIONS  $^{152,154,160}\text{Gd}$ ,  $^{93}\text{Nb}(n, 2n)$ ,  $^{156,157,158}\text{Gd}(n, p)$ ,  $^{27}\text{Al}$ ,  $^{158}\text{Gd}(n, \alpha)$ ,  $E=13.5-14.8$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127
- 2010PA30 NUCLEAR REACTIONS  $^{89}\text{Y}(^9\text{Be}, xn)^{96}\text{Tc} / ^{95}\text{Tc} / ^{94}\text{Tc} / ^{92}\text{Nb}$ ,  $E=19-33$  MeV;  $^{89}\text{Y}(^{12}\text{C}, xn)^{99}\text{Rh} / ^{98}\text{Rh} / ^{97}\text{Rh} / ^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=32-47$  MeV;  $^{93}\text{Nb}(\alpha, xn)^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=10-17$  MeV; measured  $E\gamma$ ,  $I\gamma$ , complete and incomplete fusion  $\sigma(E)$ , excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608
- 2010RA09 NUCLEAR REACTIONS  $^{89}\text{Y}$ ,  $^{90}\text{Zr}$ ,  $^{93}\text{Nb}$ ,  $^{133}\text{Cs}$ ,  $^{197}\text{Au}(\gamma, n)$ ,  $^{99}\text{Tc}(\gamma, 3n)$ ,  $E<32$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  and uncertainties. Bremsstrahlung photons. JOUR JNSTA 47 618
- 2010UD01 NUCLEAR REACTIONS  $^{54}\text{Fe}$ ,  $^{59}\text{Co}$ ,  $^{92}\text{Mo}(n, p)$ ,  $E>1.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR ARISE 68 1656
- 2010ZH08 NUCLEAR REACTIONS  $^{89}\text{Y}(n, \gamma)$ ,  $^{93}\text{Nb}$ ,  $^{90}\text{Zr}(n, 2n)$ ,  $E=13.5-14.6$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR NIMBE 268 1367
- $^{92}\text{Mo}$  2008SCZS NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ ,  $(\gamma, n)$ ,  $E<13.2$  MeV; measured reaction products;  $^{92,94,96,98,100}\text{Mo}$ ; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner

KEYNUMBERS AND KEYWORDS

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**A=92 (continued)**

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| 2010ER01                  | NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured $\gamma$ spectra, $\gamma(\theta)$ , photon yields, photon strength functions. $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ , E<20 MeV bremsstrahlung spectrum; measured $\gamma$ continuum spectra, activation yields, and $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319 |
| 2010G015                  | NUCLEAR REACTIONS $^{92}\text{Mo}(n, n'\gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ ; deduced level energies, yields, $\sigma(\theta)$ . JOUR PANUE 73 1289  |
| $^{92}\text{Ru}$ 2008CHZN | NUCLEAR REACTIONS $^{40}\text{Ca}(^{58}\text{Ni}, 2p\alpha)$ , E=240 MeV; $^{40}\text{Ca}(^{58}\text{Ni}, 3p\alpha)$ , E=240 MeV; $^{40}\text{Ca}(^{58}\text{Ni}, 4p)$ , E=240 MeV; measured $E\gamma$ , $I\gamma(\theta, t)$ ; deduced $d\sigma(\theta)$ , f-factors. Results on CD only. CONF E.Lansing (NS2008),P15,Chiara  |

**A=93**

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| $^{93}\text{Kr}$ 2010HW03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (x ray)- $\gamma$ coin, half-lives by $\gamma(t)$ using Gammasphere array. $^{93}\text{Kr}$ , $^{151,153}\text{Pr}$ , $^{157}\text{Sm}$ ; deduced levels, J, $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. $^{96,97,98,99}\text{Y}$ , $^{149,150}\text{Pr}$ ; measured $E\gamma$ . JOUR PRVCA 82 034308   |
| $^{93}\text{Rb}$ 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, X)$ , E=45 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301   |
| 2010SI17                  | NUCLEAR REACTIONS $^{235}\text{U}(n, F)^{93}\text{Rb} / ^{95}\text{Rb}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin, and half-lives using FIFI fragment identification system and Ge detector array. $^{93,95}\text{Rb}$ ; deduced levels, J, $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. JOUR PRVCA 82 024302  |
| 2010SI17                  | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays. $^{91,93,95}\text{Rb}$ ; deduced levels, J, $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in $^{89,91,93,95}\text{Rb}$ . $^{93}\text{Rb}$ , $^{95}\text{Y}$ ; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302   |
| $^{93}\text{Y}$ 2010DE01  | NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, F)^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured $E\gamma$ , $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |



A=93 (continued)

- 2010SE05 NUCLEAR REACTIONS  $^{90}\text{Zr}(n, \alpha)$ ,  $(n, p)$ ,  $(n, 2n)$ ,  $(n, X)^{89m}\text{Y}$ ,  $^{91}\text{Zr}(n, n\alpha)$ ,  $(n, p)$ ,  $(n, X)^{90m}\text{Y}$ ,  $^{92}\text{Zr}(n, p)$ ,  $(n, X)^{91m}\text{Y}$ ,  $^{94}\text{Zr}(n, \alpha)$ ,  $(n, p)$ ,  $(n, X)^{93}\text{Y}$ , E=13.1-20.6 MeV; measured  $\sigma$  using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149
- $^{93}\text{Zr}$  2008TAZG NUCLEAR REACTIONS  $^{90,91,92,93,94,96}\text{Zr}(n, \gamma)$ ,  $^{139}\text{La}(n, \gamma)$ , E=1 eV-1 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced average  $\sigma$ , capture kernels; calculated  $^{90,91,92,94,96}\text{Zr}$ ,  $^{139}\text{La}$  average  $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ , Pb,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010TA09 NUCLEAR REACTIONS  $^{92}\text{Zr}(n, \gamma)$ , E=0-40 keV; measured capture yield. Deduced resonance parameters, and neutron capture  $\sigma$  at CERN n\_TOF facility. Comparison with previous data. JOUR PRVCA 81 055801
- 2010UT01 NUCLEAR REACTIONS  $^{96}\text{Zr}(\gamma, n)$ , E=8.1-14 MeV; measured  $E\gamma$ ,  $I\gamma$ , En, In,  $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation.  $^{90,91,92,93,94,95,96}\text{Zr}(n, \gamma)$ , E=1 keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801
- 2010YA01 RADIOACTIVITY  $^{93}\text{Zr}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . JOUR RAACA 98 59
- $^{93}\text{Nb}$  2007WA45 NUCLEAR REACTIONS  $^{82}\text{Se}(^{16}\text{O}, 4np)$ , E=100 MeV; measured prompt and delayed  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , DCO ratios;  $^{93}\text{Nb}$ ; deduced high-spin levels, J,  $\pi$ , isomer  $T_{1/2}$ , configurations,  $\gamma$  linear polarization. Deformed independent particle model calculations. JOUR JUPSA 76 114202
- 2010F010 NUCLEAR REACTIONS  $^{173}\text{Yb}(^{24}\text{Mg}, X)$ , E=134.5 MeV;  $^{176}\text{Yb}(^{23}\text{Na}, X)$ , E=129 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array.  $^{96,97}\text{Nb}$ ; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of  $^{95,96}\text{Zr}$ . Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in  $^{87}\text{Nb}$  and  $^{101}\text{Nb}$ .  $^{93,94,95}\text{Nb}$ ,  $^{117,118,119}\text{Sn}$ ; measured  $E\gamma$ ,  $I\gamma$ . JOUR PRVCA 82 044306
- 2010OR01 NUCLEAR REACTIONS  $^{93}\text{Nb}(n, n'\gamma)$ , E=1.5-3 MeV;  $^{92}\text{Zr}(p, 2n\gamma)$ , E=11.5-19 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ , level half-lives by DSAM.  $^{93}\text{Nb}$ ; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations, B(M1), B(E2), One-phonon isoscalar and isovector excitations. Comparison with shell-model calculations. JOUR PRVCA 82 044317
- 2010YA01 RADIOACTIVITY  $^{93}\text{Zr}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . JOUR RAACA 98 59

## A=93 (continued)

- <sup>93</sup>Mo 2008SCZS NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma$ ,  $\gamma'$ ), ( $\gamma$ , n), E<13.2 MeV; measured reaction products; <sup>92,94,96,98,100</sup>Mo; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010ER01 NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma$ ,  $\gamma'$ ), E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions. <sup>92,94,96,98,100</sup>Mo( $\gamma$ , n), E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- 2010LE13 NUCLEAR REACTIONS Mo(p, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>95</sup>Tc / <sup>96</sup>Tc / <sup>99</sup>Tc / <sup>90</sup>Mo / <sup>93</sup>Mo / <sup>99</sup>Mo / <sup>90</sup>Nb / <sup>92</sup>Nb / <sup>95</sup>Nb / <sup>96</sup>Nb / <sup>89</sup>Zr / <sup>62</sup>Zn / <sup>63</sup>Zn / <sup>65</sup>Zn, E=8.4-37.1 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr(<sup>7</sup>Li, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>94m</sup>Tc / <sup>95</sup>Tc / <sup>96</sup>Tc / <sup>96m</sup>Tc / <sup>93m</sup>Mo / <sup>90</sup>Nb / <sup>96</sup>Nb, E=37-45 MeV; Y(<sup>9</sup>Be, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>95</sup>Tc / <sup>93m</sup>Mo, E=30-48 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603
- <sup>93</sup>Tc 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010LE13 NUCLEAR REACTIONS Mo(p, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>95</sup>Tc / <sup>96</sup>Tc / <sup>99</sup>Tc / <sup>90</sup>Mo / <sup>93</sup>Mo / <sup>99</sup>Mo / <sup>90</sup>Nb / <sup>92</sup>Nb / <sup>95</sup>Nb / <sup>96</sup>Nb / <sup>89</sup>Zr / <sup>62</sup>Zn / <sup>63</sup>Zn / <sup>65</sup>Zn, E=8.4-37.1 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr(<sup>7</sup>Li, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>94m</sup>Tc / <sup>95</sup>Tc / <sup>96</sup>Tc / <sup>96m</sup>Tc / <sup>93m</sup>Mo / <sup>90</sup>Nb / <sup>96</sup>Nb, E=37-45 MeV; Y(<sup>9</sup>Be, X)<sup>93</sup>Tc / <sup>94</sup>Tc / <sup>95</sup>Tc / <sup>93m</sup>Mo, E=30-48 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603

KEYNUMBERS AND KEYWORDS

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**A=93 (continued)**

<sup>93</sup>Ru      2009GA40      NUCLEAR REACTIONS Be(<sup>107</sup>Ag, X)<sup>82</sup>Nb / <sup>84</sup>Nb / <sup>86</sup>Tc / <sup>87</sup>Tc / <sup>88</sup>Tc / <sup>90</sup>Rh / <sup>93</sup>Ru / <sup>94</sup>Pd / <sup>96</sup>Pd, E=750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. <sup>82,84</sup>Nb, <sup>86,87,88</sup>Tc, <sup>93</sup>Ru, <sup>94,96</sup>Pd; deduced levels, isomers, J,  $\pi$ , and half-lives. <sup>82</sup>Nb, <sup>86</sup>Tc; calculated potential energy surfaces. <sup>82</sup>Nb, <sup>86,88</sup>Tc; calculated levels by shell-model and comparison with level systematics of <sup>82</sup>Zr and <sup>86</sup>Mo. JOUR PRVCA 80 064303

**A=94**

<sup>94</sup>Kr      2010NA13      ATOMIC MASSES <sup>80,86,87,94,96,97</sup>Kr; measured cyclotron frequencies and ratios; deduced mass excess, deformation. Penning-trap mass spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502

<sup>94</sup>Sr      2010HE16      NUCLEAR REACTIONS <sup>40</sup>Ca(<sup>40</sup>Ca, 2p), <sup>48</sup>Ca(<sup>48</sup>Ca, 2p), E=80 MeV / nucleon; measured E<sub>p</sub>, I<sub>p</sub>( $\theta$ ), pp-coin, Z(particle), A(particle), particle multiplicity, total transverse energy; deduced pp correlation function, emitting source size. JOUR NUPAB 834 552c

<sup>94</sup>Y      2010SE05      NUCLEAR REACTIONS <sup>90</sup>Zr(n,  $\alpha$ ), (n, p), (n, 2n), (n, X)<sup>89m</sup>Y, <sup>91</sup>Zr(n, n $\alpha$ ), (n, p), (n, X)<sup>90m</sup>Y, <sup>92</sup>Zr(n, p), (n, X)<sup>91m</sup>Y, <sup>94</sup>Zr(n,  $\alpha$ ), (n, p), (n, X)<sup>93</sup>Y, E=13.1-20.6 MeV; measured  $\sigma$  using activation method. Comparison with TALYS calculations. JOUR NUPAB 832 149

<sup>94</sup>Zr      2008BEZH      NUCLEAR MOMENTS <sup>70</sup>Ge, <sup>68</sup>Zn, <sup>92,94</sup>Zr, <sup>36,38,40</sup>S, <sup>38,40,42</sup>Ar; measured hyperfine spectra, Doppler-shifted  $\gamma$ -spectra; deduced g factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P49,Benczer-Kolle

            2008ELZV      NUCLEAR REACTIONS <sup>94</sup>Zr(n, n' $\gamma$ ), E=2.3-5 MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin; deduced levels, J,  $\pi$ , mixed-symmetry states, B(E2), B(M1), mixing ratio; calculated levels. Compared to data. Results on CD only. CONF E.Lansing (NS2008),P100,Elhami

            2008TAZG      NUCLEAR REACTIONS <sup>90,91,92,93,94,96</sup>Zr(n,  $\gamma$ ), <sup>139</sup>La(n,  $\gamma$ ), E=1 eV-1 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced average  $\sigma$ , capture kernels; calculated <sup>90,91,92,94,96</sup>Zr, <sup>139</sup>La average  $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303

            2008WEZW      RADIOACTIVITY <sup>66</sup>Ge; <sup>68</sup>Ge; <sup>94</sup>Zr; <sup>120</sup>Te; measured decay products; deduced B(E2), T<sub>1/2</sub>; <sup>140</sup>Nd; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ ( $\theta$ )-coin; deduced E, J,  $\pi$ , mixed-symmetry states. Results on CD only. CONF E.Lansing (NS2008),P23,Werner

            2009YAZT      NUCLEAR REACTIONS <sup>94</sup>Zr(n, n' $\gamma$ ), E not given; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced E, J,  $\pi$ , B(M1), B(E2), bands, mixed-symmetry states. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P517,Yates

            2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

## A=94 (continued)

- 2010UT01 NUCLEAR REACTIONS  $^{96}\text{Zr}(\gamma, n)$ , E=8.1-14 MeV; measured  $E\gamma$ ,  $I\gamma$ , En, In,  $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation.
- $^{94}\text{Nb}$  2010F010 NUCLEAR REACTIONS  $^{173}\text{Yb}(^{24}\text{Mg}, X)$ , E=134.5 MeV;  $^{176}\text{Yb}(^{23}\text{Na}, X)$ , E=129 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array.  $^{96,97}\text{Nb}$ ; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of  $^{95,96}\text{Zr}$ . Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in  $^{87}\text{Nb}$  and  $^{101}\text{Nb}$ .  $^{93,94,95}\text{Nb}$ ,  $^{117,118,119}\text{Sn}$ ; measured  $E\gamma$ ,  $I\gamma$ . JOUR PRVCA 81 035801
- $^{94}\text{Mo}$  2008PIZW NUCLEAR REACTIONS  $^{94}\text{Mo}(e, e')$ , E=70 MeV; measured reaction products;  $^{94}\text{Mo}$ ; deduced level energies, J,  $\pi$ ,  $\sigma(\theta)$ , form factors. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P325,Pietralla
- 2008SCZS NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ ,  $(\gamma, n)$ , E<13.2 MeV; measured reaction products;  $^{92,94,96,98,100}\text{Mo}$ ; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2010ER01 NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions.  $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ , E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- $^{94}\text{Tc}$  2010LE13 NUCLEAR REACTIONS  $\text{Mo}(p, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS  $\text{Zr}(^7\text{Li}, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{94m}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{96m}\text{Tc} / ^{93m}\text{Mo} / ^{90}\text{Nb} / ^{96}\text{Nb}$ , E=37-45 MeV;  $\text{Y}(^9\text{Be}, X)^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{93m}\text{Mo}$ , E=30-48 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603
- 2010PA30 NUCLEAR REACTIONS  $^{89}\text{Y}(^9\text{Be}, xn)^{96}\text{Tc} / ^{95}\text{Tc} / ^{94}\text{Tc} / ^{92}\text{Nb}$ , E=19-33 MeV;  $^{89}\text{Y}(^{12}\text{C}, xn)^{99}\text{Rh} / ^{98}\text{Rh} / ^{97}\text{Rh} / ^{96}\text{Tc} / ^{95}\text{Tc}$ , E=32-47 MeV;  $^{93}\text{Nb}(\alpha, xn)^{96}\text{Tc} / ^{95}\text{Tc}$ , E=10-17 MeV; measured  $E\gamma$ ,  $I\gamma$ , complete and incomplete fusion  $\sigma(E)$ , excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608
- $^{94}\text{Ru}$  2008CHZN NUCLEAR REACTIONS  $^{40}\text{Ca}(^{58}\text{Ni}, 2p\alpha)$ , E=240 MeV;  $^{40}\text{Ca}(^{58}\text{Ni}, 3p\alpha)$ , E=240 MeV;  $^{40}\text{Ca}(^{58}\text{Ni}, 4p)$ , E=240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta, t)$ ; deduced  $d\sigma(\theta)$ , f-factors. Results on CD only. CONF E.Lansing (NS2008),P15,Chiara

KEYNUMBERS AND KEYWORDS

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**A=94 (continued)**

<sup>94</sup>Pd      2009GA40      NUCLEAR REACTIONS Be(<sup>107</sup>Ag, X)<sup>82</sup>Nb / <sup>84</sup>Nb / <sup>86</sup>Tc / <sup>87</sup>Tc / <sup>88</sup>Tc / <sup>90</sup>Rh / <sup>93</sup>Ru / <sup>94</sup>Pd / <sup>96</sup>Pd, E=750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy loss for fragment identification, RISING array and MUSIC system at GSI facility. <sup>82,84</sup>Nb, <sup>86,87,88</sup>Tc, <sup>93</sup>Ru, <sup>94,96</sup>Pd; deduced levels, isomers, J,  $\pi$ , and half-lives. <sup>82</sup>Nb, <sup>86</sup>Tc; calculated potential energy surfaces. <sup>82</sup>Nb, <sup>86,88</sup>Tc; calculated levels by shell-model and comparison with level systematics of <sup>82</sup>Zr and <sup>86</sup>Mo. JOUR PRVCA 80 064303

**A=95**

<sup>95</sup>Se      2010OH02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta$ E-TOF-B $\rho$  method. JOUR JUPSA 79 073201

<sup>95</sup>Rb      2008FOZS      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. <sup>60</sup>Mn, <sup>78</sup>Ga, <sup>82</sup>Ga, <sup>92</sup>Br, <sup>95</sup>Rb, <sup>98</sup>Rb, <sup>92</sup>Y, <sup>101</sup>Y, <sup>112</sup>Tc deduced isomeric transition, T<sub>1/2</sub>, isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden

                 2010SI17      NUCLEAR REACTIONS <sup>235</sup>U(n, F)<sup>93</sup>Rb / <sup>95</sup>Rb; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (fragment) $\gamma$ -coin, and half-lives using FIFI fragment identification system and Ge detector array. <sup>93,95</sup>Rb; deduced levels, J,  $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. JOUR PRVCA 82 024302

                 2010SI17      RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays. <sup>91,93,95</sup>Rb; deduced levels, J,  $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in <sup>89,91,93,95</sup>Rb. <sup>93</sup>Rb, <sup>95</sup>Y; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302

<sup>95</sup>Y      2010RE01      NUCLEAR REACTIONS <sup>232</sup>Th(<sup>6</sup>Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup>Br, <sup>93</sup>Rb, <sup>95,98,99</sup>Y, <sup>99</sup>Mo, <sup>100</sup>Tc, <sup>121,123</sup>In, <sup>119,120,121,122,123,124,125,126,127</sup>Sn, <sup>123,125,127,131</sup>Sb, <sup>131</sup>I, <sup>132</sup>Te, <sup>134,136</sup>Xe; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301

                 2010SI17      RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays. <sup>91,93,95</sup>Rb; deduced levels, J,  $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in <sup>89,91,93,95</sup>Rb. <sup>93</sup>Rb, <sup>95</sup>Y; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302

KEYNUMBERS AND KEYWORDS

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**A=95 (continued)**

<sup>95</sup> Zr	2008TAZG	NUCLEAR REACTIONS <sup>90,91,92,93,94,96</sup> Zr(n, γ), <sup>139</sup> La(n, γ), E=1 eV-1 MeV; measured Eγ, Iγ, γγ-coin; deduced average σ, capture kernels; calculated <sup>90,91,92,94,96</sup> Zr, <sup>139</sup> La average σ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303
	2010CH41	NUCLEAR REACTIONS <sup>239</sup> Pu(n, F) <sup>99</sup> Mo / <sup>95</sup> Zr / <sup>140</sup> Ba / <sup>144</sup> Ce / <sup>147</sup> Nd, E=0.2-2 MeV; measured fission products; deduced fission product yields and its energy dependence. Comparison with ENDF / B-VII.0 library, LANL-ILRR measurements. JOUR NDSBA 111 2923
	2010C002	NUCLEAR REACTIONS <sup>197</sup> Au, <sup>151</sup> Sm, Pb, <sup>204,206,207,208</sup> Pb, <sup>209</sup> Bi, <sup>139</sup> La, <sup>232</sup> Th, <sup>24,25,26</sup> Mg, <sup>90,91,92,93,94,95,96</sup> Zr, <sup>186,187,188</sup> Os, <sup>233,234,235,236,238</sup> U, <sup>237</sup> Np, <sup>240</sup> Pu, <sup>241,243</sup> Am, <sup>245</sup> Cm(n, γ), E=0.001-1 MeV; measured Eγ, Iγ, fission fragments; deduced σ. JOUR ARISE 68 643
	2010DE01	NUCLEAR REACTIONS <sup>232</sup> Th(γ, F) <sup>77</sup> Ge / <sup>82</sup> Br / <sup>85</sup> Kr / <sup>85</sup> Sr / <sup>85</sup> Y / <sup>87</sup> Kr / <sup>87</sup> Sr / <sup>87</sup> Y / <sup>88</sup> Kr / <sup>91</sup> Sr / <sup>91</sup> Y / <sup>92</sup> Sr / <sup>92</sup> Y / <sup>93</sup> Y / <sup>93</sup> Mo / <sup>93</sup> Tc / <sup>95</sup> Zr / <sup>95</sup> Nb / <sup>95</sup> Tc / <sup>96</sup> Nb / <sup>97</sup> Zr / <sup>97</sup> Nb / <sup>99</sup> Mo / <sup>99</sup> Tc / <sup>99</sup> Rh / <sup>101</sup> Tc / <sup>101</sup> Rh / <sup>103</sup> Ru / <sup>105</sup> Ru / <sup>105</sup> Rh / <sup>109</sup> In / <sup>111</sup> Pd / <sup>111</sup> Ag / <sup>112</sup> Pd / <sup>112</sup> Ag / <sup>113</sup> Ag / <sup>115</sup> Ag / <sup>115</sup> Cd / <sup>117</sup> Cd / <sup>117</sup> In, E=50, 3500 MeV; measured Eγ, Iγ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
	2010DI02	NUCLEAR REACTIONS <sup>197</sup> Au, <sup>94</sup> Zr, <sup>64</sup> Zn, <sup>45</sup> Sc, <sup>139</sup> La(n, γ), E=thermal; measured Eγ, Iγ; deduced shape of neutron flux, covariances. JOUR ARISE 68 592
	2010SE15	NUCLEAR REACTIONS <sup>235,238</sup> U, <sup>239</sup> Pu(n, F) <sup>99</sup> Mo / <sup>95</sup> Zr / <sup>137</sup> Cs / <sup>140</sup> Ba / <sup>141,143</sup> Ce / <sup>147</sup> Nd, E=0.4-1.9 MeV; measured fission products; deduced fission product yields. Comparison with ENDF / B-VII.0 library, BIG TEN critical assembly. JOUR NDSBA 111 2891
	2010UT01	NUCLEAR REACTIONS <sup>96</sup> Zr(γ, n), E=8.1-14 MeV; measured Eγ, Iγ, En, In, σ. Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation. <sup>90,91,92,93,94,95,96</sup> Zr(n, γ), E=1 keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801
<sup>95</sup> Nb	2010DE01	NUCLEAR REACTIONS <sup>232</sup> Th(γ, F) <sup>77</sup> Ge / <sup>82</sup> Br / <sup>85</sup> Kr / <sup>85</sup> Sr / <sup>85</sup> Y / <sup>87</sup> Kr / <sup>87</sup> Sr / <sup>87</sup> Y / <sup>88</sup> Kr / <sup>91</sup> Sr / <sup>91</sup> Y / <sup>92</sup> Sr / <sup>92</sup> Y / <sup>93</sup> Y / <sup>93</sup> Mo / <sup>93</sup> Tc / <sup>95</sup> Zr / <sup>95</sup> Nb / <sup>95</sup> Tc / <sup>96</sup> Nb / <sup>97</sup> Zr / <sup>97</sup> Nb / <sup>99</sup> Mo / <sup>99</sup> Tc / <sup>99</sup> Rh / <sup>101</sup> Tc / <sup>101</sup> Rh / <sup>103</sup> Ru / <sup>105</sup> Ru / <sup>105</sup> Rh / <sup>109</sup> In / <sup>111</sup> Pd / <sup>111</sup> Ag / <sup>112</sup> Pd / <sup>112</sup> Ag / <sup>113</sup> Ag / <sup>115</sup> Ag / <sup>115</sup> Cd / <sup>117</sup> Cd / <sup>117</sup> In, E=50, 3500 MeV; measured Eγ, Iγ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
	2010EL04	NUCLEAR REACTIONS <sup>60</sup> Ni, <sup>95</sup> Mo(n, p), <sup>92</sup> Mo(n, α), <sup>90</sup> Zr(n, 2n), <sup>54</sup> Fe, <sup>58</sup> Ni, <sup>92</sup> Mo(n, p) E=fission spectrum; measured Eγ, Iγ; deduced σ; deduced lower values for experimental uncertainties vs. calculated. JOUR ARISE 68 2007

## A=95 (continued)

- 2010ERZY NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration.  $^{90,99}\text{Mo}$ ,  $^{97,96,95,90,89}\text{Nb}$ ,  $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov
- 2010F010 NUCLEAR REACTIONS  $^{173}\text{Yb}(^{24}\text{Mg}, \text{X})$ , E=134.5 MeV;  $^{176}\text{Yb}(^{23}\text{Na}, \text{X})$ , E=129 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using GammSphere array.  $^{96,97}\text{Nb}$ ; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of  $^{95,96}\text{Zr}$ . Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in  $^{87}\text{Nb}$  and  $^{101}\text{Nb}$ .  $^{93,94,95}\text{Nb}$ ,  $^{117,118,119}\text{Sn}$ ; measured  $E_\gamma$ ,  $I_\gamma$ . JOUR PRVCA 82 044306
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E_\gamma$ ,  $I_\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- $^{95}\text{Mo}$  2008SCZS NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , ( $\gamma$ , n), E<13.2 MeV; measured reaction products;  $^{92,94,96,98,100}\text{Mo}$ ; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2010ER01 NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions.  $^{92,94,96,98,100}\text{Mo}(\gamma, \text{n})$ , E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- $^{95}\text{Tc}$  2008KIZS NUCLEAR REACTIONS Ta(n, x), E=0.01-100 eV; Mo(n, x), E=0.01-200 eV; measured  $E_n$ ,  $I_n$  using TOF; deduced  $\sigma$ ; Mo(p, xn) $^{95}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{96}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{99}\text{Tc}$ , E=2.5-42 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ , isomeric  $\sigma$ ; calculated  $\sigma$  using ALICE-IPPE. Compared with other data, ENDF / B-VI.8 (n, xn). CONF Nice (Nucl Data for Sci and Technol) Proc,P533
- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E_\gamma$ ,  $I_\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr( $^7\text{Li}, \text{X}$ ) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{94m}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{96m}\text{Tc} / ^{93m}\text{Mo} / ^{90}\text{Nb} / ^{96}\text{Nb}$ , E=37-45 MeV; Y( $^9\text{Be}, \text{X}$ ) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{93m}\text{Mo}$ , E=30-48 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603

KEYNUMBERS AND KEYWORDS

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**A=95 (continued)**

2010PA30 NUCLEAR REACTIONS  $^{89}\text{Y}(^9\text{Be}, \text{xn})^{96}\text{Tc} / ^{95}\text{Tc} / ^{94}\text{Tc} / ^{92}\text{Nb}$ ,  $E=19\text{-}33$  MeV;  $^{89}\text{Y}(^{12}\text{C}, \text{xn})^{99}\text{Rh} / ^{98}\text{Rh} / ^{97}\text{Rh} / ^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=32\text{-}47$  MeV;  $^{93}\text{Nb}(\alpha, \text{xn})^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=10\text{-}17$  MeV; measured  $E\gamma$ ,  $I\gamma$ , complete and incomplete fusion  $\sigma(E)$ , excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608

**A=96**

$^{96}\text{Kr}$  2010NA13 ATOMIC MASSES  $^{80,86,87,94,96,97}\text{Kr}$ ; measured cyclotron frequencies and ratios; deduced mass excess, deformation. Penning-trap mass spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502

$^{96}\text{Y}$  2010BA31 NUCLEAR REACTIONS  $\text{U}(p, F)^{89}\text{Y} / ^{96}\text{Y} / ^{98}\text{Y} / ^{99}\text{Y} / ^{100}\text{Y}$ ,  $E=30$  MeV; measured hyperfine resonance fluorescence spectra; deduced isotope shifts, hyperfine parameters, nuclear spin and prolate shape. JOUR JPGPE 37 105103

2010HW03 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array.  $^{93}\text{Kr}$ ,  $^{151,153}\text{Pr}$ ,  $^{157}\text{Sm}$ ; deduced levels,  $J$ ,  $\pi$ , bands, configurations, conversion coefficients,  $B(E1) / B(E2)$  ratios.  $^{96,97,98,99}\text{Y}$ ,  $^{149,150}\text{Pr}$ ; measured  $E\gamma$ . JOUR PRVCA 82 034308

2010ZH36 NUCLEAR REACTIONS  $^{48}\text{Ca}(^{48}\text{Ca}, \pi^+)$ ,  $(^{48}\text{Ca}, \pi^-)$ ,  $^{124}\text{Sn}(^{124}\text{Sn}, \pi^+)$ ,  $(^{124}\text{Sn}, \pi^-)$ ,  $^{197}\text{Au}(^{197}\text{Au}, \pi^+)$ ,  $(^{197}\text{Au}, \pi^-)$ ,  $E=0.25\text{-}0.6$  GeV / nucleon; measured pion production yield ratios; deduced radii, symmetry energy. Comparison with isobar model. JOUR NUPAB 834 567c

$^{96}\text{Zr}$  2009DA25 RADIOACTIVITY  $^{48}\text{Ca}$ ,  $^{82}\text{Se}$ ,  $^{96}\text{Zr}$ ,  $^{100}\text{Mo}$ ,  $^{116}\text{Cd}$ ,  $^{130}\text{Te}$ ,  $^{150}\text{Nd}(2\beta^-)$ ; measured  $T_{1/2}$  for zero / two-neutrino  $2\beta^-$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c

2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ ,  $E=0.001\text{-}1$  MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

2010SI06 RADIOACTIVITY  $^{100}\text{Mo}$ ,  $^{82}\text{Se}$ ,  $^{116}\text{Cd}$ ,  $^{150}\text{Nd}$ ,  $^{96}\text{Zr}$ ,  $^{48}\text{Ca}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E_e$ ,  $I_e$ ; deduced  $T_{1/2}$ . JOUR PPNPD 64 270

2010UT01 NUCLEAR REACTIONS  $^{96}\text{Zr}(\gamma, n)$ ,  $E=8.1\text{-}14$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E_n$ ,  $I_n$ ,  $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation.  $^{90,91,92,93,94,95,96}\text{Zr}(n, \gamma)$ ,  $E=1$  keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801



## A=96 (continued)

- <sup>96</sup>Nb 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010ERZY NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration.  $^{90,99}\text{Mo}$ ,  $^{97,96,95,90,89}\text{Nb}$ ,  $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov
- 2010F010 NUCLEAR REACTIONS  $^{173}\text{Yb}(^{24}\text{Mg}, \text{X})$ , E=134.5 MeV;  $^{176}\text{Yb}(^{23}\text{Na}, \text{X})$ , E=129 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array.  $^{96,97}\text{Nb}$ ; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of  $^{95,96}\text{Zr}$ . Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in  $^{87}\text{Nb}$  and  $^{101}\text{Nb}$ .  $^{93,94,95}\text{Nb}$ ,  $^{117,118,119}\text{Sn}$ ; measured  $E\gamma$ ,  $I\gamma$ . JOUR PRVCA 82 044306
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr( $^7\text{Li}, \text{X})^{93}\text{Tc} / ^{94}\text{Tc} / ^{94m}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{96m}\text{Tc} / ^{93m}\text{Mo} / ^{90}\text{Nb} / ^{96}\text{Nb}$ , E=37-45 MeV; Y( $^9\text{Be}, \text{X})^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{93m}\text{Mo}$ , E=30-48 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603
- 2010ZH36 NUCLEAR REACTIONS  $^{48}\text{Ca}(^{48}\text{Ca}, \pi^+)$ ,  $(^{48}\text{Ca}, \pi^-)$ ,  $^{124}\text{Sn}(^{124}\text{Sn}, \pi^+)$ ,  $(^{124}\text{Sn}, \pi^-)$ ,  $^{197}\text{Au}(^{197}\text{Au}, \pi^+)$ ,  $(^{197}\text{Au}, \pi^-)$ , E=0.25-0.6 GeV / nucleon; measured pion production yield ratios; deduced radii, symmetry energy. Comparison with isobar model. JOUR NUPAB 834 567c
- <sup>96</sup>Mo 2008SCZS NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ ,  $(\gamma, \text{n})$ , E<13.2 MeV; measured reaction products;  $^{92,94,96,98,100}\text{Mo}$ ; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2009BE50 RADIOACTIVITY  $^{96}\text{Ru}(2\beta^+)$ ,  $(\beta^+\text{EC})$ ,  $(2\text{EC})$ ;  $^{104}\text{Ru}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes, including neutrino-less. HPGe detector at the Gran Sasso National Laboratories. JOUR ZAANE 42 171
- 2009KOZU NUCLEAR REACTIONS  $^{95}\text{Mo}(\text{n}, \gamma)$ , E not given; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced E, J,  $\pi$ , pulse-height in resonance regions;  $^{147}\text{Sm}(\text{n}, \gamma)$ , E=0-700 eV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced E, J,  $\pi$ , resonance spacing distributions, reduced neutron width; analyzed width distributions. Compared with Porter-Thomas, Mo measurements using (CIND)ORELA, Sm ones using DANCE at LANSCE. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P424,Koehler

## A=96 (continued)

- 2009SIZY NUCLEAR REACTIONS Dy( $^3\text{He}$ ,  $^3\text{He}'\gamma$ ), E=38-45 MeV; Dy( $^3\text{He}$ ,  $\alpha\gamma$ ), E=38-45 MeV; Sm( $^3\text{He}$ ,  $^3\text{He}'\gamma$ ), E=38-45 MeV; Sm( $^3\text{He}$ ,  $\alpha\gamma$ ), E=38-45 MeV;  $^{96}\text{Mo}$ ( $^3\text{He}$ ,  $^3\text{He}'\gamma$ ), E=38-45 MeV;  $^{97}\text{Mo}$ ( $^3\text{He}$ ,  $\alpha\gamma$ ), E=38-45 MeV; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin.; deduced  $^{146,148}\text{Sm}$ ,  $^{162}\text{Dy}$  nuclear level density,  $^{146}\text{Sm}$  nuclear level density,  $^{116,117}\text{Sn}$ ,  $^{163,164}\text{Dy}$  radiative strength function,  $^{116,117}\text{Sn}$  possible neutron skin oscillations using also other data;  $^{96}\text{Mo}$  radiative strength function enhancement at low energies; calculated  $^{116,117}\text{Sn}$  radiative strength functions using QRPA. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P66,Siem
- 2009WAZW NUCLEAR REACTIONS  $^{77}\text{Se}$ ,  $^{99}\text{Ru}$ ,  $^{101}\text{Ru}$ ,  $^{123}\text{Te}(n, \alpha)$ , E=thermal; measured  $E\alpha$ ,  $I\alpha$ ; deduced E, J,  $\pi$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P84,Wagemans
- 2010ER01 NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions.  $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ , E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- 2010KR05 RADIOACTIVITY  $^{96}\text{Tc}(\beta^+)$ , (EC)[from  $^{96}\text{Ru}(n, p)$ ];  $^{97}\text{Ru}(\beta^+)$ , (EC)[from  $^{96}\text{Ru}(n, \gamma)$ , E<1 eV];  $^{103,105}\text{Ru}(\beta^-)$ [from  $^{102,104}\text{Ru}(n, \gamma)$ , E<1 keV];  $^{105}\text{Rh}(\beta^-)$ [from  $^{105}\text{Ru}(\beta^-)$ ]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $I\beta$ ,  $I\epsilon$ , logft;  $^{96}\text{Mo}$ ,  $^{97}\text{Tc}$ ,  $^{103,105}\text{Rh}$ ,  $^{105}\text{Pd}$ ; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- 2010SI06 RADIOACTIVITY  $^{100}\text{Mo}$ ,  $^{82}\text{Se}$ ,  $^{116}\text{Cd}$ ,  $^{150}\text{Nd}$ ,  $^{96}\text{Zr}$ ,  $^{48}\text{Ca}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $Ee$ ,  $Ie$ ; deduced  $T_{1/2}$ . JOUR PPNPD 64 270
- $^{96}\text{Tc}$  2008KIZS NUCLEAR REACTIONS Ta(n, x), E=0.01-100 eV; Mo(n, x), E=0.01-200 eV; measured  $E_n$ ,  $I_n$  using TOF; deduced  $\sigma$ ; Mo(p, xn) $^{95}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{96}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{99}\text{Tc}$ , E=2.5-42 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , isomeric  $\sigma$ ; calculated  $\sigma$  using ALICE-IPPE. Compared with other data, ENDF / B-VI.8 (n, xn). CONF Nice (Nucl Data for Sci and Technol) Proc,P533
- 2010KR05 RADIOACTIVITY  $^{96}\text{Tc}(\beta^+)$ , (EC)[from  $^{96}\text{Ru}(n, p)$ ];  $^{97}\text{Ru}(\beta^+)$ , (EC)[from  $^{96}\text{Ru}(n, \gamma)$ , E<1 eV];  $^{103,105}\text{Ru}(\beta^-)$ [from  $^{102,104}\text{Ru}(n, \gamma)$ , E<1 keV];  $^{105}\text{Rh}(\beta^-)$ [from  $^{105}\text{Ru}(\beta^-)$ ]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $I\beta$ ,  $I\epsilon$ , logft;  $^{96}\text{Mo}$ ,  $^{97}\text{Tc}$ ,  $^{103,105}\text{Rh}$ ,  $^{105}\text{Pd}$ ; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc}$  /  $^{94}\text{Tc}$  /  $^{95}\text{Tc}$  /  $^{96}\text{Tc}$  /  $^{99}\text{Tc}$  /  $^{90}\text{Mo}$  /  $^{93}\text{Mo}$  /  $^{99}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{92}\text{Nb}$  /  $^{95}\text{Nb}$  /  $^{96}\text{Nb}$  /  $^{89}\text{Zr}$  /  $^{62}\text{Zn}$  /  $^{63}\text{Zn}$  /  $^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010MA10 NUCLEAR REACTIONS Zr( $^7\text{Li}$ , X) $^{93}\text{Tc}$  /  $^{94}\text{Tc}$  /  $^{94m}\text{Tc}$  /  $^{95}\text{Tc}$  /  $^{96}\text{Tc}$  /  $^{96m}\text{Tc}$  /  $^{93m}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{96}\text{Nb}$ , E=37-45 MeV; Y( $^9\text{Be}$ , X) $^{93}\text{Tc}$  /  $^{94}\text{Tc}$  /  $^{95}\text{Tc}$  /  $^{93m}\text{Mo}$ , E=30-48 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions. Comparisons with calculations using ALICE91 and PACE-II computer codes. JOUR PRVCA 81 024603

KEYNUMBERS AND KEYWORDS

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**A=96 (continued)**

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| 2010PA30         | NUCLEAR REACTIONS $^{89}\text{Y}(^9\text{Be}, \text{xn})^{96}\text{Tc} / ^{95}\text{Tc} / ^{94}\text{Tc} / ^{92}\text{Nb}$ ,<br>E=19-33 MeV; $^{89}\text{Y}(^{12}\text{C}, \text{xn})^{99}\text{Rh} / ^{98}\text{Rh} / ^{97}\text{Rh} / ^{96}\text{Tc} / ^{95}\text{Tc}$ ,<br>E=32-47 MeV; $^{93}\text{Nb}(\alpha, \text{xn})^{96}\text{Tc} / ^{95}\text{Tc}$ , E=10-17 MeV; measured $E\gamma$ ,<br>$I\gamma$ , complete and incomplete fusion $\sigma(E)$ , excitation functions deduced<br>barrier distributions and breakup effects. Coupled-channel (CC)<br>calculations. JOUR PRVCA 82 044608  |
| 2010RA09         | NUCLEAR REACTIONS $^{89}\text{Y}$ , $^{90}\text{Zr}$ , $^{93}\text{Nb}$ , $^{133}\text{Cs}$ , $^{197}\text{Au}(\gamma, \text{n})$ , $^{99}\text{Tc}(\gamma$ ,<br>$3\text{n})$ , E<32 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ and uncertainties.<br>Bremsstrahlung photons. JOUR JNSTA 47 618  |
| $^{96}\text{Ru}$ | 2008STZK NUCLEAR REACTIONS $\text{Cd}(^{32}\text{S}, \text{X})$ , $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95<br>MeV; measured $E(\text{particle})$ , $I(\text{particle}, \theta)$ ; $\text{C}(^{96}\text{Ru}, \text{X})$ , $(^{98}\text{Ru}, \text{X})$ ,<br>$(^{100}\text{Ru}, \text{X})$ , $(^{102}\text{Ru}, \text{X})$ , $(^{104}\text{Ru}, \text{X})$ , $(^{102}\text{Pd}, \text{X})$ , $(^{104}\text{Pd}, \text{X})$ , $(^{106}\text{Pd}, \text{X})$ ,<br>$(^{108}\text{Pd}, \text{X})$ , $(^{110}\text{Pd}, \text{X})$ , $(^{106}\text{Cd}, \text{X})$ , $(^{108}\text{Cd}, \text{X})$ , $(^{112}\text{Cd}, \text{X})$ , $E \approx 240$<br>MeV; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin. $^{96,98,100,102,104}\text{Ru}$ ,<br>$^{102,104,106,108,110}\text{Pd}$ , $^{104,106,108,110,112,114}\text{Cd}$ deduced g factor, $B(E2)$ ;<br>calculated $\sigma(\theta)$ , g factor, $B(E2)$ using cranking model. Results on CD<br>only. CONF E.Lansing (NS2008),P182,Stuchbery |
| 2009BE50         | RADIOACTIVITY $^{96}\text{Ru}(2\beta^+)$ , $(\beta^+ \text{EC})$ , $(2\text{EC})$ ; $^{104}\text{Ru}(2\beta^-)$ ; measured<br>$E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ lower limits for various $2\beta$ -decay modes,<br>including neutrino-less. HPGe detector at the Gran Sasso National<br>Laboratories. JOUR ZAANE 42 171  |
| $^{96}\text{Pd}$ | 2009GA40 NUCLEAR REACTIONS $\text{Be}(^{107}\text{Ag}, \text{X})^{82}\text{Nb} / ^{84}\text{Nb} / ^{86}\text{Tc} / ^{87}\text{Tc} /$<br>$^{88}\text{Tc} / ^{90}\text{Rh} / ^{93}\text{Ru} / ^{94}\text{Pd} / ^{96}\text{Pd}$ , E=750 MeV / nucleon; measured<br>$E\gamma$ , $I\gamma$ , isomer half-lives, and isomeric ratios, time-of-flight and energy<br>loss for fragment identification, RISING array and MUSIC system at<br>GSI facility. $^{82,84}\text{Nb}$ , $^{86,87,88}\text{Tc}$ , $^{93}\text{Ru}$ , $^{94,96}\text{Pd}$ ; deduced levels, isomers,<br>J, $\pi$ , and half-lives. $^{82}\text{Nb}$ , $^{86}\text{Tc}$ ; calculated potential energy surfaces.<br>$^{82}\text{Nb}$ , $^{86,88}\text{Tc}$ ; calculated levels by shell-model and comparison with<br>level systematics of $^{82}\text{Zr}$ and $^{86}\text{Mo}$ . JOUR PRVCA 80 064303  |
| $^{96}\text{Cd}$ | 2008BEZE NUCLEAR REACTIONS $^9\text{Be}(^{112}\text{Sn}, \text{X})^{96}\text{Cd}$ , E=112 MeV / nucleon;<br>measured $E\beta$ , $I\beta(t)$ , $E\gamma$ , $I\gamma$ , $E(\text{particle})$ , $I(\text{particle})$ , $A(\text{particle})$ ,<br>$Q(\text{particle})$ , $(\text{particle})\beta$ -coin. $^{96}\text{Cd}$ deduced $T_{1/2}$ . Comparison with<br>other Cd isotopes. Results on CD only. CONF E.Lansing<br>(NS2008),P80,Becerril  |
| 2008MOZ0         | RADIOACTIVITY $^{96}\text{Cd}$ ; $^{98}\text{In}$ ; $^{100}\text{Sn}$ [from RF fragment separator];<br>measured $I\beta(t)$ , $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ ; $^{98}\text{In}$ isomer decay. Compared to<br>other data. Results on CD only. CONF E.Lansing (NS2008),P2,Montes  |

**A=97**

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| $^{97}\text{Kr}$ | 2010NA13 ATOMIC MASSES $^{80,86,87,94,96,97}\text{Kr}$ ; measured cyclotron frequencies<br>and ratios; deduced mass excess, deformation. Penning-trap mass<br>spectrometer at ISOLDE, CERN. JOUR PRLTA 105 032502  |
| $^{97}\text{Y}$  | 2010HW03 RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (x ray)- $\gamma$ coin,<br>half-lives by $\gamma(t)$ using Gammasphere array. $^{93}\text{Kr}$ , $^{151,153}\text{Pr}$ , $^{157}\text{Sm}$ ;<br>deduced levels, J, $\pi$ , bands, configurations, conversion coefficients,<br>$B(E1) / B(E2)$ ratios. $^{96,97,98,99}\text{Y}$ , $^{149,150}\text{Pr}$ ; measured $E\gamma$ . JOUR<br>PRVCA 82 034308 |

KEYNUMBERS AND KEYWORDS

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**A=97 (continued)**

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| <sup>97</sup> Zr | 2008TAZG | NUCLEAR REACTIONS <sup>90,91,92,93,94,96</sup> Zr(n, $\gamma$ ), <sup>139</sup> La(n, $\gamma$ ), E=1 eV-1 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin; deduced average $\sigma$ , capture kernels; calculated <sup>90,91,92,94,96</sup> Zr, <sup>139</sup> La average $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303   |
|                  | 2010C002 | NUCLEAR REACTIONS <sup>197</sup> Au, <sup>151</sup> Sm, Pb, <sup>204,206,207,208</sup> Pb, <sup>209</sup> Bi, <sup>139</sup> La, <sup>232</sup> Th, <sup>24,25,26</sup> Mg, <sup>90,91,92,93,94,95,96</sup> Zr, <sup>186,187,188</sup> Os, <sup>233,234,235,236,238</sup> U, <sup>237</sup> Np, <sup>240</sup> Pu, <sup>241,243</sup> Am, <sup>245</sup> Cm(n, $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643  |
|                  | 2010DE01 | NUCLEAR REACTIONS <sup>232</sup> Th( $\gamma$ , F) <sup>77</sup> Ge / <sup>82</sup> Br / <sup>85</sup> Kr / <sup>85</sup> Sr / <sup>85</sup> Y / <sup>87</sup> Kr / <sup>87</sup> Sr / <sup>87</sup> Y / <sup>88</sup> Kr / <sup>91</sup> Sr / <sup>91</sup> Y / <sup>92</sup> Sr / <sup>92</sup> Y / <sup>93</sup> Y / <sup>93</sup> Mo / <sup>93</sup> Tc / <sup>95</sup> Zr / <sup>95</sup> Nb / <sup>95</sup> Tc / <sup>96</sup> Nb / <sup>97</sup> Zr / <sup>97</sup> Nb / <sup>99</sup> Mo / <sup>99</sup> Tc / <sup>99</sup> Rh / <sup>101</sup> Tc / <sup>101</sup> Rh / <sup>103</sup> Ru / <sup>105</sup> Ru / <sup>105</sup> Rh / <sup>109</sup> In / <sup>111</sup> Pd / <sup>111</sup> Ag / <sup>112</sup> Pd / <sup>112</sup> Ag / <sup>113</sup> Ag / <sup>115</sup> Ag / <sup>115</sup> Cd / <sup>117</sup> Cd / <sup>117</sup> In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
|                  | 2010UT01 | NUCLEAR REACTIONS <sup>96</sup> Zr( $\gamma$ , n), E=8.1-14 MeV; measured E $\gamma$ , I $\gamma$ , En, In, $\sigma$ . Laser Compton-scattered (LCS) beam. Comparisons with previous data and with QRPA and Lorentzian model calculation. <sup>90,91,92,93,94,95,96</sup> Zr(n, $\gamma$ ), E=1 keV to 1 MeV; comparison of previous experimental cross sections with calculated values from Hartree-Fock-Bogoliubov (HFB) and quasiparticle random-phase approximation (QRPA). JOUR PRVCA 81 035801  |
| <sup>97</sup> Nb | 2010DE01 | NUCLEAR REACTIONS <sup>232</sup> Th( $\gamma$ , F) <sup>77</sup> Ge / <sup>82</sup> Br / <sup>85</sup> Kr / <sup>85</sup> Sr / <sup>85</sup> Y / <sup>87</sup> Kr / <sup>87</sup> Sr / <sup>87</sup> Y / <sup>88</sup> Kr / <sup>91</sup> Sr / <sup>91</sup> Y / <sup>92</sup> Sr / <sup>92</sup> Y / <sup>93</sup> Y / <sup>93</sup> Mo / <sup>93</sup> Tc / <sup>95</sup> Zr / <sup>95</sup> Nb / <sup>95</sup> Tc / <sup>96</sup> Nb / <sup>97</sup> Zr / <sup>97</sup> Nb / <sup>99</sup> Mo / <sup>99</sup> Tc / <sup>99</sup> Rh / <sup>101</sup> Tc / <sup>101</sup> Rh / <sup>103</sup> Ru / <sup>105</sup> Ru / <sup>105</sup> Rh / <sup>109</sup> In / <sup>111</sup> Pd / <sup>111</sup> Ag / <sup>112</sup> Pd / <sup>112</sup> Ag / <sup>113</sup> Ag / <sup>115</sup> Ag / <sup>115</sup> Cd / <sup>117</sup> Cd / <sup>117</sup> In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
|                  | 2010ERZY | NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration. <sup>90,99</sup> Mo, <sup>97,96,95,90,89</sup> Nb, <sup>89</sup> Zr; deduced relative yields. CONF St.-Petersburg,P190,Ermakov  |
|                  | 2010F010 | NUCLEAR REACTIONS <sup>173</sup> Yb( <sup>24</sup> Mg, X), E=134.5 MeV; <sup>176</sup> Yb( <sup>23</sup> Na, X), E=129 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array. <sup>96,97</sup> Nb; deduced levels, J, $\pi$ , high-spin states. Comparison with level systematics of <sup>95,96</sup> Zr. Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in <sup>87</sup> Nb and <sup>101</sup> Nb. <sup>93,94,95</sup> Nb, <sup>117,118,119</sup> Sn; measured E $\gamma$ , I $\gamma$ . JOUR PRVCA 82 044306   |
|                  | 2011TA01 | NUCLEAR REACTIONS <sup>27</sup> Al(d, X) <sup>24</sup> Na, <sup>100</sup> Mo(d, X) <sup>99</sup> Tc / <sup>99</sup> Mo / <sup>98</sup> Nb / <sup>97</sup> Nb, E<50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ and their uncertainties. Comparison with with ALICE-D, EMPIRE-D and TALYS codes. JOUR ARISE 69 18   |

## A=97 (continued)

- <sup>97</sup>Mo      2008SCZS      NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma, \gamma'$ ), ( $\gamma, n$ ), E<13.2 MeV; measured reaction products; <sup>92,94,96,98,100</sup>Mo; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2010ER01      NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma, \gamma'$ ), E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions. <sup>92,94,96,98,100</sup>Mo( $\gamma, n$ ), E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- <sup>97</sup>Tc      2010FOZZ      NUCLEAR REACTIONS <sup>93</sup>Nb(<sup>12</sup>C, <sup>8</sup>Be), E=400 MeV; <sup>197</sup>Au(<sup>12</sup>C, <sup>8</sup>Be), E=400 MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ , E(particle), I(particle),  $\alpha\alpha$ -coin, (particle) $\alpha$ -coin; deduced  $d\sigma$ ,  $d\sigma(\theta)$ , quasi-elastic <sup>8</sup>Be breakup. CONF Varenna (Nucl Reaction Mechanisms),Proc,Vol.2,P545
- 2010HA12      RADIOACTIVITY <sup>198</sup>Au( $\beta^-$ ), <sup>97</sup>Ru(EC) [from <sup>197</sup>Au, Ru(n,  $\gamma$ )]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ , lack of temperature-dependent effects at low temperatures. JOUR ARISE 68 1550
- 2010KR05      RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $I\beta$ ,  $I\epsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- <sup>97</sup>Ru      2010HA12      RADIOACTIVITY <sup>198</sup>Au( $\beta^-$ ), <sup>97</sup>Ru(EC) [from <sup>197</sup>Au, Ru(n,  $\gamma$ )]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ , lack of temperature-dependent effects at low temperatures. JOUR ARISE 68 1550
- 2010KR05      RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $I\beta$ ,  $I\epsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- 2010KR05      NUCLEAR REACTIONS <sup>96,102,104</sup>Ru(n,  $\gamma$ ), E=thermal and epithermal; measured  $E\gamma$ ,  $I\gamma$ , cross sections and resonance integrals by activation method. Comparison with previous studies. JOUR PRVCA 81 044310
- <sup>97</sup>Rh      2010PA30      NUCLEAR REACTIONS <sup>89</sup>Y(<sup>9</sup>Be, xn)<sup>96</sup>Tc / <sup>95</sup>Tc / <sup>94</sup>Tc / <sup>92</sup>Nb, E=19-33 MeV; <sup>89</sup>Y(<sup>12</sup>C, xn)<sup>99</sup>Rh / <sup>98</sup>Rh / <sup>97</sup>Rh / <sup>96</sup>Tc / <sup>95</sup>Tc, E=32-47 MeV; <sup>93</sup>Nb( $\alpha$ , xn)<sup>96</sup>Tc / <sup>95</sup>Tc, E=10-17 MeV; measured  $E\gamma$ ,  $I\gamma$ , complete and incomplete fusion  $\sigma(E)$ , excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608

KEYNUMBERS AND KEYWORDS

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**A=98**

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| $^{98}\text{Br}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-B}\rho$ method. JOUR JUPSA 79 073201 |
| $^{98}\text{Rb}$ | 2008FOZS | NUCLEAR REACTIONS $^9\text{Be}$ ( $^{238}\text{U}$ , X), E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. $^{60}\text{Mn}$ , $^{78}\text{Ga}$ , $^{82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95}\text{Rb}$ , $^{98}\text{Rb}$ , $^{92}\text{Y}$ , $^{101}\text{Y}$ , $^{112}\text{Tc}$ deduced isomeric transition, T $_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden   |
| $^{98}\text{Y}$  | 2010BA31 | NUCLEAR REACTIONS U(p, F) $^{89}\text{Y}$ / $^{96}\text{Y}$ / $^{98}\text{Y}$ / $^{99}\text{Y}$ / $^{100}\text{Y}$ , E=30 MeV; measured hyperfine resonance fluorescence spectra; deduced isotope shifts, hyperfine parameters, nuclear spin and prolate shape. JOUR JPGPE 37 105103   |
|                  | 2010BE30 | RADIOACTIVITY $^{98}\text{Y}(\beta^-)$ [from $^{238}\text{U}(\text{n}, \gamma)$ , E=thermal]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma\beta\beta(t)$ , and level half-lives. $^{98}\text{Zr}$ ; deduced levels, J, $\pi$ , B(E2). Comparison of B(E2) strengths in $^{94,96,98}\text{Zr}$ nuclei with IBM calculations. JOUR PRVCA 82 044310   |
|                  | 2010HW03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (x ray)- $\gamma$ coin, half-lives by $\gamma(t)$ using Gammasphere array. $^{93}\text{Kr}$ , $^{151,153}\text{Pr}$ , $^{157}\text{Sm}$ ; deduced levels, J, $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. $^{96,97,98,99}\text{Y}$ , $^{149,150}\text{Pr}$ ; measured E $\gamma$ . JOUR PRVCA 82 034308   |
|                  | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}$ ( $^6\text{Li}$ , X), E=45 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301  |
| $^{98}\text{Zr}$ | 2010BE30 | RADIOACTIVITY $^{98}\text{Y}(\beta^-)$ [from $^{238}\text{U}(\text{n}, \gamma)$ , E=thermal]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma\beta\beta(t)$ , and level half-lives. $^{98}\text{Zr}$ ; deduced levels, J, $\pi$ , B(E2). Comparison of B(E2) strengths in $^{94,96,98}\text{Zr}$ nuclei with IBM calculations. JOUR PRVCA 82 044310   |
| $^{98}\text{Nb}$ | 2011TA01 | NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{X})^{24}\text{Na}$ , $^{100}\text{Mo}(\text{d}, \text{X})^{99}\text{Tc}$ / $^{99}\text{Mo}$ / $^{98}\text{Nb}$ / $^{97}\text{Nb}$ , E<50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ and their uncertainties. Comparison with with ALICE-D, EMPIRE-D and TALYS codes. JOUR ARISE 69 18  |
| $^{98}\text{Mo}$ | 2008SCZS | NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , ( $\gamma$ , n), E<13.2 MeV; measured reaction products; $^{92,94,96,98,100}\text{Mo}$ ; deduced $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner   |
|                  | 2008STZT | RADIOACTIVITY $^{98}\text{Mo}$ , $^{72,76}\text{Ge}$ ; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin; deduced attenuation, g-factor. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P379  |

KEYNUMBERS AND KEYWORDS

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**A=98 (continued)**

- 2009RUZW NUCLEAR REACTIONS  $^{98}\text{Mo}(\gamma, \gamma')$ ,  $E=4.8\text{-}8.4$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , branching gamma ratios. REPT TUNL-XLVIII,P91,Rusev
- 2009WAZW NUCLEAR REACTIONS  $^{77}\text{Se}$ ,  $^{99}\text{Ru}$ ,  $^{101}\text{Ru}$ ,  $^{123}\text{Te}(n, \alpha)$ ,  $E=\text{thermal}$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $E$ ,  $J$ ,  $\pi$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P84,Wagemans
- 2010ER01 NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ ,  $E=\text{bremsstrahlung}$  spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions.  $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ ,  $E<20$  MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- $^{98}\text{Tc}$  2010DI09 NUCLEAR REACTIONS  $^{96}\text{Zr}(^6\text{Li}, 4n)^{98}\text{Tc}$ ,  $E=35$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\text{-}\gamma\text{-coin.}$ ; deduced high-spin states, level scheme,  $J$ ,  $\pi$ , energies,  $B(M1) / B(E2)$  ratios. JOUR CPLEE 27 072501
- $^{98}\text{Ru}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, X)$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ ,  $E=95$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $C(^{96}\text{Ru}, X)$ ,  $(^{98}\text{Ru}, X)$ ,  $(^{100}\text{Ru}, X)$ ,  $(^{102}\text{Ru}, X)$ ,  $(^{104}\text{Ru}, X)$ ,  $(^{102}\text{Pd}, X)$ ,  $(^{104}\text{Pd}, X)$ ,  $(^{106}\text{Pd}, X)$ ,  $(^{108}\text{Pd}, X)$ ,  $(^{110}\text{Pd}, X)$ ,  $(^{106}\text{Cd}, X)$ ,  $(^{108}\text{Cd}, X)$ ,  $(^{112}\text{Cd}, X)$ ,  $E\approx 240$  MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\text{-}\gamma\text{-coin.}$   $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced  $g$  factor,  $B(E2)$ ; calculated  $\sigma(\theta)$ ,  $g$  factor,  $B(E2)$  using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- $^{98}\text{Rh}$  2010PA30 NUCLEAR REACTIONS  $^{89}\text{Y}(^9\text{Be}, xn)^{96}\text{Tc} / ^{95}\text{Tc} / ^{94}\text{Tc} / ^{92}\text{Nb}$ ,  $E=19\text{-}33$  MeV;  $^{89}\text{Y}(^{12}\text{C}, xn)^{99}\text{Rh} / ^{98}\text{Rh} / ^{97}\text{Rh} / ^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=32\text{-}47$  MeV;  $^{93}\text{Nb}(\alpha, xn)^{96}\text{Tc} / ^{95}\text{Tc}$ ,  $E=10\text{-}17$  MeV; measured  $E\gamma$ ,  $I\gamma$ , complete and incomplete fusion  $\sigma(E)$ , excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608
- $^{98}\text{Pd}$  2009FRZZ NUCLEAR REACTIONS  $^{92}\text{Mo}(^{10}\text{B}, 3np)$ ,  $E=54$  MeV; measured  $E\gamma$ ,  $I\gamma$ ;  $^{96}\text{Ru}(^3\text{He}, n)$ ,  $E=12.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\text{-}\gamma(\theta)\text{-coin.}$ ; deduced  $E$ ,  $J$ ,  $\pi$ ,  $B(M1)$ ,  $B(E2)$ , half-life; calculated yrast states,  $B(E2)$  using shell model code OXBASH. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P529,Fransen
- $^{98}\text{In}$  2008MOZO RADIOACTIVITY  $^{96}\text{Cd}$ ;  $^{98}\text{In}$ ;  $^{100}\text{Sn}$  [from RF fragment separator]; measured  $I\beta(t)$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ ;  $^{98}\text{In}$  isomer decay. Compared to other data. Results on CD only. CONF E.Lansing (NS2008),P2,Montes

**A=99**

- $^{99}\text{Y}$  2010BA31 NUCLEAR REACTIONS  $\text{U}(p, F)^{89}\text{Y} / ^{96}\text{Y} / ^{98}\text{Y} / ^{99}\text{Y} / ^{100}\text{Y}$ ,  $E=30$  MeV; measured hyperfine resonance fluorescence spectra; deduced isotope shifts, hyperfine parameters, nuclear spin and prolate shape. JOUR JPGPE 37 105103

## A=99 (continued)

- 2010HW03 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ , (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array.  $^{93}\text{Kr}$ ,  $^{151,153}\text{Pr}$ ,  $^{157}\text{Sm}$ ; deduced levels, J,  $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios.  $^{96,97,98,99}\text{Y}$ ,  $^{149,150}\text{Pr}$ ; measured  $E\gamma$ . JOUR PRVCA 82 034308
- 2010RE01 NUCLEAR REACTIONS  $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors.  $^{88}\text{Br}$ ,  $^{93}\text{Rb}$ ,  $^{95,98,99}\text{Y}$ ,  $^{99}\text{Mo}$ ,  $^{100}\text{Tc}$ ,  $^{121,123}\text{In}$ ,  $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ ,  $^{123,125,127,131}\text{Sb}$ ,  $^{131}\text{I}$ ,  $^{132}\text{Te}$ ,  $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- $^{99}\text{Mo}$  2008SCZS NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ ,  $(\gamma, n)$ , E<13.2 MeV; measured reaction products;  $^{92,94,96,98,100}\text{Mo}$ ; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2010AD13 NUCLEAR REACTIONS  $^{232}\text{Th}(n, \gamma)$ ,  $(n, 2n)$ ,  $(n, F)^{99}\text{Mo}$ ,  $^{235,238}\text{U}(n, \gamma)$ ,  $(n, F)^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ , E=thermal-1000 MeV [from  $^{208}\text{Pb}(d, \text{X})$ , E=1.6 GeV spallation source]; measured  $E\gamma$ ,  $I\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
- 2010BU06 NUCLEAR REACTIONS  $^{152}\text{Sm}$ ,  $^{165}\text{Ho}$ ,  $^{55}\text{Mn}$ ,  $^{98}\text{Mo}$ ,  $^{197}\text{Au}(n, \gamma)$ , E=epithermal; measured  $E\gamma$ ,  $I\gamma$ ; deduced resonance energies. Comparison with theoretical calculations. JOUR NIMBE 268 2578
- 2010CH41 NUCLEAR REACTIONS  $^{239}\text{Pu}(n, F)^{99}\text{Mo} / ^{95}\text{Zr} / ^{140}\text{Ba} / ^{144}\text{Ce} / ^{147}\text{Nd}$ , E=0.2-2 MeV; measured fission products; deduced fission product yields and its energy dependence. Comparison with ENDF / B-VII.0 library, LANL-ILRR measurements. JOUR NDSBA 111 2923
- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, F)^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010EL02 NUCLEAR REACTIONS  $^{98}\text{Mo}$ ,  $^{186}\text{W}$ ,  $^{197}\text{Au}(n, \gamma)$ , E=thermal; measured  $E\gamma$ ,  $I\gamma$ ; deduced neutron flux,  $\sigma$ , resonance integrals. Comparison with available data. JOUR JRNCD 284 321
- 2010ER01 NUCLEAR REACTIONS  $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma(\theta)$ , photon yields, photon strength functions.  $^{92,94,96,98,100}\text{Mo}(\gamma, n)$ , E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319



## A=99 (continued)

- 2010ERZY NUCLEAR REACTIONS Mo( $\gamma$ , xnyp), E=67.7 MeV bremsstrahlung; measured yields with activation method in multiparticle photodisintegration.  $^{90,99}\text{Mo}$ ,  $^{97,96,95,90,89}\text{Nb}$ ,  $^{89}\text{Zr}$ ; deduced relative yields. CONF St.-Petersburg,P190,Ermakov
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2010RE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\text{}^6\text{Li}, \text{X})$ , E=45 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors.  $^{88}\text{Br}$ ,  $^{93}\text{Rb}$ ,  $^{95,98,99}\text{Y}$ ,  $^{99}\text{Mo}$ ,  $^{100}\text{Tc}$ ,  $^{121,123}\text{In}$ ,  $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ ,  $^{123,125,127,131}\text{Sb}$ ,  $^{131}\text{I}$ ,  $^{132}\text{Te}$ ,  $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- 2010SE15 NUCLEAR REACTIONS  $^{235,238}\text{U}$ ,  $^{239}\text{Pu}(\text{n}, \text{F})^{99}\text{Mo} / ^{95}\text{Zr} / ^{137}\text{Cs} / ^{140}\text{Ba} / ^{141,143}\text{Ce} / ^{147}\text{Nd}$ , E=0.4-1.9 MeV; measured fission products; deduced fission product yields. Comparison with ENDF / B-VII.0 library, BIG TEN critical assembly. JOUR NDSBA 111 2891
- 2011TA01 NUCLEAR REACTIONS  $^{27}\text{Al}(\text{d}, \text{X})^{24}\text{Na}$ ,  $^{100}\text{Mo}(\text{d}, \text{X})^{99}\text{Tc} / ^{99}\text{Mo} / ^{98}\text{Nb} / ^{97}\text{Nb}$ , E<50 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  and their uncertainties. Comparison with with ALICE-D, EMPIRE-D and TALYS codes. JOUR ARISE 69 18
- $^{99}\text{Tc}$  2008KIZS NUCLEAR REACTIONS Ta(n, x), E=0.01-100 eV; Mo(n, x), E=0.01-200 eV; measured En, In using TOF; deduced  $\sigma$ ; Mo(p, xn) $^{95}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{96}\text{Tc}$ , E=2.5-42 MeV; Mo(p, xn) $^{99}\text{Tc}$ , E=2.5-42 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , isomeric  $\sigma$ ; calculated  $\sigma$  using ALICE-IPPE. Compared with other data, ENDF / B-VI.8 (n, xn). CONF Nice (Nucl Data for Sci and Technol) Proc,P533
- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010LE13 NUCLEAR REACTIONS Mo(p, X) $^{93}\text{Tc} / ^{94}\text{Tc} / ^{95}\text{Tc} / ^{96}\text{Tc} / ^{99}\text{Tc} / ^{90}\text{Mo} / ^{93}\text{Mo} / ^{99}\text{Mo} / ^{90}\text{Nb} / ^{92}\text{Nb} / ^{95}\text{Nb} / ^{96}\text{Nb} / ^{89}\text{Zr} / ^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=8.4-37.1 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR ARISE 68 2355
- 2011TA01 NUCLEAR REACTIONS  $^{27}\text{Al}(\text{d}, \text{X})^{24}\text{Na}$ ,  $^{100}\text{Mo}(\text{d}, \text{X})^{99}\text{Tc} / ^{99}\text{Mo} / ^{98}\text{Nb} / ^{97}\text{Nb}$ , E<50 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  and their uncertainties. Comparison with with ALICE-D, EMPIRE-D and TALYS codes. JOUR ARISE 69 18

KEYNUMBERS AND KEYWORDS

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**A=99 (continued)**

- <sup>99</sup>Rh      2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010PA30      NUCLEAR REACTIONS <sup>89</sup>Y(<sup>9</sup>Be, xn)<sup>96</sup>Tc / <sup>95</sup>Tc / <sup>94</sup>Tc / <sup>92</sup>Nb, E=19-33 MeV; <sup>89</sup>Y(<sup>12</sup>C, xn)<sup>99</sup>Rh / <sup>98</sup>Rh / <sup>97</sup>Rh / <sup>96</sup>Tc / <sup>95</sup>Tc, E=32-47 MeV; <sup>93</sup>Nb( $\alpha$ , xn)<sup>96</sup>Tc / <sup>95</sup>Tc, E=10-17 MeV; measured E $\gamma$ , I $\gamma$ , complete and incomplete fusion  $\sigma$ (E), excitation functions deduced barrier distributions and breakup effects. Coupled-channel (CC) calculations. JOUR PRVCA 82 044608

**A=100**

- <sup>100</sup>Y      2010BA31      NUCLEAR REACTIONS U(p, F)<sup>89</sup>Y / <sup>96</sup>Y / <sup>98</sup>Y / <sup>99</sup>Y / <sup>100</sup>Y, E=30 MeV; measured hyperfine resonance fluorescence spectra; deduced isotope shifts, hyperfine parameters, nuclear spin and prolate shape. JOUR JPGPE 37 105103
- 2010BR15      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, F)<sup>100</sup>Y / <sup>101</sup>Y / <sup>102</sup>Y / <sup>103</sup>Y / <sup>104</sup>Y / <sup>103</sup>Zr / <sup>104</sup>Zr / <sup>105</sup>Zr / <sup>106</sup>Zr / <sup>107</sup>Zr / <sup>105</sup>Nb / <sup>106</sup>Nb / <sup>107</sup>Nb / <sup>108</sup>Nb / <sup>109</sup>Nb / <sup>108</sup>Mo / <sup>109</sup>Mo / <sup>110</sup>Mo / <sup>111</sup>Mo / <sup>112</sup>Mo / <sup>110</sup>Tc / <sup>111</sup>Tc / <sup>112</sup>Tc / <sup>113</sup>Tc / <sup>114</sup>Tc / E=11.4, 750 MeV / nucleon; measured energy loss time-of-flight, yields. JOUR PRVCA 82 044312
- <sup>100</sup>Zr      2009SH42      NUCLEAR REACTIONS <sup>12</sup>C(<sup>238</sup>U, X), E=1.45 GeV; measured E $\gamma$ , I $\gamma$  using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup>Xe; deduced levels, J,  $\pi$ . <sup>100</sup>Zr, <sup>106,107,108,109</sup>Ru, <sup>133</sup>Xe, <sup>138</sup>Xe; measured E $\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305
- <sup>100</sup>Mo      2008SCZS      NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma$ ,  $\gamma'$ ), ( $\gamma$ , n), E<13.2 MeV; measured reaction products; <sup>92,94,96,98,100</sup>Mo; deduced  $\sigma$ , dipole-strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P355,Schwengner
- 2009DA25      RADIOACTIVITY <sup>48</sup>Ca, <sup>82</sup>Se, <sup>96</sup>Zr, <sup>100</sup>Mo, <sup>116</sup>Cd, <sup>130</sup>Te, <sup>150</sup>Nd(2 $\beta$ ); measured T<sub>1/2</sub> for zero / two-neutrino 2 $\beta$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c
- 2010ER01      NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma$ ,  $\gamma'$ ), E=bremsstrahlung spectrum with endpoints at 13.2 and 13.9 MeV; measured  $\gamma$  spectra,  $\gamma$ ( $\theta$ ), photon yields, photon strength functions. <sup>92,94,96,98,100</sup>Mo( $\gamma$ , n), E<20 MeV bremsstrahlung spectrum; measured  $\gamma$  continuum spectra, activation yields, and  $\sigma$ ; deduced dipole strength functions, GDR. Comparisons with RIPL-2 database, Lorentzian parametrizations, and calculations using TALYS code. JOUR PRVCA 81 034319
- 2010SI06      RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te(2 $\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270

KEYNUMBERS AND KEYWORDS

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A=100 (*continued*)

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| $^{100}\text{Tc}$ | 2008WEZX | NUCLEAR REACTIONS $^{99}\text{Tc}(n, \gamma)$ , E=thermal; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; $^{99}\text{Tc}(d, p)$ , E=22 MeV; measured $E_p$ , $I_p(\theta=30^\circ)$ , $I_p(\theta=60^\circ)$ ; deduced $\sigma$ ; neutron binding energy. No protons corresponding to 223 keV state in $^{100}\text{Tc}$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P611  |
|                   | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, X)$ , E=45 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301   |
| $^{100}\text{Ru}$ | 2008STZK | NUCLEAR REACTIONS $\text{Cd}(^{32}\text{S}, X)$ , $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured $E(\text{particle})$ , $I(\text{particle}, \theta)$ ; $\text{C}(^{96}\text{Ru}, X)$ , $(^{98}\text{Ru}, X)$ , $(^{100}\text{Ru}, X)$ , $(^{102}\text{Ru}, X)$ , $(^{104}\text{Ru}, X)$ , $(^{102}\text{Pd}, X)$ , $(^{104}\text{Pd}, X)$ , $(^{106}\text{Pd}, X)$ , $(^{108}\text{Pd}, X)$ , $(^{110}\text{Pd}, X)$ , $(^{106}\text{Cd}, X)$ , $(^{108}\text{Cd}, X)$ , $(^{112}\text{Cd}, X)$ , $E\approx 240$ MeV; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin. $^{96,98,100,102,104}\text{Ru}$ , $^{102,104,106,108,110}\text{Pd}$ , $^{104,106,108,110,112,114}\text{Cd}$ deduced g factor, $B(E2)$ ; calculated $\sigma(\theta)$ , g factor, $B(E2)$ using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery |
|                   | 2010SI06 | RADIOACTIVITY $^{100}\text{Mo}$ , $^{82}\text{Se}$ , $^{116}\text{Cd}$ , $^{150}\text{Nd}$ , $^{96}\text{Zr}$ , $^{48}\text{Ca}$ , $^{130}\text{Te}(2\beta^-)$ ; measured $E_e$ , $I_e$ ; deduced $T_{1/2}$ . JOUR PPNPD 64 270   |
| $^{100}\text{Rh}$ | 2010KH02 | NUCLEAR REACTIONS $\text{Pd}(p, X)^{105}\text{Ag} / ^{106}\text{Ag} / ^{100}\text{Pd} / ^{101}\text{Pd} / ^{100}\text{Rh} / ^{101}\text{Rh} / ^{105}\text{Rh}$ , E<40 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303   |
| $^{100}\text{Pd}$ | 2008WIZQ | NUCLEAR REACTIONS $^{102,104,106,108}\text{Pd}(p, t)$ , E=25 MeV; measured $E(\text{particle})$ , $I(\text{particle}, \theta)$ , $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin; deduced $d\sigma(\theta)$ , E, J, $\pi$ ; calculated $d\sigma(\theta)$ , E, J, $\pi$ using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P61,Winkler  |
|                   | 2009RAZX | NUCLEAR REACTIONS $^{99}\text{Ru}(^3\text{He}, 2n)$ , E=17 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\gamma\gamma(\theta)$ -coin.; deduced E, J, $\pi$ , multipole mixing ratio; calculated mixed symmetry states using IBM-2 and shell-model code ANTOINE. HORUS cube. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P597,Radeck  |
|                   | 2010KH02 | NUCLEAR REACTIONS $\text{Pd}(p, X)^{105}\text{Ag} / ^{106}\text{Ag} / ^{100}\text{Pd} / ^{101}\text{Pd} / ^{100}\text{Rh} / ^{101}\text{Rh} / ^{105}\text{Rh}$ , E<40 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303   |
| $^{100}\text{Cd}$ | 2009EK01 | NUCLEAR REACTIONS $^{109}\text{Ag}(^{100}\text{Cd}, ^{100}\text{Cd}')$ , E=287.0 MeV; $^{64}\text{Zn}$ , $^{109}\text{Ag}(^{102}\text{Cd}, ^{102}\text{Cd}')$ , E=292.7 MeV; $^{64}\text{Zn}$ , $^{109}\text{Ag}(^{104}\text{Cd}, ^{104}\text{Cd}')$ , E=298.7 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma(\text{particle})$ -coin, and $\gamma$ -ray yields using REX-ISOLDE facility. $^{64}\text{Zn}$ , $^{100,102,104}\text{Cd}$ , $^{109}\text{Ag}$ ; deduced levels, J, $\pi$ , E2 matrix elements, electric quadrupole moments. Comparison with shell model calculations. JOUR PRVCA 80 054302   |
|                   | 2009EK01 | NUCLEAR MOMENTS $^{100,102,104}\text{Cd}$ ; measured electric quadrupole moments of first 2+ states using reorientation method in Coulomb excitation. Comparison with shell model calculations. JOUR PRVCA 80 054302  |

KEYNUMBERS AND KEYWORDS

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**A=100 (continued)**

<sup>100</sup>Sn      2008MOZO      RADIOACTIVITY <sup>96</sup>Cd; <sup>98</sup>In; <sup>100</sup>Sn [from RF fragment separator]; measured Iβ(t), Eγ, Iγ; deduced T<sub>1/2</sub>; <sup>98</sup>In isomer decay. Compared to other data. Results on CD only. CONF E.Lansing (NS2008),P2,Montes

**A=101**

<sup>101</sup>Kr      2010OH02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, ΔE-TOF-Bρ method. JOUR JUPSA 79 073201

<sup>101</sup>Y      2008FOZS      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), Eγ, Iγ, (particle)γ-coin. <sup>60</sup>Mn, <sup>78</sup>Ga, <sup>82</sup>Ga, <sup>92</sup>Br, <sup>95</sup>Rb, <sup>98</sup>Rb, <sup>92</sup>Y, <sup>101</sup>Y, <sup>112</sup>Tc deduced isomeric transition, T<sub>1/2</sub>, isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden

                 2010BR15      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, F)<sup>100</sup>Y / <sup>101</sup>Y / <sup>102</sup>Y / <sup>103</sup>Y / <sup>104</sup>Y / , <sup>103</sup>Zr / <sup>104</sup>Zr / <sup>105</sup>Zr / <sup>106</sup>Zr / <sup>107</sup>Zr / <sup>105</sup>Nb / <sup>106</sup>Nb / <sup>107</sup>Nb / <sup>108</sup>Nb / <sup>109</sup>Nb / <sup>108</sup>Mo / <sup>109</sup>Mo / <sup>110</sup>Mo / <sup>111</sup>Mo / <sup>112</sup>Mo / <sup>110</sup>Tc / <sup>111</sup>Tc / <sup>112</sup>Tc / <sup>113</sup>Tc / <sup>114</sup>Tc / E=11.4, 750 MeV / nucleon; measured energy loss time-of-flight, yields. JOUR PRVCA 82 044312

<sup>101</sup>Nb      2010AL22      RADIOACTIVITY <sup>101</sup>Nb, <sup>105</sup>Mo, <sup>102,104,105,106,107</sup>Tc(β<sup>-</sup>) [from U(p, X), E=30, 50 MeV]; measured Eγ, Iγ, mass; deduced β-feeding probabilities, discrepancies for decay heat of <sup>239</sup>Pu. JOUR PRLTA 105 202501

                 2010RZ01      RADIOACTIVITY <sup>248</sup>Cm(SF); measured Eγ, Iγ, γγ-coin, γγ(θ) using EUROAM2 array. <sup>145</sup>Cs; deduced levels, J, π, multiplicities, bands, configurations, electric dipole moment D<sub>0</sub>. <sup>101,102</sup>Nb; measured Eγ. Comparison with quasiparticle-rotor model calculations. Z=54-64, N=84-92; systematics of D<sub>0</sub> parameter for even nuclei of even neutron number. JOUR PRVCA 82 017301

<sup>101</sup>Mo      2010AL22      RADIOACTIVITY <sup>101</sup>Nb, <sup>105</sup>Mo, <sup>102,104,105,106,107</sup>Tc(β<sup>-</sup>) [from U(p, X), E=30, 50 MeV]; measured Eγ, Iγ, mass; deduced β-feeding probabilities, discrepancies for decay heat of <sup>239</sup>Pu. JOUR PRLTA 105 202501

<sup>101</sup>Tc      2009Y011      RADIOACTIVITY <sup>101</sup>Tc(β<sup>-</sup>) [from <sup>100</sup>Mo(n, γ)<sup>101</sup>Mo(β<sup>-</sup>)]; measured Eγ, Iγ; deduced T<sub>1/2</sub>, chemical separation of Tc and Mo fraction. JOUR HHHHD 31 193

                 2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th(γ, F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured Eγ, Iγ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24

KEYNUMBERS AND KEYWORDS

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A=101 (*continued*)

$^{101}\text{Ru}$	2009Y011	RADIOACTIVITY $^{101}\text{Tc}(\beta^-)$ [from $^{100}\text{Mo}(n, \gamma)^{101}\text{Mo}(\beta^-)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ ; chemical separation of Tc and Mo fraction. JOUR HHHHD 31 193
$^{101}\text{Rh}$	2008SKZX	NUCLEAR REACTIONS $^{101}\text{Ru}(^3\text{He}, x)^{101}\text{Rh}$ , $E \approx 12-34$ MeV; $^{101}\text{Ru}(^3\text{He}, x)^{102}\text{Rh}$ , $E \approx 12-34$ MeV; $^{102}\text{Ru}(^3\text{He}, x)^{101}\text{Rh}$ , $E \approx 18-34$ MeV; $^{102}\text{Ru}(^3\text{He}, x)^{102}\text{Rh}$ , $E \approx 17-34$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , thick target yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P1379
	2010BEZU	NUCLEAR REACTIONS $^{102,106,108}\text{Pd}(\gamma, p)$ , $E=30$ MeV bremsstrahlung; $^{102,110}\text{Pd}(\gamma, n)$ , $E=30$ MeV bremsstrahlung; measured yield with activation method; $^{101,109}\text{Pd}$ , $^{101,105,107}\text{Rh}$ ; deduced yields, isomeric ratios $Y_m / Y_g$ . CONF St.-Petersburg,P155,Belyshev
	2010DE01	NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, F)^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , $E=50, 3500$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
	2010KH02	NUCLEAR REACTIONS $\text{Pd}(p, X)^{105}\text{Ag} / ^{106}\text{Ag} / ^{100}\text{Pd} / ^{101}\text{Pd} / ^{100}\text{Rh} / ^{101}\text{Rh} / ^{105}\text{Rh}$ , $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303
$^{101}\text{Pd}$	2010BEZU	NUCLEAR REACTIONS $^{102,106,108}\text{Pd}(\gamma, p)$ , $E=30$ MeV bremsstrahlung; $^{102,110}\text{Pd}(\gamma, n)$ , $E=30$ MeV bremsstrahlung; measured yield with activation method; $^{101,109}\text{Pd}$ , $^{101,105,107}\text{Rh}$ ; deduced yields, isomeric ratios $Y_m / Y_g$ . CONF St.-Petersburg,P155,Belyshev
	2010KH02	NUCLEAR REACTIONS $\text{Pd}(p, X)^{105}\text{Ag} / ^{106}\text{Ag} / ^{100}\text{Pd} / ^{101}\text{Pd} / ^{100}\text{Rh} / ^{101}\text{Rh} / ^{105}\text{Rh}$ , $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303
	2010ZH40	NUCLEAR REACTIONS $^{76}\text{Ge}(^{28}\text{Si}, 3n\gamma)^{101}\text{Pd}$ , $E$ not given; measured reaction products, $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, yrast bands, $J$ , $\pi$ , level scheme. JOUR CPCHC 34 1598
$^{101}\text{Sn}$	2008DAZS	RADIOACTIVITY $^{109}\text{Xe}(\alpha)$ [from $^{54}\text{Fe} + ^{58}\text{Ni} \rightarrow ^{112}\text{Xe} \rightarrow ^{109}\text{Xe} + 3n$ ]; $^{105}\text{Te}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $I\alpha$ ; deduced $^{101}\text{Sn}$ $E$ , $J$ , $\pi$ ; calculated $E(d_{5/2})$ , $E(g_{7/2})$ using shell model. Decay chain compared to that of $^{111}\text{Xe} \rightarrow ^{107}\text{Te} \rightarrow ^{103}\text{Sn}$ from other papers. Results on CD only. CONF E.Lansing (NS2008),P3,Darby
	2010DA17	RADIOACTIVITY $^{109}\text{Xe}$ , $^{105}\text{Te}(\alpha)$ ; measured $I\alpha$ , $E\alpha$ , $I\gamma$ , $I\gamma$ ; deduced $J$ , $\pi$ for ground and first excited states in $^{101}\text{Sn}$ , ground state spin inversion, strong pairing interaction. Comparison with shell model calculations. JOUR PRLTA 105 162502

## A=102

- $^{102}\text{Y}$  2010BR15 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{F})^{100}\text{Y} / ^{101}\text{Y} / ^{102}\text{Y} / ^{103}\text{Y} / ^{104}\text{Y} / ^{103}\text{Zr} / ^{104}\text{Zr} / ^{105}\text{Zr} / ^{106}\text{Zr} / ^{107}\text{Zr} / ^{105}\text{Nb} / ^{106}\text{Nb} / ^{107}\text{Nb} / ^{108}\text{Nb} / ^{109}\text{Nb} / ^{108}\text{Mo} / ^{109}\text{Mo} / ^{110}\text{Mo} / ^{111}\text{Mo} / ^{112}\text{Mo} / ^{110}\text{Tc} / ^{111}\text{Tc} / ^{112}\text{Tc} / ^{113}\text{Tc} / ^{114}\text{Tc} / E=11.4, 750 \text{ MeV} / \text{nucleon}; \text{measured energy loss time-of-flight, yields. JOUR PRVCA 82 044312}$
- $^{102}\text{Nb}$  2010RZ01 RADIOACTIVITY  $^{248}\text{Cm}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using EUROAM2 array.  $^{145}\text{Cs}$ ; deduced levels, J,  $\pi$ , multipolarities, bands, configurations, electric dipole moment  $D_0$ .  $^{101,102}\text{Nb}$ ; measured  $E\gamma$ . Comparison with quasiparticle-rotor model calculations.  $Z=54-64$ ,  $N=84-92$ ; systematics of  $D_0$  parameter for even nuclei of even neutron number. JOUR PRVCA 82 017301
- $^{102}\text{Mo}$  2009YA26 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{102}\text{Mo}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , bands. Systematic comparison with experimental data. JOUR CPCHC 33 s01 199
- $^{102}\text{Tc}$  2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X),  $E=30, 50 \text{ MeV}$ ]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- $^{102}\text{Ru}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ ,  $E=95 \text{ MeV}$ ; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, \text{X})$ ,  $(^{98}\text{Ru}, \text{X})$ ,  $(^{100}\text{Ru}, \text{X})$ ,  $(^{102}\text{Ru}, \text{X})$ ,  $(^{104}\text{Ru}, \text{X})$ ,  $(^{102}\text{Pd}, \text{X})$ ,  $(^{104}\text{Pd}, \text{X})$ ,  $(^{106}\text{Pd}, \text{X})$ ,  $(^{108}\text{Pd}, \text{X})$ ,  $(^{110}\text{Pd}, \text{X})$ ,  $(^{106}\text{Cd}, \text{X})$ ,  $(^{108}\text{Cd}, \text{X})$ ,  $(^{112}\text{Cd}, \text{X})$ ,  $E\approx 240 \text{ MeV}$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor,  $B(E2)$ ; calculated  $\sigma(\theta)$ , g factor,  $B(E2)$  using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X),  $E=30, 50 \text{ MeV}$ ]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- $^{102}\text{Rh}$  2008SKZX NUCLEAR REACTIONS  $^{101}\text{Ru}(^3\text{He}, \text{x})^{101}\text{Rh}$ ,  $E\approx 12-34 \text{ MeV}$ ;  $^{101}\text{Ru}(^3\text{He}, \text{x})^{102}\text{Rh}$ ,  $E\approx 12-34 \text{ MeV}$ ;  $^{102}\text{Ru}(^3\text{He}, \text{x})^{101}\text{Rh}$ ,  $E\approx 18-34 \text{ MeV}$ ;  $^{102}\text{Ru}(^3\text{He}, \text{x})^{102}\text{Rh}$ ,  $E\approx 17-34 \text{ MeV}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , thick target yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P1379
- $^{102}\text{Pd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ ,  $E=95 \text{ MeV}$ ; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, \text{X})$ ,  $(^{98}\text{Ru}, \text{X})$ ,  $(^{100}\text{Ru}, \text{X})$ ,  $(^{102}\text{Ru}, \text{X})$ ,  $(^{104}\text{Ru}, \text{X})$ ,  $(^{102}\text{Pd}, \text{X})$ ,  $(^{104}\text{Pd}, \text{X})$ ,  $(^{106}\text{Pd}, \text{X})$ ,  $(^{108}\text{Pd}, \text{X})$ ,  $(^{110}\text{Pd}, \text{X})$ ,  $(^{106}\text{Cd}, \text{X})$ ,  $(^{108}\text{Cd}, \text{X})$ ,  $(^{112}\text{Cd}, \text{X})$ ,  $E\approx 240 \text{ MeV}$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor,  $B(E2)$ ; calculated  $\sigma(\theta)$ , g factor,  $B(E2)$  using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2008WIZQ NUCLEAR REACTIONS  $^{102,104,106,108}\text{Pd}(\text{p}, \text{t})$ ,  $E=25 \text{ MeV}$ ; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ,  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced  $d\sigma(\theta)$ , E, J,  $\pi$ ; calculated  $d\sigma(\theta)$ , E, J,  $\pi$  using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P61,Winkler

KEYNUMBERS AND KEYWORDS

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**A=102 (continued)**

- <sup>102</sup>Cd      2009EK01      NUCLEAR REACTIONS <sup>109</sup>Ag(<sup>100</sup>Cd, <sup>100</sup>Cd'), E=287.0 MeV; <sup>64</sup>Zn, <sup>109</sup>Ag(<sup>102</sup>Cd, <sup>102</sup>Cd'), E=292.7 MeV; <sup>64</sup>Zn, <sup>109</sup>Ag(<sup>104</sup>Cd, <sup>104</sup>Cd'), E=298.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ (particle)-coin, and  $\gamma$ -ray yields using REX-ISOLDE facility. <sup>64</sup>Zn, <sup>100,102,104</sup>Cd, <sup>109</sup>Ag; deduced levels, J,  $\pi$ , E2 matrix elements, electric quadrupole moments. Comparison with shell model calculations. JOUR PRVCA 80 054302
- 2009EK01      NUCLEAR MOMENTS <sup>100,102,104</sup>Cd; measured electric quadrupole moments of first 2+ states using reorientation method in Coulomb excitation. Comparison with shell model calculations. JOUR PRVCA 80 054302

**A=103**

- <sup>103</sup>Rb      2010OH02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>103</sup>Y      2010BR15      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, F)<sup>100</sup>Y / <sup>101</sup>Y / <sup>102</sup>Y / <sup>103</sup>Y / <sup>104</sup>Y / , <sup>103</sup>Zr / <sup>104</sup>Zr / <sup>105</sup>Zr / <sup>106</sup>Zr / <sup>107</sup>Zr / <sup>105</sup>Nb / <sup>106</sup>Nb / <sup>107</sup>Nb / <sup>108</sup>Nb / <sup>109</sup>Nb / <sup>108</sup>Mo / <sup>109</sup>Mo / <sup>110</sup>Mo / <sup>111</sup>Mo / <sup>112</sup>Mo / <sup>110</sup>Tc / <sup>111</sup>Tc / <sup>112</sup>Tc / <sup>113</sup>Tc / <sup>114</sup>Tc / E=11.4, 750 MeV / nucleon; measured energy loss time-of-flight, yields. JOUR PRVCA 82 044312
- <sup>103</sup>Nb      2010WA26      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>103</sup>Nb, <sup>105</sup>Mo, <sup>107</sup>Tc; deduced levels, J,  $\pi$ , high-spin states, 2 $\gamma$ -vibrational bands. JOUR NUPAB 834 94c
- <sup>103</sup>Ru      2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010KR05      RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured E $\gamma$ , I $\gamma$ ; deduced I $\beta$ , I $\epsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- 2010KR05      NUCLEAR REACTIONS <sup>96,102,104</sup>Ru(n,  $\gamma$ ), E=thermal and epithermal; measured E $\gamma$ , I $\gamma$ , cross sections and resonance integrals by activation method. Comparison with previous studies. JOUR PRVCA 81 044310

KEYNUMBERS AND KEYWORDS

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**A=103 (continued)**

$^{103}\text{Rh}$	2010KR05	RADIOACTIVITY $^{96}\text{Tc}(\beta^+)$ , (EC)[from $^{96}\text{Ru}(\text{n}, \text{p})$ ]; $^{97}\text{Ru}(\beta^+)$ , (EC)[from $^{96}\text{Ru}(\text{n}, \gamma)$ , $E < 1$ eV]; $^{103,105}\text{Ru}(\beta^-)$ [from $^{102,104}\text{Ru}(\text{n}, \gamma)$ , $E < 1$ keV]; $^{105}\text{Rh}(\beta^-)$ [from $^{105}\text{Ru}(\beta^-)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced $I\beta$ , $I\epsilon$ , $\log ft$ ; $^{96}\text{Mo}$ , $^{97}\text{Tc}$ , $^{103,105}\text{Rh}$ , $^{105}\text{Pd}$ ; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
$^{103}\text{Pd}$	2008DIZT	NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130,132}\text{Ba}$ , $^{156}\text{Dy}(\text{n}, \gamma)$ , $E \approx 25$ keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with MACS30 recommended values. CONF Nice (Nucl Data for Sci and Technol) Proc,P575
	2008MEZV	NUCLEAR REACTIONS $^{209}\text{Bi}(\alpha, \text{x})$ , $E = 28.8, 32.8$ MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; $^{186}\text{W}(\text{p}, \text{n})$ , $E = 7-15$ MeV; deduced $\sigma$ ; calculated $\sigma$ ; $\text{Zn}(\text{d}, \text{x})^{61}\text{Cu}$ , $E \approx 3-19$ MeV; $\text{Zn}(\text{d}, \text{x})^{64}\text{Cu}$ , $E \approx 3-19$ MeV; $\text{Zn}(\text{d}, \text{x})^{66}\text{Ga}$ , $E \approx 3-19$ MeV; $\text{Zn}(\text{d}, \text{x})^{67}\text{Ga}$ , $E \approx 3-19$ MeV; $\text{Zn}(\text{d}, \text{x})^{65}\text{Zn}$ , $E \approx 3-19$ MeV; $\text{Zn}(\text{d}, \text{x})^{69}\text{Zn}$ , $E \approx 3-19$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields; $^{103}\text{Rh}(\text{d}, 2\text{n})$ , $E \approx 3-20$ MeV; $^{232}\text{Th}(\text{p}, 3\text{n})$ , $E \approx 13-31$ MeV; calculated $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403
	2010DI01	NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130}\text{Ba}$ , $^{132}\text{Ba}$ , $^{156}\text{Dy}$ , $^{197}\text{Au}(\text{n}, \gamma)$ , $E = 0-120$ keV; measured $E\gamma$ , $I\gamma$ , Maxwellian-averaged $\sigma$ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801

**A=104**

$^{104}\text{Y}$	2010BR15	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{F})^{100}\text{Y} / ^{101}\text{Y} / ^{102}\text{Y} / ^{103}\text{Y} / ^{104}\text{Y} / ^{103}\text{Zr} / ^{104}\text{Zr} / ^{105}\text{Zr} / ^{106}\text{Zr} / ^{107}\text{Zr} / ^{105}\text{Nb} / ^{106}\text{Nb} / ^{107}\text{Nb} / ^{108}\text{Nb} / ^{109}\text{Nb} / ^{108}\text{Mo} / ^{109}\text{Mo} / ^{110}\text{Mo} / ^{111}\text{Mo} / ^{112}\text{Mo} / ^{110}\text{Tc} / ^{111}\text{Tc} / ^{112}\text{Tc} / ^{113}\text{Tc} / ^{114}\text{Tc} / E = 11.4, 750$ MeV / nucleon; measured energy loss time-of-flight, yields. JOUR PRVCA 82 044312
$^{104}\text{Zr}$	2010YE08	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{104}\text{Zr}$ ; deduced levels, $J$ , $\pi$ , bands, yrast structure, configurations. Comparison with projected shell model (PSM) calculations. JOUR PRVCA 82 027302
$^{104}\text{Nb}$	2009WA31	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; $^{104}\text{Nb}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced high-spin states, level scheme, $J$ , $\pi$ , rotational bands. Comparison with experimental data. JOUR CPCHC 33 s01 158
$^{104}\text{Mo}$	2008GOZO	RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured $E\gamma$ , $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
$^{104}\text{Tc}$	2008GOZO	RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured $E\gamma$ , $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
	2009ALZW	RADIOACTIVITY $^{104,105}\text{Tc}$ [from $\text{U}(\text{p}, \text{SF})$ ]( $\beta^-$ ); measured $E\gamma$ , $I\gamma$ using TAGS (Total Absorption Gamma Spectrometer); deduced spectrum and strength. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P207,Algora



A=104 (*continued*)

- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X), E=30, 50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- $^{104}\text{Ru}$  2008STZK NUCLEAR REACTIONS Cd( $^{32}\text{S}$ , X),  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured E(particle), I(particle,  $\theta$ ); C( $^{96}\text{Ru}$ , X), ( $^{98}\text{Ru}$ , X), ( $^{100}\text{Ru}$ , X), ( $^{102}\text{Ru}$ , X), ( $^{104}\text{Ru}$ , X), ( $^{102}\text{Pd}$ , X), ( $^{104}\text{Pd}$ , X), ( $^{106}\text{Pd}$ , X), ( $^{108}\text{Pd}$ , X), ( $^{110}\text{Pd}$ , X), ( $^{106}\text{Cd}$ , X), ( $^{108}\text{Cd}$ , X), ( $^{112}\text{Cd}$ , X), E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2009ALZW RADIOACTIVITY  $^{104,105}\text{Tc}$ [from U(p, SF)]( $\beta^-$ ); measured  $E\gamma$ ,  $I\gamma$  using TAGS (Total Absorption Gamma Spectrometer); deduced spectrum and strength. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P207,Algora
- 2009BE50 RADIOACTIVITY  $^{96}\text{Ru}(2\beta^+)$ , ( $\beta^+\text{EC}$ ), (2EC);  $^{104}\text{Ru}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes, including neutrino-less. HPGe detector at the Gran Sasso National Laboratories. JOUR ZAANE 42 171
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X), E=30, 50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- $^{104}\text{Pd}$  2008STZK NUCLEAR REACTIONS Cd( $^{32}\text{S}$ , X),  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured E(particle), I(particle,  $\theta$ ); C( $^{96}\text{Ru}$ , X), ( $^{98}\text{Ru}$ , X), ( $^{100}\text{Ru}$ , X), ( $^{102}\text{Ru}$ , X), ( $^{104}\text{Ru}$ , X), ( $^{102}\text{Pd}$ , X), ( $^{104}\text{Pd}$ , X), ( $^{106}\text{Pd}$ , X), ( $^{108}\text{Pd}$ , X), ( $^{110}\text{Pd}$ , X), ( $^{106}\text{Cd}$ , X), ( $^{108}\text{Cd}$ , X), ( $^{112}\text{Cd}$ , X), E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2008STZP NUCLEAR REACTIONS  $^{120}\text{Sn}(^{67}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{69}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{71}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{73}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{67}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{69}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{71}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{73}\text{Cu}$ ,  $^{67}\text{Cu}'$ ), E=2.99 MeV / nucleon; measured Cu Coulomb excitation  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671
- 2008WIZQ NUCLEAR REACTIONS  $^{102,104,106,108}\text{Pd}(p, t)$ , E=25 MeV; measured E(particle), I(particle,  $\theta$ ),  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced  $d\sigma(\theta)$ , E, J,  $\pi$ ; calculated  $d\sigma(\theta)$ , E, J,  $\pi$  using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P61,Winkler
- 2009BE44 RADIOACTIVITY  $^{104}\text{Ag}$ ,  $^{110}\text{In}(\text{EC})$  [from  $^{107}\text{Ag}$ ,  $^{113}\text{In}(\gamma, 3n)$ ]; measured  $E\gamma$ ,  $I\gamma$ ; deduced level energies,  $T_{1/2}$ , isomeric ratios. Comparison with calculations and TALYS code. JOUR BRSPE 73 1461

A=104 (*continued*)

- 2009BE50 RADIOACTIVITY  $^{96}\text{Ru}(2\beta^+)$ ,  $(\beta^+\text{EC})$ ,  $(2\text{EC})$ ;  $^{104}\text{Ru}(2\beta^-)$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes, including neutrino-less. HPGe detector at the Gran Sasso National Laboratories. JOUR ZAANE 42 171
- 2010G008 RADIOACTIVITY  $^{104}\text{Ag}(\text{EC})$ ,  $(\beta^+)$ [from  $^{104}\text{Cd}(\text{EC})$ ,  $(\beta^+)$  formed in  $\text{Sn}(p, X)$ ,  $E=1.4\text{GeV}$ ]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $\gamma(\theta)$ . JOUR PRVCA 81 054323
- $^{104}\text{Ag}$  2009BE44 RADIOACTIVITY  $^{104}\text{Ag}$ ,  $^{110}\text{In}(\text{EC})$  [from  $^{107}\text{Ag}$ ,  $^{113}\text{In}(\gamma, 3n)$ ]; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced level energies,  $T_{1/2}$ , isomeric ratios. Comparison with calculations and TALYS code. JOUR BRSPE 73 1461
- 2010BEZW NUCLEAR REACTIONS  $^{107}\text{Ag}(\gamma, 3n)^{104}\text{Ag}$ ,  $^{113}\text{In}(\gamma, 3n)^{110}\text{In}$ ,  $^{109}\text{Ag}(\gamma, 5n)^{104}\text{Ag}$ ,  $^{115}\text{In}(\gamma, 5n)^{110}\text{In}$ ,  $^{115}\text{In}(\gamma, 7n)^{108}\text{In}$ ,  $E=34\text{--}90\text{ MeV}$  bremsstrahlung; measured yields with activation method.  $^{104}\text{Ag}$ ,  $^{110,108}\text{In}$ ; deduced isomeric ratios  $Y_m / Y_g$  vs  $E_\gamma$ . CONF St.-Petersburg,P151,Bezshyyko
- 2010G008 NUCLEAR MOMENTS  $^{104m}\text{Ag}$ ; measured resonance frequencies and magnetic moment by nuclear magnetic resonance on oriented nuclei at ISOLDE / CERN. deduced hyperfine field of Ag impurities in Fe.  $\beta$ -NMR / ON method. Comparison with magnetic moments of  $^{102,104,106,108,110}\text{Ag}$  and shell model calculations. JOUR PRVCA 81 054323
- 2010G008 RADIOACTIVITY  $^{104}\text{Ag}(\text{EC})$ ,  $(\beta^+)$ [from  $^{104}\text{Cd}(\text{EC})$ ,  $(\beta^+)$  formed in  $\text{Sn}(p, X)$ ,  $E=1.4\text{GeV}$ ]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E\beta$ ,  $I\beta$ ,  $\gamma(\theta)$ . JOUR PRVCA 81 054323
- $^{104}\text{Cd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, X)$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ ,  $E=95\text{ MeV}$ ; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, X)$ ,  $(^{98}\text{Ru}, X)$ ,  $(^{100}\text{Ru}, X)$ ,  $(^{102}\text{Ru}, X)$ ,  $(^{104}\text{Ru}, X)$ ,  $(^{102}\text{Pd}, X)$ ,  $(^{104}\text{Pd}, X)$ ,  $(^{106}\text{Pd}, X)$ ,  $(^{108}\text{Pd}, X)$ ,  $(^{110}\text{Pd}, X)$ ,  $(^{106}\text{Cd}, X)$ ,  $(^{108}\text{Cd}, X)$ ,  $(^{112}\text{Cd}, X)$ ,  $E\approx 240\text{ MeV}$ ; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor,  $B(E2)$ ; calculated  $\sigma(\theta)$ , g factor,  $B(E2)$  using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2009EK01 NUCLEAR REACTIONS  $^{109}\text{Ag}(^{100}\text{Cd}, ^{100}\text{Cd}')$ ,  $E=287.0\text{ MeV}$ ;  $^{64}\text{Zn}$ ,  $^{109}\text{Ag}(^{102}\text{Cd}, ^{102}\text{Cd}')$ ,  $E=292.7\text{ MeV}$ ;  $^{64}\text{Zn}$ ,  $^{109}\text{Ag}(^{104}\text{Cd}, ^{104}\text{Cd}')$ ,  $E=298.7\text{ MeV}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma(\text{particle})$ -coin, and  $\gamma$ -ray yields using REX-ISOLDE facility.  $^{64}\text{Zn}$ ,  $^{100,102,104}\text{Cd}$ ,  $^{109}\text{Ag}$ ; deduced levels,  $J$ ,  $\pi$ ,  $E2$  matrix elements, electric quadrupole moments. Comparison with shell model calculations. JOUR PRVCA 80 054302
- 2009EK01 NUCLEAR MOMENTS  $^{100,102,104}\text{Cd}$ ; measured electric quadrupole moments of first  $2+$  states using reorientation method in Coulomb excitation. Comparison with shell model calculations. JOUR PRVCA 80 054302

**A=104 (continued)**

- 2010ID01 NUCLEAR REACTIONS  $^{58}\text{Ni}(^{52}\text{Cr}, 3\text{p})$ ,  $E=187$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (recoil) $\gamma$ -coin,  $\gamma(\theta)$  using the JUROGAM array.  $^{107}\text{In}$ ; deduced levels,  $J$ ,  $\pi$ , multipolarity, mixing ratios, M1 band and a smooth-terminating band, dynamical moments of inertia, and configurations. Calculated potential energy surfaces. Comparisons with total Routhian surface and cranked Nilsson-Strutinsky calculations, and with systematics of rotational band structures in  $^{105}\text{Ag}$ ,  $^{106}\text{Cd}$ ,  $^{108}\text{Sn}$ ,  $^{109}\text{Sb}$ ,  $^{110}\text{Te}$  and  $^{111}\text{I}$ .  $^{104}\text{Cd}$ ,  $^{106}\text{In}$ ,  $^{107}\text{Sn}$ ; measured  $E\gamma$ . JOUR PRVCA 81 034303

**A=105**

- $^{105}\text{Mo}$  2008SIZS RADIOACTIVITY  $^{136}\text{Sb}(\beta^-)$ [from  $^{241}\text{Pu}(n, f)$ ,  $E=\text{thermal}$ ]; measured delayed  $E\gamma$ ,  $I\gamma$ ,  $E(\text{ce})$ , x-rays; deduced  $E$ ,  $J$ ,  $\pi$ ,  $B(E2)$ ;  $^{105,107}\text{Mo}$ ,  $^{107}\text{Tc}(\beta^-)$ [from  $^{248}\text{Cm}(\text{SF})$ ]; measured  $E\gamma$ ,  $I\gamma$ ,  $E(\text{ce})$ ; deduced  $E$ ,  $J$ ,  $\pi$ , isomer decay, bands; calculated  $E$ ,  $J$ ,  $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from  $\text{U}(p, X)$ ,  $E=30, 50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- 2010WA26 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{103}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{107}\text{Tc}$ ; deduced levels,  $J$ ,  $\pi$ , high-spin states,  $2\gamma$ -vibrational bands. JOUR NUPAB 834 94c
- $^{105}\text{Tc}$  2008SIZS RADIOACTIVITY  $^{136}\text{Sb}(\beta^-)$ [from  $^{241}\text{Pu}(n, f)$ ,  $E=\text{thermal}$ ]; measured delayed  $E\gamma$ ,  $I\gamma$ ,  $E(\text{ce})$ , x-rays; deduced  $E$ ,  $J$ ,  $\pi$ ,  $B(E2)$ ;  $^{105,107}\text{Mo}$ ,  $^{107}\text{Tc}(\beta^-)$ [from  $^{248}\text{Cm}(\text{SF})$ ]; measured  $E\gamma$ ,  $I\gamma$ ,  $E(\text{ce})$ ; deduced  $E$ ,  $J$ ,  $\pi$ , isomer decay, bands; calculated  $E$ ,  $J$ ,  $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71
- 2009ALZW RADIOACTIVITY  $^{104,105}\text{Tc}$ [from  $\text{U}(p, \text{SF})](\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$  using TAGS (Total Absorption Gamma Spectrometer); deduced spectrum and strength. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P207,Algora
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from  $\text{U}(p, X)$ ,  $E=30, 50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- 2010LU02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere.  $^{141,144}\text{Cs}$ ; deduced levels,  $J$ ,  $p$ , conversion coefficients, multipolarities, bands, parity doublets, simplex structure,  $B(E1) / B(E2)$ , dipole moment. Comparison with level structure of  $^{143}\text{Cs}$  and with systematics of adjacent  $N=85-92$  nuclei.  $^{105,106,107,108}\text{Tc}$ ; measured  $E\gamma$ . JOUR NUPAB 838 1

A=105 (*continued*)

- <sup>105</sup>Ru    2009ALZW    RADIOACTIVITY <sup>104,105</sup>Tc[from U(p, SF)]( $\beta^-$ ); measured  $E_\gamma$ ,  $I_\gamma$  using TAGS (Total Absorption Gamma Spectrometer); deduced spectrum and strength. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P207,Algora
- 2010AL22    RADIOACTIVITY <sup>101</sup>Nb, <sup>105</sup>Mo, <sup>102,104,105,106,107</sup>Tc( $\beta^-$ ) [from U(p, X), E=30, 50 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of <sup>239</sup>Pu. JOUR PRLTA 105 202501
- 2010DE01    NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010KR05    RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $I_\beta$ ,  $I_\varepsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- 2010KR05    NUCLEAR REACTIONS <sup>96,102,104</sup>Ru(n,  $\gamma$ ), E=thermal and epithermal; measured  $E_\gamma$ ,  $I_\gamma$ , cross sections and resonance integrals by activation method. Comparison with previous studies. JOUR PRVCA 81 044310
- <sup>105</sup>Rh    2010BEZU    NUCLEAR REACTIONS <sup>102,106,108</sup>Pd( $\gamma$ , p), E=30 MeV bremsstrahlung; <sup>102,110</sup>Pd( $\gamma$ , n), E=30 MeV bremsstrahlung; measured yield with activation method; <sup>101,109</sup>Pd, <sup>101,105,107</sup>Rh; deduced yields, isomeric ratios  $Y_m / Y_g$ . CONF St.-Petersburg,P155,Belyshev
- 2010DE01    NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010KH02    NUCLEAR REACTIONS Pd(p, X)<sup>105</sup>Ag / <sup>106</sup>Ag / <sup>100</sup>Pd / <sup>101</sup>Pd / <sup>100</sup>Rh / <sup>101</sup>Rh / <sup>105</sup>Rh, E<40 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303
- 2010KR05    RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $I_\beta$ ,  $I_\varepsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310
- <sup>105</sup>Pd    2010KR05    RADIOACTIVITY <sup>96</sup>Tc( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n, p)]; <sup>97</sup>Ru( $\beta^+$ ), (EC)[from <sup>96</sup>Ru(n,  $\gamma$ ), E<1 eV]; <sup>103,105</sup>Ru( $\beta^-$ )[from <sup>102,104</sup>Ru(n,  $\gamma$ ), E<1 keV]; <sup>105</sup>Rh( $\beta^-$ )[from <sup>105</sup>Ru( $\beta^-$ )]; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $I_\beta$ ,  $I_\varepsilon$ , logft; <sup>96</sup>Mo, <sup>97</sup>Tc, <sup>103,105</sup>Rh, <sup>105</sup>Pd; deduced levels. Comparison with previous studies and evaluated data. JOUR PRVCA 81 044310

KEYNUMBERS AND KEYWORDS

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**A=105 (continued)**

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| $^{105}\text{Ag}$ | 2010KH02 | NUCLEAR REACTIONS Pd(p, X) $^{105}\text{Ag}$ / $^{106}\text{Ag}$ / $^{100}\text{Pd}$ / $^{101}\text{Pd}$ / $^{100}\text{Rh}$ / $^{101}\text{Rh}$ / $^{105}\text{Rh}$ , E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303  |
| $^{105}\text{Te}$ | 2008DAZS | RADIOACTIVITY $^{109}\text{Xe}(\alpha)$ [from $^{54}\text{Fe}+^{58}\text{Ni}\rightarrow^{112}\text{Xe}\rightarrow^{109}\text{Xe}+3n$ ]; $^{105}\text{Te}(\alpha)$ ; measured E $\gamma$ , I $\gamma$ , I $\alpha$ ; deduced $^{101}\text{Sn}$ E, J, $\pi$ ; calculated E(d $_{5/2}$ ), E(g $_{7/2}$ ) using shell model. Decay chain compared to that of $^{111}\text{Xe}\rightarrow^{107}\text{Te}\rightarrow^{103}\text{Sn}$ from other papers. Results on CD only. CONF E.Lansing (NS2008),P3,Darby |
|                   | 2010DA17 | RADIOACTIVITY $^{109}\text{Xe}$ , $^{105}\text{Te}(\alpha)$ ; measured I $\alpha$ , E $\alpha$ , I $\gamma$ , I $\gamma$ ; deduced J, $\pi$ for ground and first excited states in $^{101}\text{Sn}$ , ground state spin inversion, strong pairing interaction. Comparison with shell model calculations. JOUR PRLTA 105 162502  |

**A=106**

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|-------------------|----------|--|
| $^{106}\text{Sr}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-B}\rho$ method. JOUR JUPSA 79 073201 |
| $^{106}\text{Mo}$ | 2008G0Z0 | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |
|                   | 2008HAZH | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured E $\gamma$ , I $\gamma$ , $\gamma$ - $\gamma$ - $\gamma$ -coin.; $^{108,110,112}\text{Ru}$ , $^{106}\text{Mo}$ ; deduced band structures, possible chiral doublets. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P387,Hamilton   |
|                   | 2009ZH50 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; $^{106}\text{Mo}$ , $^{110,112}\text{Ru}$ ; measured E $\gamma$ , I $\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, chiral doublet vibrational bands, J, $\pi$ , energies, B(E2) / B(M1), branching ratios. 3D-Tilted Axis Cranking (TAC) calculations. JOUR CPCHC 33 s01 145  |
| $^{106}\text{Tc}$ | 2008G0Z0 | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |
|                   | 2009GU32 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; $^{106}\text{Tc}$ ; measured E $\gamma$ , I $\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, J, $\pi$ , collective bands. Total Routhian surface (TRS) calculations. JOUR CPCHC 33 s01 182  |
|                   | 2010AL22 | RADIOACTIVITY $^{101}\text{Nb}$ , $^{105}\text{Mo}$ , $^{102,104,105,106,107}\text{Tc}(\beta^-)$ [from U(p, X), E=30, 50 MeV]; measured E $\gamma$ , I $\gamma$ , mass; deduced $\beta$ -feeding probabilities, discrepancies for decay heat of $^{239}\text{Pu}$ . JOUR PRLTA 105 202501  |

A=106 (*continued*)

- 2010LI14 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ .  $^{142}\text{Cs}$ ; deduced levels, J,  $\pi$ , multipolarity, bands, B(E1), B(E2), electric dipole moments.  $^{106,107}\text{Tc}$ ; measured  $E\gamma$ . Systematics of electric dipole moments for Xe (N=85-88), Cs (N=86-88), Ba (N=85-90), La (N=88, 90), Ce (N=86, 88, 90), Nd (N=86, 88, 90), Sm (N=86, 88). JOUR PRVCA 81 057304
- 2010LU02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere.  $^{141,144}\text{Cs}$ ; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure, B(E1) / B(E2), dipole moment. Comparison with level structure of  $^{143}\text{Cs}$  and with systematics of adjacent N=85-92 nuclei.  $^{105,106,107,108}\text{Tc}$ ; measured  $E\gamma$ . JOUR NUPAB 838 1
- $^{106}\text{Ru}$  2008G0Z0 RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured  $E\gamma$ ,  $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- 2009SH42 NUCLEAR REACTIONS  $^{12}\text{C}(^{238}\text{U}, \text{X})$ , E=1.45 GeV; measured  $E\gamma$ ,  $I\gamma$  using EXOGAM array, fission fragments using VAMOS detector.  $^{134}\text{Xe}$ ; deduced levels, J,  $\pi$ .  $^{100}\text{Zr}$ ,  $^{106,107,108,109}\text{Ru}$ ,  $^{133}\text{Xe}$ ,  $^{138}\text{Xe}$ ; measured  $E\gamma$ . Comparison with shell model calculations for  $Z>49$ ,  $N<83$  nuclei. JOUR PRVCA 80 051305
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X), E=30, 50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- $^{106}\text{Rh}$  2008G0Z0 RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured  $E\gamma$ ,  $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- $^{106}\text{Pd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured E(particle), I(particle,  $\theta$ ); C( $^{96}\text{Ru}, \text{X}$ ), ( $^{98}\text{Ru}, \text{X}$ ), ( $^{100}\text{Ru}, \text{X}$ ), ( $^{102}\text{Ru}, \text{X}$ ), ( $^{104}\text{Ru}, \text{X}$ ), ( $^{102}\text{Pd}, \text{X}$ ), ( $^{104}\text{Pd}, \text{X}$ ), ( $^{106}\text{Pd}, \text{X}$ ), ( $^{108}\text{Pd}, \text{X}$ ), ( $^{110}\text{Pd}, \text{X}$ ), ( $^{106}\text{Cd}, \text{X}$ ), ( $^{108}\text{Cd}, \text{X}$ ), ( $^{112}\text{Cd}, \text{X}$ ), E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2008STZP NUCLEAR REACTIONS  $^{120}\text{Sn}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; measured Cu Coulomb excitation  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671
- 2008WIZQ NUCLEAR REACTIONS  $^{102,104,106,108}\text{Pd}(p, t)$ , E=25 MeV; measured E(particle), I(particle,  $\theta$ ),  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced  $d\sigma(\theta)$ , E, J,  $\pi$ ; calculated  $d\sigma(\theta)$ , E, J,  $\pi$  using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P61,Winkler

A=106 (*continued*)

- 2010RUZZ RADIOACTIVITY  $^{106}\text{Cd}(2\text{EC})$ ; measured  $T_{1/2}$   $2\nu$ - and  $0\nu$ - $\beta\beta$ -decay lower limits. TGV-experiment, 32 HPGe-telescope. CONF St.-Petersburg,P101,Rukhadze
- $^{106}\text{Ag}$  2010HE05 NUCLEAR REACTIONS  $^{100}\text{Mo}(^{11}\text{B}, 5n)^{106}\text{Ag}$ , E=60 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced levels, J,  $\pi$ , bands, configuration, shears band. Systematics of shears bands in  $^{102}\text{Rh}$ ,  $^{104,106,108}\text{Ag}$ ,  $^{108,110,112}\text{In}$ . Comparison with TAC calculations for the dipole band. JOUR PRVCA 81 057301
- 2010KH02 NUCLEAR REACTIONS  $\text{Pd}(p, X)^{105}\text{Ag}$  /  $^{106}\text{Ag}$  /  $^{100}\text{Pd}$  /  $^{101}\text{Pd}$  /  $^{100}\text{Rh}$  /  $^{101}\text{Rh}$  /  $^{105}\text{Rh}$ , E<40 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, TALYS and ALICE-IPPE codes. JOUR NIMBE 268 2303
- 2010PA19 NUCLEAR REACTIONS  $^{78}\text{Se}(^{32}\text{S}, 3np)$ , E=125 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ .  $^{106}\text{In}$ ; deduced levels, J,  $\pi$ , mixing ratio, bands, DCO matrix.  $^{106}\text{In}$ ,  $^{106,108}\text{Ag}$  calculated levels, J,  $\pi$ , deformation, B(M1), B(E2) using projected deformed HF. JOUR NUPAB 834 81c
- $^{106}\text{Cd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, X)$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; C( $^{96}\text{Ru}, X$ ), ( $^{98}\text{Ru}, X$ ), ( $^{100}\text{Ru}, X$ ), ( $^{102}\text{Ru}, X$ ), ( $^{104}\text{Ru}, X$ ), ( $^{102}\text{Pd}, X$ ), ( $^{104}\text{Pd}, X$ ), ( $^{106}\text{Pd}, X$ ), ( $^{108}\text{Pd}, X$ ), ( $^{110}\text{Pd}, X$ ), ( $^{106}\text{Cd}, X$ ), ( $^{108}\text{Cd}, X$ ), ( $^{112}\text{Cd}, X$ ), E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2010RU04 RADIOACTIVITY  $^{106}\text{Cd}(2\beta)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . JOUR BRSPE 74 821
- 2010RUZZ RADIOACTIVITY  $^{106}\text{Cd}(2\text{EC})$ ; measured  $T_{1/2}$   $2\nu$ - and  $0\nu$ - $\beta\beta$ -decay lower limits. TGV-experiment, 32 HPGe-telescope. CONF St.-Petersburg,P101,Rukhadze
- 2010ZU02 RADIOACTIVITY  $^{106,114,116}\text{Cd}$ ,  $^{120,128,130}\text{Te}$ ,  $^{64}\text{Zn}(2\beta)$ ; measured  $Ee$ ,  $Ie$ ; deduced  $T_{1/2}$ . JOUR PPNPD 64 267
- $^{106}\text{In}$  2010EK01 NUCLEAR REACTIONS  $^{58}\text{Ni}(^{106}\text{In}, ^{106}\text{In}')$ , ( $^{108}\text{In}, ^{108}\text{In}'$ ), E=2.8 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin following Coulomb excitation at the REX-ISOLDE facility.  $^{106,108}\text{In}$ ; deduced levels, J,  $\pi$ , B(E2); calculated low-lying level properties, E2, M1 matrix elements using shell model plus coupled channels. JOUR ZAANE 44 355
- 2010ID01 NUCLEAR REACTIONS  $^{58}\text{Ni}(^{52}\text{Cr}, 3p)$ , E=187 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (recoil) $\gamma$ -coin,  $\gamma(\theta)$  using the JUROGAM array.  $^{107}\text{In}$ ; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, M1 band and a smooth-terminating band, dynamical moments of inertia, and configurations. Calculated potential energy surfaces. Comparisons with total Routhian surface and cranked Nilsson-Strutinsky calculations, and with systematics of rotational band structures in  $^{105}\text{Ag}$ ,  $^{106}\text{Cd}$ ,  $^{108}\text{Sn}$ ,  $^{109}\text{Sb}$ ,  $^{110}\text{Te}$  and  $^{111}\text{I}$ .  $^{104}\text{Cd}$ ,  $^{106}\text{In}$ ,  $^{107}\text{Sn}$ ; measured  $E\gamma$ . JOUR PRVCA 81 034303
- 2010PA19 NUCLEAR REACTIONS  $^{78}\text{Se}(^{32}\text{S}, 3np)$ , E=125 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ .  $^{106}\text{In}$ ; deduced levels, J,  $\pi$ , mixing ratio, bands, DCO matrix.  $^{106}\text{In}$ ,  $^{106,108}\text{Ag}$  calculated levels, J,  $\pi$ , deformation, B(M1), B(E2) using projected deformed HF. JOUR NUPAB 834 81c

## A=107

- $^{107}\text{Sr}$  20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{107}\text{Mo}$  2008SIZS RADIOACTIVITY  $^{136}\text{Sb}(\beta^-)$ [from  $^{241}\text{Pu}(n, f)$ , E=thermal]; measured delayed  $\text{E}\gamma$ ,  $\text{I}\gamma$ , E(ce), x-rays; deduced E, J,  $\pi$ , B(E2);  $^{105,107}\text{Mo}$ ,  $^{107}\text{Tc}(\beta^-)$ [from  $^{248}\text{Cm}(\text{SF})$ ]; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , E(ce); deduced E, J,  $\pi$ , isomer decay, bands; calculated E, J,  $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71
- $^{107}\text{Tc}$  2008SIZS RADIOACTIVITY  $^{136}\text{Sb}(\beta^-)$ [from  $^{241}\text{Pu}(n, f)$ , E=thermal]; measured delayed  $\text{E}\gamma$ ,  $\text{I}\gamma$ , E(ce), x-rays; deduced E, J,  $\pi$ , B(E2);  $^{105,107}\text{Mo}$ ,  $^{107}\text{Tc}(\beta^-)$ [from  $^{248}\text{Cm}(\text{SF})$ ]; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , E(ce); deduced E, J,  $\pi$ , isomer decay, bands; calculated E, J,  $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71
- 2010AL22 RADIOACTIVITY  $^{101}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{102,104,105,106,107}\text{Tc}(\beta^-)$  [from U(p, X), E=30, 50 MeV]; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of  $^{239}\text{Pu}$ . JOUR PRLTA 105 202501
- 2010LI10 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{140}\text{Cs}$ ; deduced levels, J,  $\pi$ , configurations.  $^{107,108,109,110}\text{Tc}$ ; measured  $\text{E}\gamma$ . Comparison with level structure of  $^{138}\text{I}$  and with systematics of N=85 isotones of  $^{137}\text{Te}$ ,  $^{138}\text{I}$ ,  $^{139}\text{Xe}$ ,  $^{140}\text{Cs}$ ,  $^{141}\text{Ba}$ ,  $^{145}\text{Nd}$ ,  $^{146}\text{Pm}$ ,  $^{147}\text{Sm}$ ,  $^{148}\text{Eu}$  and  $^{149}\text{Gd}$ . JOUR PRVCA 81 037302
- 2010LI14 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ .  $^{142}\text{Cs}$ ; deduced levels, J,  $\pi$ , multipolarity, bands, B(E1), B(E2), electric dipole moments.  $^{106,107}\text{Tc}$ ; measured  $\text{E}\gamma$ . Systematics of electric dipole moments for Xe (N=85-88), Cs (N=86-88), Ba (N=85-90), La (N=88, 90), Ce (N=86, 88, 90), Nd (N=86, 88, 90), Sm (N=86, 88). JOUR PRVCA 81 057304
- 2010LU02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere.  $^{141,144}\text{Cs}$ ; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure, B(E1) / B(E2), dipole moment. Comparison with level structure of  $^{143}\text{Cs}$  and with systematics of adjacent N=85-92 nuclei.  $^{105,106,107,108}\text{Tc}$ ; measured  $\text{E}\gamma$ . JOUR NUPAB 838 1
- 2010WA26 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -coin.  $^{103}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{107}\text{Tc}$ ; deduced levels, J,  $\pi$ , high-spin states,  $2\gamma$ -vibrational bands. JOUR NUPAB 834 94c



A=107 (*continued*)

- <sup>107</sup>Ru    2008SIZS    RADIOACTIVITY <sup>136</sup>Sb( $\beta^-$ )[from <sup>241</sup>Pu(n, f), E=thermal]; measured delayed E $\gamma$ , I $\gamma$ , E(ce), x-rays; deduced E, J,  $\pi$ , B(E2); <sup>105,107</sup>Mo, <sup>107</sup>Tc( $\beta^-$ )[from <sup>248</sup>Cm(SF)]; measured E $\gamma$ , I $\gamma$ , E(ce); deduced E, J,  $\pi$ , isomer decay, bands; calculated E, J,  $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71
- 2009SH42    NUCLEAR REACTIONS <sup>12</sup>C(<sup>238</sup>U, X), E=1.45 GeV; measured E $\gamma$ , I $\gamma$  using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup>Xe; deduced levels, J,  $\pi$ . <sup>100</sup>Zr, <sup>106,107,108,109</sup>Ru, <sup>133</sup>Xe, <sup>138</sup>Xe; measured E $\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305
- 2010AL22    RADIOACTIVITY <sup>101</sup>Nb, <sup>105</sup>Mo, <sup>102,104,105,106,107</sup>Tc( $\beta^-$ ) [from U(p, X), E=30, 50 MeV]; measured E $\gamma$ , I $\gamma$ , mass; deduced  $\beta$ -feeding probabilities, discrepancies for decay heat of <sup>239</sup>Pu. JOUR PRLTA 105 202501
- <sup>107</sup>Rh    2010BEZU    NUCLEAR REACTIONS <sup>102,106,108</sup>Pd( $\gamma$ , p), E=30 MeV bremsstrahlung; <sup>102,110</sup>Pd( $\gamma$ , n), E=30 MeV bremsstrahlung; measured yield with activation method; <sup>101,109</sup>Pd, <sup>101,105,107</sup>Rh; deduced yields, isomeric ratios  $Y_m / Y_g$ . CONF St.-Petersburg,P155,Belyshev
- <sup>107</sup>Ag    2009PEZY    NUCLEAR REACTIONS <sup>96</sup>Mo(<sup>88</sup>Sr, 2n), E=351 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced decay curves of yrast transitions, quadrupole moments; <sup>107</sup>Ag(<sup>184</sup>Hg, <sup>184</sup>Hg'), E=2.85 MeV / nucleon; <sup>120</sup>Sn(<sup>184</sup>Hg, <sup>184</sup>Hg'), E=2.85 MeV / nucleon; <sup>107</sup>Ag(<sup>186</sup>Hg, <sup>186</sup>Hg'), E=2.85 MeV / nucleon; <sup>120</sup>Sn(<sup>186</sup>Hg, <sup>186</sup>Hg'), E=2.85 MeV / nucleon; <sup>107</sup>Ag(<sup>188</sup>Hg, <sup>188</sup>Hg'), E=2.85 MeV / nucleon; <sup>120</sup>Sn(<sup>188</sup>Hg, <sup>188</sup>Hg'), E=2.85 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin. Plunger device with JUROGAM + RITU + GREAT, matrix E2 elements to be extracted. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P414,Petts
- <sup>107</sup>In    2010ID01    NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>52</sup>Cr, 3p), E=187 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (recoil) $\gamma$ -coin,  $\gamma(\theta)$  using the JUROGAM array. <sup>107</sup>In; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, M1 band and a smooth-terminating band, dynamical moments of inertia, and configurations. Calculated potential energy surfaces. Comparisons with total Routhian surface and cranked Nilsson-Strutinsky calculations, and with systematics of rotational band structures in <sup>105</sup>Ag, <sup>106</sup>Cd, <sup>108</sup>Sn, <sup>109</sup>Sb, <sup>110</sup>Te and <sup>111</sup>I. <sup>104</sup>Cd, <sup>106</sup>In, <sup>107</sup>Sn; measured E $\gamma$ . JOUR PRVCA 81 034303
- 2010NE05    NUCLEAR REACTIONS <sup>94</sup>Mo(<sup>16</sup>O, 2np)<sup>107</sup>In, E=70 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, DCO, linear polarization, half-lives by DSAM using INGA array. <sup>107</sup>In; deduced levels, J,  $\pi$ , multipolarity, bands, B(M1), B(E2), B(M1) / B(E2), Q(t),  $\beta_2$ , configurations, shears band. Comparison with systematics of bands in <sup>105,108</sup>In and with TAC calculations. JOUR PRVCA 81 054322
- 2010SI14    NUCLEAR REACTIONS <sup>78</sup>Se(<sup>32</sup>S, 2np), E=125 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, DCO ratios, polarization. <sup>107</sup>In; deduced levels, J,  $\pi$ , bands, configurations, B(M1), B(E2). Comparison with projected Hartree-Fock calculations. JOUR ZAANE 43 45

KEYNUMBERS AND KEYWORDS

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**A=107 (continued)**

<sup>107</sup>Sn      2010ID01      NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>52</sup>Cr, 3p), E=187 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (recoil) $\gamma$ -coin,  $\gamma(\theta)$  using the JUROGAM array. <sup>107</sup>In; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, M1 band and a smooth-terminating band, dynamical moments of inertia, and configurations. Calculated potential energy surfaces. Comparisons with total Routhian surface and cranked Nilsson-Strutinsky calculations, and with systematics of rotational band structures in <sup>105</sup>Ag, <sup>106</sup>Cd, <sup>108</sup>Sn, <sup>109</sup>Sb, <sup>110</sup>Te and <sup>111</sup>I. <sup>104</sup>Cd, <sup>106</sup>In, <sup>107</sup>Sn; measured E $\gamma$ . JOUR PRVCA 81 034303

**A=108**

<sup>108</sup>Y      20100H02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta$ E-TOF-B $\rho$  method. JOUR JUPSA 79 073201

<sup>108</sup>Mo      2008G0Z0      RADIOACTIVITY <sup>104,106,108</sup>Mo, <sup>106,108,110,112</sup>Ru, <sup>112,114,116</sup>Pd( $\beta^-$ ) [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin

<sup>108</sup>Tc      2008G0Z0      RADIOACTIVITY <sup>104,106,108</sup>Mo, <sup>106,108,110,112</sup>Ru, <sup>112,114,116</sup>Pd( $\beta^-$ ) [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin

                 2010LI10      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>140</sup>Cs; deduced levels, J,  $\pi$ , configurations. <sup>107,108,109,110</sup>Tc; measured E $\gamma$ . Comparison with level structure of <sup>138</sup>I and with systematics of N=85 isotones of <sup>137</sup>Te, <sup>138</sup>I, <sup>139</sup>Xe, <sup>140</sup>Cs, <sup>141</sup>Ba, <sup>145</sup>Nd, <sup>146</sup>Pm, <sup>147</sup>Sm, <sup>148</sup>Eu and <sup>149</sup>Gd. JOUR PRVCA 81 037302

                 2010LU02      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere. <sup>141,144</sup>Cs; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure, B(E1) / B(E2), dipole moment. Comparison with level structure of <sup>143</sup>Cs and with systematics of adjacent N=85-92 nuclei. <sup>105,106,107,108</sup>Tc; measured E $\gamma$ . JOUR NUPAB 838 1

<sup>108</sup>Ru      2008G0Z0      RADIOACTIVITY <sup>104,106,108</sup>Mo, <sup>106,108,110,112</sup>Ru, <sup>112,114,116</sup>Pd( $\beta^-$ ) [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin

                 2008HAZH      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ - $\gamma$ -coin.; <sup>108,110,112</sup>Ru, <sup>106</sup>Mo; deduced band structures, possible chiral doublets. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P387,Hamilton

                 2008RAZY      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; <sup>148</sup>Ce, <sup>108</sup>Ru; deduced angular correlation of  $\gamma$  cascades, mixing ratio. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P57,Ramayya

KEYNUMBERS AND KEYWORDS

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A=108 (*continued*)

- 2009SH42 NUCLEAR REACTIONS  $^{12}\text{C}(^{238}\text{U}, \text{X})$ , E=1.45 GeV; measured  $E\gamma$ ,  $I\gamma$  using EXOGAM array, fission fragments using VAMOS detector.  $^{134}\text{Xe}$ ; deduced levels, J,  $\pi$ .  $^{100}\text{Zr}$ ,  $^{106,107,108,109}\text{Ru}$ ,  $^{133}\text{Xe}$ ,  $^{138}\text{Xe}$ ; measured  $E\gamma$ . Comparison with shell model calculations for  $Z>49$ ,  $N<83$  nuclei. JOUR PRVCA 80 051305
- 2010LUZZ RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{108,110,112}\text{Ru}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced level schemes, mixing ratios, bands, J,  $\pi$ , angular correlations, level energies, corrected values for  $\gamma$ -cascade in  $^{110}\text{Ru}$ . PC J H. Hamilton,2/11/2010
- $^{108}\text{Rh}$  2008GOZO RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured  $E\gamma$ ,  $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- $^{108}\text{Pd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, \text{X})$ ,  $(^{98}\text{Ru}, \text{X})$ ,  $(^{100}\text{Ru}, \text{X})$ ,  $(^{102}\text{Ru}, \text{X})$ ,  $(^{104}\text{Ru}, \text{X})$ ,  $(^{102}\text{Pd}, \text{X})$ ,  $(^{104}\text{Pd}, \text{X})$ ,  $(^{106}\text{Pd}, \text{X})$ ,  $(^{108}\text{Pd}, \text{X})$ ,  $(^{110}\text{Pd}, \text{X})$ ,  $(^{106}\text{Cd}, \text{X})$ ,  $(^{108}\text{Cd}, \text{X})$ ,  $(^{112}\text{Cd}, \text{X})$ , E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2008STZP NUCLEAR REACTIONS  $^{120}\text{Sn}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{120}\text{Sn}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon;  $^{104}\text{Pd}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; measured Cu Coulomb excitation  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671
- $^{108}\text{Ag}$  2010PA19 NUCLEAR REACTIONS  $^{78}\text{Se}(^{32}\text{S}, 3\text{np})$ , E=125 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ .  $^{106}\text{In}$ ; deduced levels, J,  $\pi$ , mixing ratio, bands, DCO matrix.  $^{106}\text{In}$ ,  $^{106,108}\text{Ag}$  calculated levels, J,  $\pi$ , deformation, B(M1), B(E2) using projected deformed HF. JOUR NUPAB 834 81c
- $^{108}\text{Cd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, \text{X})$ ,  $(^{98}\text{Ru}, \text{X})$ ,  $(^{100}\text{Ru}, \text{X})$ ,  $(^{102}\text{Ru}, \text{X})$ ,  $(^{104}\text{Ru}, \text{X})$ ,  $(^{102}\text{Pd}, \text{X})$ ,  $(^{104}\text{Pd}, \text{X})$ ,  $(^{106}\text{Pd}, \text{X})$ ,  $(^{108}\text{Pd}, \text{X})$ ,  $(^{110}\text{Pd}, \text{X})$ ,  $(^{106}\text{Cd}, \text{X})$ ,  $(^{108}\text{Cd}, \text{X})$ ,  $(^{112}\text{Cd}, \text{X})$ , E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2010R015 NUCLEAR REACTIONS  $^{100}\text{Mo}(^{13}\text{C}, 5\text{n})^{108}\text{Cd}$ , E=65 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives by DSAM.  $^{108}\text{Cd}$ ; deduced levels, J,  $\pi$ , multipolarity, shears band, band crossing, B(M1), B(E2), shears angle. Comparison with systematics of B(M1) values in  $^{110}\text{Cd}$ . JOUR PRVCA 81 054311

A=108 (*continued*)

- <sup>108</sup>In 2010BEZW NUCLEAR REACTIONS <sup>107</sup>Ag( $\gamma$ , 3n)<sup>104</sup>Ag, <sup>113</sup>In( $\gamma$ , 3n)<sup>110</sup>In, <sup>109</sup>Ag( $\gamma$ , 5n)<sup>104</sup>Ag, <sup>115</sup>In( $\gamma$ , 5n)<sup>110</sup>In, <sup>115</sup>In( $\gamma$ , 7n)<sup>108</sup>In, E=34-90 MeV bremsstrahlung; measured yields with activation method. <sup>104</sup>Ag, <sup>110,108</sup>In; deduced isomeric ratios  $Y_m / Y_g$  vs  $E\gamma$ . CONF St.-Petersburg,P151,Bezshyyko
- 2010EK01 NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>106</sup>In, <sup>106</sup>In'), (<sup>108</sup>In, <sup>108</sup>In'), E=2.8 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin following Coulomb excitation at the REX-ISOLDE facility. <sup>106,108</sup>In; deduced levels, J,  $\pi$ , B(E2); calculated low-lying level properties, E2, M1 matrix elements using shell model plus coupled channels. JOUR ZAANE 44 355
- 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376

## A=109

- <sup>109</sup>Y 20100H02 NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>109</sup>Tc 2010GU07 RADIOACTIVITY <sup>252</sup>Cf(SF); measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; <sup>109</sup>Tc; deduced level scheme, high spin states, yrast bands interpretation. Cranked shell model calculations. JOUR CPLEE 27 062501
- 2010LI10 RADIOACTIVITY <sup>252</sup>Cf(SF); measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>140</sup>Cs; deduced levels, J,  $\pi$ , configurations. <sup>107,108,109,110</sup>Tc; measured  $E\gamma$ . Comparison with level structure of <sup>138</sup>I and with systematics of N=85 isotones of <sup>137</sup>Te, <sup>138</sup>I, <sup>139</sup>Xe, <sup>140</sup>Cs, <sup>141</sup>Ba, <sup>145</sup>Nd, <sup>146</sup>Pm, <sup>147</sup>Sm, <sup>148</sup>Eu and <sup>149</sup>Gd. JOUR PRVCA 81 037302
- <sup>109</sup>Ru 2009DI12 RADIOACTIVITY <sup>252</sup>Cf(SF); <sup>109</sup>Ru; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, ground state and negative and positive parity bands. JOUR CPCHC 33 s01 154
- 2009SH42 NUCLEAR REACTIONS <sup>12</sup>C(<sup>238</sup>U, X), E=1.45 GeV; measured  $E\gamma$ ,  $I\gamma$  using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup>Xe; deduced levels, J,  $\pi$ . <sup>100</sup>Zr, <sup>106,107,108,109</sup>Ru, <sup>133</sup>Xe, <sup>138</sup>Xe; measured  $E\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305

## A=109 (continued)

- <sup>109</sup>Pd 2010BEZU NUCLEAR REACTIONS <sup>102,106,108</sup>Pd( $\gamma$ , p), E=30 MeV bremsstrahlung; <sup>102,110</sup>Pd( $\gamma$ , n), E=30 MeV bremsstrahlung; measured yield with activation method; <sup>101,109</sup>Pd, <sup>101,105,107</sup>Rh; deduced yields, isomeric ratios  $Y_m / Y_g$ . CONF St.-Petersburg,P155,Belyshev
- <sup>109</sup>Ag 2009EK01 NUCLEAR REACTIONS <sup>109</sup>Ag(<sup>100</sup>Cd, <sup>100</sup>Cd'), E=287.0 MeV; <sup>64</sup>Zn, <sup>109</sup>Ag(<sup>102</sup>Cd, <sup>102</sup>Cd'), E=292.7 MeV; <sup>64</sup>Zn, <sup>109</sup>Ag(<sup>104</sup>Cd, <sup>104</sup>Cd'), E=298.7 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ (particle)-coin, and  $\gamma$ -ray yields using REX-ISOLDE facility. <sup>64</sup>Zn, <sup>100,102,104</sup>Cd, <sup>109</sup>Ag; deduced levels, J,  $\pi$ , E2 matrix elements, electric quadrupole moments. Comparison with shell model calculations. JOUR PRVCA 80 054302
- 2009MUZW NUCLEAR REACTIONS <sup>12</sup>C(<sup>88</sup>Kr, <sup>88</sup>Kr'), E not given; <sup>109</sup>Ag(<sup>92</sup>Kr, <sup>92</sup>Kr'), E not given; measured Coulomb excitation  $E_\gamma$ ,  $I_\gamma$ ; deduced <sup>88,92</sup>Kr B(E2). <sup>92</sup>Kr B(E2) in contrast to what was supposed. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P587,Mucher
- 2009VA16 NUCLEAR REACTIONS <sup>109</sup>Ag(<sup>61</sup>Mn, <sup>61</sup>Mn'), (<sup>61</sup>Fe, <sup>61</sup>Fe'), E=2.87 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$  following Coulomb excitation at the REX-ISOLDE facility and in-trap decay. <sup>61</sup>Mn, <sup>61</sup>Fe; deduced levels  $T_{1/2}$ , B(E2), B(M1). Comparison with large-scale shell model calculations. JOUR ZAANE 42 401
- <sup>109</sup>In 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376
- <sup>109</sup>Xe 2008DAZS RADIOACTIVITY <sup>109</sup>Xe( $\alpha$ )[from <sup>54</sup>Fe+<sup>58</sup>Ni-><sup>112</sup>Xe-><sup>109</sup>Xe+3n]; <sup>105</sup>Te( $\alpha$ ); measured  $E_\gamma$ ,  $I_\gamma$ ,  $I_\alpha$ ; deduced <sup>101</sup>Sn E, J,  $\pi$ ; calculated E(d<sub>5/2</sub>), E(g<sub>7/2</sub>) using shell model. Decay chain compared to that of <sup>111</sup>Xe-><sup>107</sup>Te-><sup>103</sup>Sn from other papers. Results on CD only. CONF E.Lansing (NS2008),P3,Darby
- 2010DA17 RADIOACTIVITY <sup>109</sup>Xe, <sup>105</sup>Te( $\alpha$ ); measured  $I_\alpha$ ,  $E_\alpha$ ,  $I_\gamma$ ,  $I_\gamma$ ; deduced J,  $\pi$  for ground and first excited states in <sup>101</sup>Sn, ground state spin inversion, strong pairing interaction. Comparison with shell model calculations. JOUR PRLTA 105 162502

## A=110

- <sup>110</sup>Tc 2010LI10 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>140</sup>Cs; deduced levels, J,  $\pi$ , configurations. <sup>107,108,109,110</sup>Tc; measured E $\gamma$ . Comparison with level structure of <sup>138</sup>I and with systematics of N=85 isotones of <sup>137</sup>Te, <sup>138</sup>I, <sup>139</sup>Xe, <sup>140</sup>Cs, <sup>141</sup>Ba, <sup>145</sup>Nd, <sup>146</sup>Pm, <sup>147</sup>Sm, <sup>148</sup>Eu and <sup>149</sup>Gd. JOUR PRVCA 81 037302
- <sup>110</sup>Ru 2008GOZO RADIOACTIVITY <sup>104,106,108</sup>Mo, <sup>106,108,110,112</sup>Ru, <sup>112,114,116</sup>Pd( $\beta^-$ ) [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- 2008HAZH RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ - $\gamma$ -coin.; <sup>108,110,112</sup>Ru, <sup>106</sup>Mo; deduced band structures, possible chiral doublets. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P387,Hamilton
- 2009ZH50 RADIOACTIVITY <sup>252</sup>Cf(SF); <sup>106</sup>Mo, <sup>110,112</sup>Ru; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, chiral doublet vibrational bands, J,  $\pi$ , energies, B(E2) / B(M1), branching ratios. 3D-Tilted Axis Cranking (TAC) calculations. JOUR CPCHC 33 s01 145
- 2010LUZZ RADIOACTIVITY <sup>252</sup>Cf(SF); <sup>108,110,112</sup>Ru; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced level schemes, mixing ratios, bands, J,  $\pi$ , angular correlations, level energies, corrected values for  $\gamma$ -cascade in <sup>110</sup>Ru. PC J H. Hamilton,2/11/2010
- <sup>110</sup>Rh 2008GOZO RADIOACTIVITY <sup>104,106,108</sup>Mo, <sup>106,108,110,112</sup>Ru, <sup>112,114,116</sup>Pd( $\beta^-$ ) [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- <sup>110</sup>Pd 2008SCZP NUCLEAR REACTIONS Ti(<sup>21</sup>Na, <sup>21</sup>Na'), E=1.7 MeV / nucleon; Ti(<sup>21</sup>Ne, <sup>21</sup>Ne'), E=1.7 MeV / nucleon; Ti(<sup>20</sup>Na, <sup>20</sup>Na'), E $\approx$ 1.7 MeV / nucleon; <sup>110</sup>Pd(<sup>29</sup>Na, <sup>29</sup>Na'), E=70 MeV; measured Coulomb excitation E $\gamma$ , I $\gamma(\theta)$ ,  $\gamma\gamma$ -coin, I(particle,  $\theta$ ), (particle) $\gamma$ -coin; deduced E, J,  $\pi$ ,  $\gamma$  yields, B(E2), quadrupole moments, mixing ratio; calculated B(E2),  $\gamma$  yields. Results on CD only. CONF E.Lansing (NS2008),P54,Schumaker
- 2008STZK NUCLEAR REACTIONS Cd(<sup>32</sup>S, X), <sup>110,111,112,113,114,115,116</sup>Cd, E=95 MeV; measured E(particle), I(particle,  $\theta$ ); C(<sup>96</sup>Ru, X), (<sup>98</sup>Ru, X), (<sup>100</sup>Ru, X), (<sup>102</sup>Ru, X), (<sup>104</sup>Ru, X), (<sup>102</sup>Pd, X), (<sup>104</sup>Pd, X), (<sup>106</sup>Pd, X), (<sup>108</sup>Pd, X), (<sup>110</sup>Pd, X), (<sup>106</sup>Cd, X), (<sup>108</sup>Cd, X), (<sup>112</sup>Cd, X), E $\approx$ 240 MeV; measured E $\gamma$ , I $\gamma(\theta)$ ,  $\gamma\gamma$ -coin. <sup>96,98,100,102,104</sup>Ru, <sup>102,104,106,108,110</sup>Pd, <sup>104,106,108,110,112,114</sup>Cd deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2008STZP NUCLEAR REACTIONS <sup>120</sup>Sn(<sup>67</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>69</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>71</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>73</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>67</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>69</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>71</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>73</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; measured Cu Coulomb excitation E $\gamma$ , I $\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671

A=110 (*continued*)

- <sup>110</sup>Cd    2008STZK    NUCLEAR REACTIONS Cd(<sup>32</sup>S, X), <sup>110,111,112,113,114,115,116</sup>Cd, E=95 MeV; measured E(particle), I(particle,  $\theta$ ); C(<sup>96</sup>Ru, X), (<sup>98</sup>Ru, X), (<sup>100</sup>Ru, X), (<sup>102</sup>Ru, X), (<sup>104</sup>Ru, X), (<sup>102</sup>Pd, X), (<sup>104</sup>Pd, X), (<sup>106</sup>Pd, X), (<sup>108</sup>Pd, X), (<sup>110</sup>Pd, X), (<sup>106</sup>Cd, X), (<sup>108</sup>Cd, X), (<sup>112</sup>Cd, X), E $\approx$ 240 MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin. <sup>96,98,100,102,104</sup>Ru, <sup>102,104,106,108,110</sup>Pd, <sup>104,106,108,110,112,114</sup>Cd deduced g factor, B(E2); calculated  $\sigma$ ( $\theta$ ), g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2009BE44    RADIOACTIVITY <sup>104</sup>Ag, <sup>110</sup>In(EC) [from <sup>107</sup>Ag, <sup>113</sup>In( $\gamma$ , 3n)]; measured E $\gamma$ , I $\gamma$ ; deduced level energies, T<sub>1/2</sub>, isomeric ratios. Comparison with calculations and TALYS code. JOUR BRSPE 73 1461
- <sup>110</sup>In    2009BE44    RADIOACTIVITY <sup>104</sup>Ag, <sup>110</sup>In(EC) [from <sup>107</sup>Ag, <sup>113</sup>In( $\gamma$ , 3n)]; measured E $\gamma$ , I $\gamma$ ; deduced level energies, T<sub>1/2</sub>, isomeric ratios. Comparison with calculations and TALYS code. JOUR BRSPE 73 1461
- 2010BEZW    NUCLEAR REACTIONS <sup>107</sup>Ag( $\gamma$ , 3n)<sup>104</sup>Ag, <sup>113</sup>In( $\gamma$ , 3n)<sup>110</sup>In, <sup>109</sup>Ag( $\gamma$ , 5n)<sup>104</sup>Ag, <sup>115</sup>In( $\gamma$ , 5n)<sup>110</sup>In, <sup>115</sup>In( $\gamma$ , 7n)<sup>108</sup>In, E=34-90 MeV bremsstrahlung; measured yields with activation method. <sup>104</sup>Ag, <sup>110,108</sup>In; deduced isomeric ratios Y<sub>m</sub> / Y<sub>g</sub> vs E $\gamma$ . CONF St.-Petersburg,P151,Bezshyyko
- 2010HE04    NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376
- <sup>110</sup>Sn    2010HE04    NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376

## A=111

- <sup>111</sup>Zr 20100H02 NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF- $B\rho$  method. JOUR JUPSA 79 073201
- <sup>111</sup>Pd 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- <sup>111</sup>Ag 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- <sup>111</sup>Cd 2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>111</sup>In 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376
- 2010PAZX NUCLEAR REACTIONS <sup>113</sup>In( $\gamma$ , n), ( $\gamma$ , 2n), E $\gamma$ =33, 34, 35 MeV bremsstrahlung; measured isomeric yield ratios with activation method. <sup>111m,g,112m,g</sup>In; deduced Y<sub>m</sub> / Y<sub>g</sub> vs E $\gamma$ . CONF St.-Petersburg,P187,Palvanov
- 2011TA02 NUCLEAR REACTIONS <sup>27</sup>Al(d, X)<sup>22</sup>Na / <sup>24</sup>Na, Ti(d, X)<sup>48</sup>V, In(d, X)<sup>113</sup>Sn / <sup>111</sup>In / <sup>113</sup>In / <sup>114</sup>In / <sup>115</sup>In / <sup>116</sup>In / <sup>111</sup>Cd / <sup>115</sup>Cd, E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick target yields,  $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26



## A=112

- $^{112}\text{Zr}$  20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{112}\text{Tc}$  2008FOZS NUCLEAR REACTIONS  $^9\text{Be}$ ( $^{238}\text{U}$ , X), E=80 MeV / nucleon; measured thick target E(particle), I(particle), A(particle), Z(particle), E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin.  $^{60}\text{Mn}$ ,  $^{78}\text{Ga}$ ,  $^{82}\text{Ga}$ ,  $^{92}\text{Br}$ ,  $^{95}\text{Rb}$ ,  $^{98}\text{Rb}$ ,  $^{92}\text{Y}$ ,  $^{101}\text{Y}$ ,  $^{112}\text{Tc}$  deduced isomeric transition, T $_{1/2}$ , isomer ratio. Results on CD only. CONF E.Lansing (NS2008),P104,Folden
- 2010BR15 NUCLEAR REACTIONS  $^9\text{Be}$ ( $^{238}\text{U}$ , F), E=11.4, 750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (fragment) $\gamma$ -,  $\gamma\gamma$ -coin,  $\gamma\gamma$ (t), energy loss and time-of-flight, isomer half-lives.  $^{112,113}\text{Tc}$ ; deduced levels, J,  $\pi$ , oblate and triaxial structures. Comparison with Potential energy surface (PES) calculations. JOUR PRVCA 82 044312
- $^{112}\text{Ru}$  2008GOZO RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- 2008HAZH RADIOACTIVITY  $^{252}\text{Cf}$ (SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ - $\gamma$ -coin.;  $^{108,110,112}\text{Ru}$ ,  $^{106}\text{Mo}$ ; deduced band structures, possible chiral doublets. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P387,Hamilton
- 2009ZH50 RADIOACTIVITY  $^{252}\text{Cf}$ (SF);  $^{106}\text{Mo}$ ,  $^{110,112}\text{Ru}$ ; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, chiral doublet vibrational bands, J,  $\pi$ , energies, B(E2) / B(M1), branching ratios. 3D-Tilted Axis Cranking (TAC) calculations. JOUR CPCHC 33 s01 145
- 2010HA16 RADIOACTIVITY  $^{112}\text{Ru}$ (IT) [from  $^{252}\text{Cf}$ (SF)]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced wobbling bands. Comparison with systematics in adjacent nuclei. JOUR NUPAB 834 28c
- 2010LUZZ RADIOACTIVITY  $^{252}\text{Cf}$ (SF);  $^{108,110,112}\text{Ru}$ ; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced level schemes, mixing ratios, bands, J,  $\pi$ , angular correlations, level energies, corrected values for  $\gamma$ -cascade in  $^{110}\text{Ru}$ . PC J H. Hamilton,2/11/2010
- $^{112}\text{Rh}$  2008GOZO RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- $^{112}\text{Pd}$  2008GOZO RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin

## A=112 (continued)

- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- $^{112}\text{Ag}$  2008GOZO RADIOACTIVITY  $^{104,106,108}\text{Mo}$ ,  $^{106,108,110,112}\text{Ru}$ ,  $^{112,114,116}\text{Pd}(\beta^-)$  [from fission]; measured  $E\gamma$ ,  $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin
- 2010BR02 ATOMIC MASSES  $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ ,  $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to  $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength  $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313
- 2010DE01 NUCLEAR REACTIONS  $^{232}\text{Th}(\gamma, \text{F})^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- $^{112}\text{Cd}$  2008STZK NUCLEAR REACTIONS  $\text{Cd}(^{32}\text{S}, \text{X})$ ,  $^{110,111,112,113,114,115,116}\text{Cd}$ , E=95 MeV; measured  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ;  $\text{C}(^{96}\text{Ru}, \text{X})$ ,  $(^{98}\text{Ru}, \text{X})$ ,  $(^{100}\text{Ru}, \text{X})$ ,  $(^{102}\text{Ru}, \text{X})$ ,  $(^{104}\text{Ru}, \text{X})$ ,  $(^{102}\text{Pd}, \text{X})$ ,  $(^{104}\text{Pd}, \text{X})$ ,  $(^{106}\text{Pd}, \text{X})$ ,  $(^{108}\text{Pd}, \text{X})$ ,  $(^{110}\text{Pd}, \text{X})$ ,  $(^{106}\text{Cd}, \text{X})$ ,  $(^{108}\text{Cd}, \text{X})$ ,  $(^{112}\text{Cd}, \text{X})$ , E $\approx$ 240 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{96,98,100,102,104}\text{Ru}$ ,  $^{102,104,106,108,110}\text{Pd}$ ,  $^{104,106,108,110,112,114}\text{Cd}$  deduced g factor, B(E2); calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD only. CONF E.Lansing (NS2008),P182,Stuchbery
- $^{112}\text{In}$  2009LI66 NUCLEAR REACTIONS  $^{110}\text{Pd}(^7\text{Li}, 5n)^{112}\text{In}$ , E=50 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , K bands. JOUR CPCHC 33 s01 209
- 2010HE09 NUCLEAR REACTIONS  $^{110}\text{Pd}(^7\text{Li}, 5n)$ , E=50 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{112}\text{In}$ ; deduced levels, J,  $\pi$ , DCO matrix, bands,  $\gamma$ -multipolarity, deformation, moment of inertia, angular momentum, effective interaction. JOUR NUPAB 834 84c
- 2010PAZZ NUCLEAR REACTIONS  $^{113}\text{In}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $E\gamma=33, 34, 35$  MeV bremsstrahlung; measured isomeric yield ratios with activation method.  $^{111m,g,112m,g}\text{In}$ ; deduced  $Y_m / Y_g$  vs  $E\gamma$ . CONF St.-Petersburg,P187,Palvanov
- $^{112}\text{Sn}$  2008BOZK NUCLEAR REACTIONS  $^{112,124}\text{Sn}(\gamma, \gamma')$ ; measured levels, J,  $\pi$ ; evaluated energy weighted sum rule. Monoenergetic linearly polarized beam. THESIS M Boswell, University of North Carolina

KEYNUMBERS AND KEYWORDS

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**A=112 (continued)**

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| 2008VOZV          | NUCLEAR REACTIONS $^{112,116,120,124}\text{Sn}(\gamma, \gamma')$ , E=5.5-9.5 MeV; measured $E\gamma$ , $I\gamma$ ; $^{112,116,120,124}\text{Sn}$ ; deduced B(E1) strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P335,Von Neumann-  |
| 2010KU07          | NUCLEAR REACTIONS $^{112}\text{Sn}$ , $^{116}\text{Sn}(^{58}\text{Ni}, ^{58}\text{Ni})$ , E=175 MeV; measured $E\gamma$ , $I\gamma$ , and scattered particle spectra. $^{112,116}\text{Sn}$ ; deduced B(E2). Systematics of first 2+ energies and associated B(E2) values for $^{102,104,106,108,110,112,114,116,118,120,122,124,126,128,130}\text{Sn}$ Comparison with relativistic quasiparticle random-phase approximation (RQRPA) and large-scale shell model calculations. JOUR PRVCA 81 024306   |
| 2010LI07          | NUCLEAR REACTIONS $^{112,114,116,118,120,122,124}\text{Sn}(\alpha, \alpha')$ , E=386 MeV; measured $E\alpha$ , $I\alpha$ , excitation energies, $\sigma(\theta)$ , $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309 |
| $^{112}\text{Cs}$ | 2008CAZH NUCLEAR REACTIONS $^{58}\text{Ni}(^{58}\text{Ni}, 3np)$ , E not given; measured $E\alpha$ , $I\alpha(t)$ , $\alpha\alpha$ -coin; deduced $T_{1/2}$ , $\alpha$ -branching, Q-values. Results on CD only. CONF E.Lansing (NS2008),P85,Cartegni  |
|                   | 2008SMZU NUCLEAR REACTIONS $^{58}\text{Ni}(^{58}\text{Ni}, 3np)$ , E=260 MeV; measured $E\gamma$ , $I\gamma$ , A(particle), Z(particle), (particle) $\gamma$ -coin. $^{112}\text{Cs}$ deduced low-lying levels, J, $\pi$ , rotational bands. Abstract only. CONF E.Lansing (NS2008),P176,Smith   |

**A=113**

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|-------------------|--|
| $^{113}\text{Tc}$ | 2010BR15 NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{F})$ , E=11.4, 750 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (fragment) $\gamma$ -, $\gamma\gamma$ -coin, $\gamma\gamma(t)$ , energy loss and time-of-flight, isomer half-lives. $^{112,113}\text{Tc}$ ; deduced levels, J, $\pi$ , oblate and triaxial structures. Comparison with Potential energy surface (PES) calculations. JOUR PRVCA 82 044312  |
| $^{113}\text{Ag}$ | 2010DE01 NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, \text{F})$ $^{77}\text{Ge} / ^{82}\text{Br} / ^{85}\text{Kr} / ^{85}\text{Sr} / ^{85}\text{Y} / ^{87}\text{Kr} / ^{87}\text{Sr} / ^{87}\text{Y} / ^{88}\text{Kr} / ^{91}\text{Sr} / ^{91}\text{Y} / ^{92}\text{Sr} / ^{92}\text{Y} / ^{93}\text{Y} / ^{93}\text{Mo} / ^{93}\text{Tc} / ^{95}\text{Zr} / ^{95}\text{Nb} / ^{95}\text{Tc} / ^{96}\text{Nb} / ^{97}\text{Zr} / ^{97}\text{Nb} / ^{99}\text{Mo} / ^{99}\text{Tc} / ^{99}\text{Rh} / ^{101}\text{Tc} / ^{101}\text{Rh} / ^{103}\text{Ru} / ^{105}\text{Ru} / ^{105}\text{Rh} / ^{109}\text{In} / ^{111}\text{Pd} / ^{111}\text{Ag} / ^{112}\text{Pd} / ^{112}\text{Ag} / ^{113}\text{Ag} / ^{115}\text{Ag} / ^{115}\text{Cd} / ^{117}\text{Cd} / ^{117}\text{In}$ , E=50, 3500 MeV; measured $E\gamma$ , $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
| $^{113}\text{In}$ | 2008GOZP RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $^{54}\text{Ni}$ $T_{1/2}$ , GT distribution strength; $^{62}\text{Ge}$ ; $^{113}\text{In}$ ; $^{190}\text{Ta}$ ; measured decay products. Results on CD only. CONF E.Lansing (NS2008),P9,Gorska   |
|                   | 2010CHZY NUCLEAR REACTIONS $\text{Sn}(\gamma, xnyp)$ , E=19.5 MeV bremsstrahlung; measured yields with activation method. $^{111,113,117m,g,123m,g}\text{Sn}$ ; deduced relative yields in $(\gamma, n)$ . $^{113}\text{In}$ ; deduced relative yields in $(\gamma, pn)$ . $^{115m,g,116m,g}\text{In}$ ; deduced relative yields in $(\gamma, p)$ . CONF St.-Petersburg,P191,Chetvertkova  |

KEYNUMBERS AND KEYWORDS

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**A=113 (continued)**

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| 2010HE04          |          | NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), $^{108}\text{Cd}(\alpha, 2n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{106}\text{Cd}(\alpha, np)$ , $^{109}\text{Cd}(\alpha, np)$ , ( $\alpha$ , 3np), $^{110}\text{Cd}(\alpha, n)$ , ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{111}\text{Cd}(\alpha, p)$ , ( $\alpha$ , np), ( $\alpha$ , 3np), $^{112}\text{Cd}(\alpha, 3n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), $^{113}\text{Cd}(\alpha, p)$ , ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{114}\text{Cd}(\alpha, n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), $^{116}\text{Cd}(\alpha, 3n)$ , ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X) $^{66}\text{Ga}$ / $^{67}\text{Ga}$ , E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376 |
| 2011TA02          |          | NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{X})^{22}\text{Na}$ / $^{24}\text{Na}$ , Ti( $\text{d}, \text{X})^{48}\text{V}$ , In( $\text{d}, \text{X})^{113}\text{Sn}$ / $^{111}\text{In}$ / $^{113}\text{In}$ / $^{114}\text{In}$ / $^{115}\text{In}$ / $^{116}\text{In}$ / $^{111}\text{Cd}$ / $^{115}\text{Cd}$ , E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick target yields, $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26   |
| $^{113}\text{Sn}$ | 2010HE04 | NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), $^{108}\text{Cd}(\alpha, 2n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{106}\text{Cd}(\alpha, np)$ , $^{109}\text{Cd}(\alpha, np)$ , ( $\alpha$ , 3np), $^{110}\text{Cd}(\alpha, n)$ , ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{111}\text{Cd}(\alpha, p)$ , ( $\alpha$ , np), ( $\alpha$ , 3np), $^{112}\text{Cd}(\alpha, 3n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), $^{113}\text{Cd}(\alpha, p)$ , ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), $^{114}\text{Cd}(\alpha, n)$ , ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), $^{116}\text{Cd}(\alpha, 3n)$ , ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X) $^{66}\text{Ga}$ / $^{67}\text{Ga}$ , E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376 |
|                   | 2011TA02 | NUCLEAR REACTIONS $^{27}\text{Al}(\text{d}, \text{X})^{22}\text{Na}$ / $^{24}\text{Na}$ , Ti( $\text{d}, \text{X})^{48}\text{V}$ , In( $\text{d}, \text{X})^{113}\text{Sn}$ / $^{111}\text{In}$ / $^{113}\text{In}$ / $^{114}\text{In}$ / $^{115}\text{In}$ / $^{116}\text{In}$ / $^{111}\text{Cd}$ / $^{115}\text{Cd}$ , E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick target yields, $\sigma$ . Comparison with experimental data, ALICE-D and EMPIRE-D codes. JOUR ARISE 69 26   |

**A=114**

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| $^{114}\text{Nb}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-B}\rho$ method. JOUR JUPSA 79 073201 |
| $^{114}\text{Pd}$ | 2008GOZO | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |
| $^{114}\text{Ag}$ | 2008GOZO | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured E $\gamma$ , I $\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |

A=114 (*continued*)

- 2010BR02 ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag,  
<sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to  
<sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer;  
deduced excitation energies of the isomers; evaluated mass excesses;  
two-neutron separate energies, and proton-neutron interaction strength  
 $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA  
81 034313
- <sup>114</sup>Cd 2008STZK NUCLEAR REACTIONS Cd(<sup>32</sup>S, X), <sup>110,111,112,113,114,115,116</sup>Cd, E=95  
MeV; measured E(particle), I(particle,  $\theta$ ); C(<sup>96</sup>Ru, X), (<sup>98</sup>Ru, X),  
(<sup>100</sup>Ru, X), (<sup>102</sup>Ru, X), (<sup>104</sup>Ru, X), (<sup>102</sup>Pd, X), (<sup>104</sup>Pd, X), (<sup>106</sup>Pd, X),  
(<sup>108</sup>Pd, X), (<sup>110</sup>Pd, X), (<sup>106</sup>Cd, X), (<sup>108</sup>Cd, X), (<sup>112</sup>Cd, X), E $\approx$ 240  
MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin. <sup>96,98,100,102,104</sup>Ru,  
<sup>102,104,106,108,110</sup>Pd, <sup>104,106,108,110,112,114</sup>Cd deduced g factor, B(E2);  
calculated  $\sigma(\theta)$ , g factor, B(E2) using cranking model. Results on CD  
only. CONF E.Lansing (NS2008),P182,Stuchbery
- 2010BR02 ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag,  
<sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to  
<sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer;  
deduced excitation energies of the isomers; evaluated mass excesses;  
two-neutron separate energies, and proton-neutron interaction strength  
 $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA  
81 034313
- 2010ZU02 RADIOACTIVITY <sup>106,114,116</sup>Cd, <sup>120,128,130</sup>Te, <sup>64</sup>Zn(2 $\beta$ ); measured Ee,  
Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 267
- <sup>114</sup>In 2009WA22 RADIOACTIVITY <sup>114</sup>In( $\beta^-$ ); measured  $\beta$  spectra,  $\beta(\theta, T, H)$ , and ce;  
using low-temperature nuclear orientation technique; deduced  
 $\beta$ -asymmetry parameter. Comparison with GEANT4-based simulation  
code and predictions of Standard model. JOUR PRVCA 80 062501
- 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np),  
( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n),  
( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n),  
( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np),  
<sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p),  
<sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga,  
E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with  
experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR  
NIMBE 268 1376
- 2011TA02 NUCLEAR REACTIONS <sup>27</sup>Al(d, X)<sup>22</sup>Na / <sup>24</sup>Na, Ti(d, X)<sup>48</sup>V, In(d,  
X)<sup>113</sup>Sn / <sup>111</sup>In / <sup>113</sup>In / <sup>114</sup>In / / <sup>115</sup>In / <sup>116</sup>In / <sup>111</sup>Cd / <sup>115</sup>Cd, E<40  
MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick target yields,  $\sigma$ . Comparison  
with experimental data, ALICE-D and EMPIRE-D codes. JOUR  
ARISE 69 26
- <sup>114</sup>Sn 2009WA22 RADIOACTIVITY <sup>114</sup>In( $\beta^-$ ); measured  $\beta$  spectra,  $\beta(\theta, T, H)$ , and ce;  
using low-temperature nuclear orientation technique; deduced  
 $\beta$ -asymmetry parameter. Comparison with GEANT4-based simulation  
code and predictions of Standard model. JOUR PRVCA 80 062501

**A=114 (continued)**

- 2010LI07 NUCLEAR REACTIONS  $^{112,114,116,118,120,122,124}\text{Sn}(\alpha, \alpha')$ , E=386 MeV; measured  $E\alpha$ ,  $I\alpha$ , excitation energies,  $\sigma(\theta)$ ,  $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309

**A=115**

- $^{115}\text{Nb}$  2010OH02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{115}\text{Mo}$  2010OH02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{115}\text{Ru}$  2010AY07 RADIOACTIVITY  $^{115}\text{Ru}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ .  $^{115}\text{Rh}$ ; deduced levels, J,  $\pi$ . Discusses Penning trap experimental possibilities. JOUR NUPAB 834 724c
- 2010KU01 RADIOACTIVITY  $^{115}\text{Ru}(\beta^-)$  [from  $^{238}\text{U}(\text{p}, \text{F})^{115}\text{Ru}$ , E=25 MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced energy levels, gamma transitions,  $T_{1/2}$ . JYFLTRAP Penning trap system. JOUR APOBB 41 469
- $^{115}\text{Rh}$  2010AY07 RADIOACTIVITY  $^{115}\text{Ru}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ .  $^{115}\text{Rh}$ ; deduced levels, J,  $\pi$ . Discusses Penning trap experimental possibilities. JOUR NUPAB 834 724c
- 2010KU01 RADIOACTIVITY  $^{115}\text{Ru}(\beta^-)$  [from  $^{238}\text{U}(\text{p}, \text{F})^{115}\text{Ru}$ , E=25 MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced energy levels, gamma transitions,  $T_{1/2}$ . JYFLTRAP Penning trap system. JOUR APOBB 41 469
- 2010KU19 RADIOACTIVITY  $^{115}\text{Rh}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{115}\text{Pd}$ ; deduced levels, J,  $\pi$ . Systematics of low-lying states in odd-A Mo, Ru and Pd nuclei from N=61-71. JOUR PRVCA 82 027306
- $^{115}\text{Pd}$  2010KU19 RADIOACTIVITY  $^{115}\text{Rh}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{115}\text{Pd}$ ; deduced levels, J,  $\pi$ . Systematics of low-lying states in odd-A Mo, Ru and Pd nuclei from N=61-71. JOUR PRVCA 82 027306

A=115 (*continued*)

- <sup>115</sup>Ag 2010BR02 ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag,  
<sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to  
<sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer;  
deduced excitation energies of the isomers; evaluated mass excesses;  
two-neutron separate energies, and proton-neutron interaction strength  
 $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA  
81 034313
- 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y  
/ <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo /  
<sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh  
/ <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag /  
<sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500  
MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric  
contribution high-energy fission component. JOUR PANUE 73 24
- <sup>115</sup>Cd 2010DE01 NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y  
/ <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo /  
<sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh  
/ <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag /  
<sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500  
MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric  
contribution high-energy fission component. JOUR PANUE 73 24
- 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np),  
( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n),  
( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n),  
( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np),  
<sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p),  
<sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga,  
E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with  
experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR  
NIMBE 268 1376
- 2010MAZV NUCLEAR REACTIONS <sup>116</sup>Cd( $\gamma$ , n), E=9-20 MeV bremsstrahlung  
(step 0.5 MeV); measured isomeric yield ratio. <sup>115m,g</sup>Cd; deduced Y<sub>m</sub>  
/ Y<sub>g</sub> vs E $\gamma$ ; deduced parameters of fitted curve. CONF  
St.-Petersburg,P156,Mazur
- 2010ZH20 NUCLEAR REACTIONS <sup>116</sup>Cd, <sup>121</sup>Sb( $\gamma$ , n), E<10.5 MeV; measured  
E $\gamma$ , I $\gamma$ ; deduced isomeric yields and ratios. JOUR BRSPE 74 829
- <sup>115</sup>In 2010HE04 NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np),  
( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n),  
( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n),  
( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np),  
<sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p),  
<sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga,  
E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with  
experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR  
NIMBE 268 1376

KEYNUMBERS AND KEYWORDS

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**A=115 (continued)**

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| $^{115}\text{Sn}$ | 2009UT01 | NUCLEAR REACTIONS $^{116,117}\text{Sn}(\gamma, n)$ , $E=6.80\text{-}13.5$ MeV; measured neutron spectra and $\sigma$ using incident beam of laser Compton-scattered (LCS) photons. Comparisons of E1 $\gamma$ -ray strength functions with previous experimental results and calculations using Hartree-Fock-Bogoliubov plus quasiparticle random-phase approximation (HFB+QRPA) models. JOUR PRVCA 80 055806 |
|                   | 2009UTZX | NUCLEAR REACTIONS $^{116,117}\text{Sn}(\gamma, n)$ , $E\approx\text{threshold-}17$ MeV; measured $\sigma$ , photon strength functions; calculated $\sigma$ , photon strength functions using HFB+QRPA, HFB+QRPA+Pygmy resonance, Lorentzian; deduced low-energy resonance behavior. Calculations compared to own data and to EXFOR ones. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P637,Utsunomiya   |

**A=116**

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|-------------------|----------|--|
| $^{116}\text{Mo}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20\text{-}56$ , $A=52\text{-}152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{116}\text{Pd}$ | 2008G0Z0 | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured $E\gamma$ , $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |
| $^{116}\text{Ag}$ | 2008G0Z0 | RADIOACTIVITY $^{104,106,108}\text{Mo}$ , $^{106,108,110,112}\text{Ru}$ , $^{112,114,116}\text{Pd}(\beta^-)$ [from fission]; measured $E\gamma$ , $I\gamma$ ; deduced mixing ratio, g-factor. Abstract only. CONF E.Lansing (NS2008),P106,Goodin   |
|                   | 2009BA52 | RADIOACTIVITY $^{116,116m}\text{Ag}(\beta^-)$ [from $^{238}\text{U}(p, X)$ , $E$ not given]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, ce, and half-lives using HRIBF facility. $^{116}\text{Ag}$ , $^{116}\text{Cd}$ ; deduced levels, $J$ , $\pi$ , conversion coefficients, multipolarities, logft, and BE2 rates. Comparisons with IBM-2 calculations, and with low-energy $0+$ and $2+$ level systematics of $^{110,112,114,116,118,120}\text{Cd}$ . JOUR PRVCA 80 054318  |
|                   | 2010BR02 | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |
| $^{116}\text{Cd}$ | 2009BA52 | RADIOACTIVITY $^{116,116m}\text{Ag}(\beta^-)$ [from $^{238}\text{U}(p, X)$ , $E$ not given]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, ce, and half-lives using HRIBF facility. $^{116}\text{Ag}$ , $^{116}\text{Cd}$ ; deduced levels, $J$ , $\pi$ , conversion coefficients, multipolarities, logft, and BE2 rates. Comparisons with IBM-2 calculations, and with low-energy $0+$ and $2+$ level systematics of $^{110,112,114,116,118,120}\text{Cd}$ . JOUR PRVCA 80 054318  |



KEYNUMBERS AND KEYWORDS

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A=116 (*continued*)

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| 2009DA25          | RADIOACTIVITY $^{48}\text{Ca}$ , $^{82}\text{Se}$ , $^{96}\text{Zr}$ , $^{100}\text{Mo}$ , $^{116}\text{Cd}$ , $^{130}\text{Te}$ , $^{150}\text{Nd}(2\beta)$ ; measured $T_{1/2}$ for zero / two-neutrino $2\beta$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c   |
| 2010SI06          | RADIOACTIVITY $^{100}\text{Mo}$ , $^{82}\text{Se}$ , $^{116}\text{Cd}$ , $^{150}\text{Nd}$ , $^{96}\text{Zr}$ , $^{48}\text{Ca}$ , $^{130}\text{Te}(2\beta^-)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 270  |
| 2010ZU02          | RADIOACTIVITY $^{106,114,116}\text{Cd}$ , $^{120,128,130}\text{Te}$ , $^{64}\text{Zn}(2\beta)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 267  |
| $^{116}\text{In}$ | 2010HE04 NUCLEAR REACTIONS $\text{Cd}(\alpha, xn\alpha)$ , $^{108}\text{Cd}(\alpha, 2n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{106}\text{Cd}(\alpha, np)$ , $^{109}\text{Cd}(\alpha, np)$ , $(\alpha, 3np)$ , $^{110}\text{Cd}(\alpha, n)$ , $(\alpha, p)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{111}\text{Cd}(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 3np)$ , $^{112}\text{Cd}(\alpha, 3n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $^{113}\text{Cd}(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $^{114}\text{Cd}(\alpha, n)$ , $(\alpha, p)$ , $(\alpha, np)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $(\alpha, 4np)$ , $(\alpha, n2p)$ , $^{116}\text{Cd}(\alpha, 3n)$ , $(\alpha, 2np)$ , $(\alpha, 3np)$ , $(\alpha, 3n2p)$ , $\text{Cu}(\alpha, X)^{66}\text{Ga} / ^{67}\text{Ga}$ , E=5-50 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376 |
| $^{116}\text{Sn}$ | 2008VOZV NUCLEAR REACTIONS $^{112,116,120,124}\text{Sn}(\gamma, \gamma')$ , E=5.5-9.5 MeV; measured $E\gamma$ , $I\gamma$ ; $^{112,116,120,124}\text{Sn}$ ; deduced B(E1) strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P335,Von Neumann-   |
| 2009UT01          | NUCLEAR REACTIONS $^{116,117}\text{Sn}(\gamma, n)$ , E=6.80-13.5 MeV; measured neutron spectra and $\sigma$ using incident beam of laser Compton-scattered (LCS) photons. Comparisons of E1 $\gamma$ -ray strength functions with previous experimental results and calculations using Hartree-Fock-Bogoliubov plus quasiparticle random-phase approximation (HFB+QRPA) models. JOUR PRVCA 80 055806   |
| 2009UTZX          | NUCLEAR REACTIONS $^{116,117}\text{Sn}(\gamma, n)$ , E $\approx$ threshold-17 MeV; measured $\sigma$ , photon strength functions; calculated $\sigma$ , photon strength functions using HFB+QRPA, HFB+QRPA+Pygmy resonance, Lorentzian; deduced low-energy resonance behavior. Calculations compared to own data and to EXFOR ones. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P637,Utsunomiya   |
| 2010HU02          | NUCLEAR REACTIONS $^{237}\text{Np}(^{116}\text{Sn}, ^{118}\text{Sn})^{235}\text{Np}$ , E=801 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -, (fragment)( fragment) $\gamma$ -coin, and angular distribution of $\gamma$ -ray yields for $^{116}\text{Sn}$ , $^{117}\text{Sn}$ and $^{118}\text{Sn}$ using the Gammasphere and CHICO arrays. $^{235}\text{Np}$ ; deduced levels, J, $\pi$ , bands, angular momentum, moment of inertia as functions of rotational frequency, configurations. $^{116,117,118}\text{Sn}$ ; measured $E\gamma$ , $\gamma\gamma$ -coin. Comparison with cranked shell-model calculations and with alignment plots for $^{237}\text{Np}$ and $^{241}\text{Am}$ . JOUR PRVCA 81 014312   |
| 2010KU07          | NUCLEAR REACTIONS $^{112}\text{Sn}$ , $^{116}\text{Sn}(^{58}\text{Ni}, ^{58}\text{Ni})$ , E=175 MeV; measured $E\gamma$ , $I\gamma$ , and scattered particle spectra. $^{112,116}\text{Sn}$ ; deduced B(E2). Systematics of first 2+ energies and associated B(E2) values for $^{102,104,106,108,110,112,114,116,118,120,122,124,126,128,130}\text{Sn}$ Comparison with relativistic quasiparticle random-phase approximation (RQRPA) and large-scale shell model calculations. JOUR PRVCA 81 024306   |

KEYNUMBERS AND KEYWORDS

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**A=116 (continued)**

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| 2010LI07          | NUCLEAR REACTIONS $^{112,114,116,118,120,122,124}\text{Sn}(\alpha, \alpha')$ , E=386 MeV; measured $E\alpha$ , $I\alpha$ , excitation energies, $\sigma(\theta)$ , $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309 |
| 2010SI06          | RADIOACTIVITY $^{100}\text{Mo}$ , $^{82}\text{Se}$ , $^{116}\text{Cd}$ , $^{150}\text{Nd}$ , $^{96}\text{Zr}$ , $^{48}\text{Ca}$ , $^{130}\text{Te}(2\beta^-)$ ; measured $E_e$ , $I_e$ ; deduced $T_{1/2}$ . JOUR PPNPD 64 270  |
| $^{116}\text{Sb}$ | 2009YAZS NUCLEAR REACTIONS $^{113}\text{In}(\alpha, \gamma)$ , $E(\text{cm})=8.69\text{-}13.66$ MeV; $^{113}\text{In}(\alpha, n)$ , $E(\text{cm})=8.69\text{-}13.66$ MeV; measured $^{116,117}\text{Sb}$ $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , S-factor; calculated $\sigma$ , S-factor using NON-SMOKER code. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P631,Yalcin   |

**A=117**

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|-------------------|--|
| $^{117}\text{Mo}$ | 2010OH02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201  |
| $^{117}\text{Ag}$ | 2010BR02 ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313   |
| $^{117}\text{Cd}$ | 2010DE01 NUCLEAR REACTIONS $^{232}\text{Th}(\gamma, F)^{77}\text{Ge}$ / $^{82}\text{Br}$ / $^{85}\text{Kr}$ / $^{85}\text{Sr}$ / $^{85}\text{Y}$ / $^{87}\text{Kr}$ / $^{87}\text{Sr}$ / $^{87}\text{Y}$ / $^{88}\text{Kr}$ / $^{91}\text{Sr}$ / $^{91}\text{Y}$ / $^{92}\text{Sr}$ / $^{92}\text{Y}$ / $^{93}\text{Y}$ / $^{93}\text{Mo}$ / $^{93}\text{Tc}$ / $^{95}\text{Zr}$ / $^{95}\text{Nb}$ / $^{95}\text{Tc}$ / $^{96}\text{Nb}$ / $^{97}\text{Zr}$ / $^{97}\text{Nb}$ / $^{99}\text{Mo}$ / $^{99}\text{Tc}$ / $^{99}\text{Rh}$ / $^{101}\text{Tc}$ / $^{101}\text{Rh}$ / $^{103}\text{Ru}$ / $^{105}\text{Ru}$ / $^{105}\text{Rh}$ / $^{109}\text{In}$ / $^{111}\text{Pd}$ / $^{111}\text{Ag}$ / $^{112}\text{Pd}$ / $^{112}\text{Ag}$ / $^{113}\text{Ag}$ / $^{115}\text{Ag}$ / $^{115}\text{Cd}$ / $^{117}\text{Cd}$ / $^{117}\text{In}$ , E=50, 3500 MeV; measured $E\gamma$ , $I\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24 |
|                   | 2010RE01 RADIOACTIVITY $^{121m,123m}\text{In}(\text{IT})$ , $^{125m}\text{Sb}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced levels, J, $\pi$ . $^{117}\text{Cd}$ , $^{128}\text{Sb}(\beta^-)$ ; measured $E\gamma$ . JOUR PRVCA 81 014301   |

A=117 (*continued*)

- <sup>117</sup>In      2010DE01      NUCLEAR REACTIONS <sup>232</sup>Th( $\gamma$ , F)<sup>77</sup>Ge / <sup>82</sup>Br / <sup>85</sup>Kr / <sup>85</sup>Sr / <sup>85</sup>Y / <sup>87</sup>Kr / <sup>87</sup>Sr / <sup>87</sup>Y / <sup>88</sup>Kr / <sup>91</sup>Sr / <sup>91</sup>Y / <sup>92</sup>Sr / <sup>92</sup>Y / <sup>93</sup>Y / <sup>93</sup>Mo / <sup>93</sup>Tc / <sup>95</sup>Zr / <sup>95</sup>Nb / <sup>95</sup>Tc / <sup>96</sup>Nb / <sup>97</sup>Zr / <sup>97</sup>Nb / <sup>99</sup>Mo / <sup>99</sup>Tc / <sup>99</sup>Rh / <sup>101</sup>Tc / <sup>101</sup>Rh / <sup>103</sup>Ru / <sup>105</sup>Ru / <sup>105</sup>Rh / <sup>109</sup>In / <sup>111</sup>Pd / <sup>111</sup>Ag / <sup>112</sup>Pd / <sup>112</sup>Ag / <sup>113</sup>Ag / <sup>115</sup>Ag / <sup>115</sup>Cd / <sup>117</sup>Cd / <sup>117</sup>In, E=50, 3500 MeV; measured E $\gamma$ , I $\gamma$ ; deduced yield of fission fragments, symmetric contribution high-energy fission component. JOUR PANUE 73 24
- 2010HE04      NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376
- 2010RE01      RADIOACTIVITY <sup>121m,123m</sup>In(IT), <sup>125m</sup>Sb(IT); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced levels, J,  $\pi$ . <sup>117</sup>Cd, <sup>128</sup>Sb( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 81 014301
- <sup>117</sup>Sn      2008NIZU      NUCLEAR REACTIONS <sup>116,117,118,119</sup>Sn, <sup>155,156,157,158</sup>Gd(n,  $\gamma$ ), E=10-100 keV, 550 keV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , d $\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615
- 2010F010      NUCLEAR REACTIONS <sup>173</sup>Yb(<sup>24</sup>Mg, X), E=134.5 MeV; <sup>176</sup>Yb(<sup>23</sup>Na, X), E=129 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array. <sup>96,97</sup>Nb; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of <sup>95,96</sup>Zr. Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in <sup>87</sup>Nb and <sup>101</sup>Nb. <sup>93,94,95</sup>Nb, <sup>117,118,119</sup>Sn; measured E $\gamma$ , I $\gamma$ . JOUR PRVCA 82 044306
- 2010HE04      NUCLEAR REACTIONS Cd( $\alpha$ , xn $\alpha$ ), <sup>108</sup>Cd( $\alpha$ , 2n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>106</sup>Cd( $\alpha$ , np), <sup>109</sup>Cd( $\alpha$ , np), ( $\alpha$ , 3np), <sup>110</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>111</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 3np), <sup>112</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), <sup>113</sup>Cd( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), <sup>114</sup>Cd( $\alpha$ , n), ( $\alpha$ , p), ( $\alpha$ , np), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 4np), ( $\alpha$ , n2p), <sup>116</sup>Cd( $\alpha$ , 3n), ( $\alpha$ , 2np), ( $\alpha$ , 3np), ( $\alpha$ , 3n2p), Cu( $\alpha$ , X)<sup>66</sup>Ga / <sup>67</sup>Ga, E=5-50 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data, ALICE-IPPE, EMPIRE, GNASH codes. JOUR NIMBE 268 1376
- 2010HU02      NUCLEAR REACTIONS <sup>237</sup>Np(<sup>116</sup>Sn, <sup>118</sup>Sn)<sup>235</sup>Np, E=801 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -, (fragment)( fragment) $\gamma$ -coin, and angular distribution of  $\gamma$ -ray yields for <sup>116</sup>Sn, <sup>117</sup>Sn and <sup>118</sup>Sn using the Gammasphere and CHICO arrays. <sup>235</sup>Np; deduced levels, J,  $\pi$ , bands, angular momentum, moment of inertia as functions of rotational frequency, configurations. <sup>116,117,118</sup>Sn; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with cranked shell-model calculations and with alignment plots for <sup>237</sup>Np and <sup>241</sup>Am. JOUR PRVCA 81 014312

KEYNUMBERS AND KEYWORDS

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**A=117 (continued)**

<sup>117</sup>Sb      2009YAZS      NUCLEAR REACTIONS <sup>113</sup>In( $\alpha$ ,  $\gamma$ ), E(cm)=8.69-13.66 MeV; <sup>113</sup>In( $\alpha$ , n), E(cm)=8.69-13.66 MeV; measured <sup>116,117</sup>Sb E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , S-factor; calculated  $\sigma$ , S-factor using NON-SMOKER code. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P631,Yalcin

**A=118**

<sup>118</sup>Ag      2010BR02      ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag, <sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to <sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength  $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313

<sup>118</sup>Sn      2008GUZM      NUCLEAR REACTIONS <sup>120</sup>Sn(p, t), E=21 MeV; measured reaction products; deduced  $\sigma(\theta)$  for transitions to <sup>118</sup>Sn levels. Comparison with DWBA calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P315,Guazzoni

2008NIZU      NUCLEAR REACTIONS <sup>116,117,118,119</sup>Sn, <sup>155,156,157,158</sup>Gd(n,  $\gamma$ ), E=10-100 keV, 550 keV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ,  $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615

2009WA26      NUCLEAR REACTIONS <sup>116</sup>Cd(<sup>7</sup>Li, 4np)<sup>118</sup>Sn, E=48 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced energy levels, J,  $\pi$ , intruder band. JOUR CPCHC 33 838

2010F010      NUCLEAR REACTIONS <sup>173</sup>Yb(<sup>24</sup>Mg, X), E=134.5 MeV; <sup>176</sup>Yb(<sup>23</sup>Na, X), E=129 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array. <sup>96,97</sup>Nb; deduced levels, J,  $\pi$ , high-spin states. Comparison with level systematics of <sup>95,96</sup>Zr. Systematics of first 2+ states in N=48-58, even-A Zr nuclei; first 13 / 2+ states in A=89-97 Nb nuclei, and low-spin states in <sup>87</sup>Nb and <sup>101</sup>Nb. <sup>93,94,95</sup>Nb, <sup>117,118,119</sup>Sn; measured E $\gamma$ , I $\gamma$ . JOUR PRVCA 82 044306

2010HU02      NUCLEAR REACTIONS <sup>237</sup>Np(<sup>116</sup>Sn, <sup>118</sup>Sn)<sup>235</sup>Np, E=801 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -, (fragment)( fragment) $\gamma$ -coin, and angular distribution of  $\gamma$ -ray yields for <sup>116</sup>Sn, <sup>117</sup>Sn and <sup>118</sup>Sn using the Gammasphere and CHICO arrays. <sup>235</sup>Np; deduced levels, J,  $\pi$ , bands, angular momentum, moment of inertia as functions of rotational frequency, configurations. <sup>116,117,118</sup>Sn; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with cranked shell-model calculations and with alignment plots for <sup>237</sup>Np and <sup>241</sup>Am. JOUR PRVCA 81 014312

2010LI07      NUCLEAR REACTIONS <sup>112,114,116,118,120,122,124</sup>Sn( $\alpha$ ,  $\alpha'$ ), E=386 MeV; measured E $\alpha$ , I $\alpha$ , excitation energies,  $\sigma(\theta)$ ,  $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309

KEYNUMBERS AND KEYWORDS

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**A=118 (continued)**

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| 2010T006          |          | NUCLEAR REACTIONS $^{119}\text{Sn}(^3\text{He}, ^3\text{He})$ , ( $^3\text{He}, \alpha$ ), $E=38$ MeV; measured $E\gamma$ , particle- $\gamma$ coin. $^{118,119}\text{Sn}$ ; deduced $\gamma$ -ray strength functions, level densities, parity asymmetry functions, collective enhancement factors, and spin distributions. Oslo method. Combinatorial BCS model. JOUR PRVCA 81 064311     |
| 2010WA05          |          | NUCLEAR REACTIONS $^{116}\text{Cd}(^7\text{Li}, 4\text{np})$ , $E=50$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{118}\text{Sn}$ ; deduced levels, $J$ , $\pi$ , bands and configurations. Comparison with Total Routhian surface (TRS) calculations and fixed constrained triaxial relativistic mean-field (RMF) theory. JOUR PRVCA 81 017301                          |
| $^{118}\text{Sb}$ | 2010FUZZ | NUCLEAR REACTIONS $^9\text{Be}$ , $^{23}\text{Na}$ , $^{25}\text{Mg}$ , $^{42}\text{Ca}$ , $^{46}\text{Ti}$ , $^{50}\text{Cr}$ , $^{54}\text{Fe}$ , $^{58}\text{Ni}$ , $^{118}\text{Sn}(^3\text{He}, \text{t})$ , $E=140$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , reaction products; deduced $d\sigma(E)$ ; GT strength. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.1, P39 |
| $^{118}\text{Te}$ | 2010MAZU | NUCLEAR REACTIONS $^{119,129}\text{Te}(\gamma, \text{n})$ , $E=12, 14, 16, 18$ MeV bremsstrahlung; measured isomeric ratio yields with activation method. $^{119m,g,129m,g}\text{Te}$ ; deduced $Y_m / Y_g$ . CONF St.-Petersburg, P157, Mazur   |

**A=119**

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| $^{119}\text{Tc}$ | 20100H02 | NUCLEAR REACTIONS $\text{Be}$ , $\text{Pb}(^{238}\text{U}, \text{F})$ , $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20-56$ , $A=52-152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{119}\text{Ag}$ | 2010BR02 | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313   |
| $^{119}\text{Sn}$ | 2008NIZU | NUCLEAR REACTIONS $^{116,117,118,119}\text{Sn}$ , $^{155,156,157,158}\text{Gd}(\text{n}, \gamma)$ , $E=10-100$ keV, $550$ keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc, P615   |
|                   | 2010F010 | NUCLEAR REACTIONS $^{173}\text{Yb}(^{24}\text{Mg}, \text{X})$ , $E=134.5$ MeV; $^{176}\text{Yb}(^{23}\text{Na}, \text{X})$ , $E=129$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin following fission of compound nuclei using Gammasphere array. $^{96,97}\text{Nb}$ ; deduced levels, $J$ , $\pi$ , high-spin states. Comparison with level systematics of $^{95,96}\text{Zr}$ . Systematics of first $2+$ states in $N=48-58$ , even- $A$ Zr nuclei; first $13 / 2+$ states in $A=89-97$ Nb nuclei, and low-spin states in $^{87}\text{Nb}$ and $^{101}\text{Nb}$ . $^{93,94,95}\text{Nb}$ , $^{117,118,119}\text{Sn}$ ; measured $E\gamma$ , $I\gamma$ . JOUR PRVCA 82 044306   |

KEYNUMBERS AND KEYWORDS

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**A=119 (continued)**

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| 2010RE01          | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301 |
| 2010T006          | NUCLEAR REACTIONS $^{119}\text{Sn}(^3\text{He}, ^3\text{He})$ , ( $^3\text{He}, \alpha$ ), E=38 MeV; measured $E\gamma$ , particle- $\gamma$ coin. $^{118,119}\text{Sn}$ ; deduced $\gamma$ -ray strength functions, level densities, parity asymmetry functions, collective enhancement factors, and spin distributions. Oslo method. Combinatorial BCS model. JOUR PRVCA 81 064311   |
| $^{119}\text{Sb}$ | 2008GUZL NUCLEAR REACTIONS $^{121}\text{Sb}(p, t)$ , E=21 MeV; measured reaction products; deduced $\sigma(\theta)$ for transitions to $^{119}\text{Sb}$ levels. Comparison with DWBA calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P371,Guazzoni   |

**A=120**

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| $^{120}\text{Tc}$ | 2010OH02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{120}\text{Ag}$ | 2010BR02 ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |
| $^{120}\text{Cd}$ | 2010BR02 ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |
| $^{120}\text{Sn}$ | 2008NIZU NUCLEAR REACTIONS $^{116,117,118,119}\text{Sn}$ , $^{155,156,157,158}\text{Gd}(n, \gamma)$ , E=10-100 keV, 550 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615  |

**A=120 (continued)**

- 2008STZP NUCLEAR REACTIONS  $^{120}\text{Sn}(^{67}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{120}\text{Sn}(^{69}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{120}\text{Sn}(^{71}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{120}\text{Sn}(^{73}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{104}\text{Pd}(^{67}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{104}\text{Pd}(^{69}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{104}\text{Pd}(^{71}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon;  $^{104}\text{Pd}(^{73}\text{Cu}, ^{67}\text{Cu}')$ ,  $E=2.99$  MeV / nucleon; measured Cu Coulomb excitation  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ ,  $B(E2)$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671
- 2008VOZY NUCLEAR REACTIONS  $^{112,116,120,124}\text{Sn}(\gamma, \gamma')$ ,  $E=5.5-9.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ;  $^{112,116,120,124}\text{Sn}$ ; deduced  $B(E1)$  strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P335,Von Neumann-
- 2009AC02 NUCLEAR REACTIONS  $^{120}\text{Sn}(^{11}\text{Be}, ^{11}\text{Be})$ ,  $(^{11}\text{Be}, ^{11}\text{Be}')$ ,  $E=2.91$  MeV / nucleon; measured particle spectra using DSSSD array at REX-ISOLDE; deduced  $\sigma(\theta)$ . Comparison with coupled-channel calculations. Secondary radioactive halo nuclide beam. JOUR ZAANE 42 461
- 2009PEZY NUCLEAR REACTIONS  $^{96}\text{Mo}(^{88}\text{Sr}, 2n)$ ,  $E=351$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced decay curves of yrast transitions, quadrupole moments;  $^{107}\text{Ag}(^{184}\text{Hg}, ^{184}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon;  $^{120}\text{Sn}(^{184}\text{Hg}, ^{184}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon;  $^{107}\text{Ag}(^{186}\text{Hg}, ^{186}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon;  $^{120}\text{Sn}(^{186}\text{Hg}, ^{186}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon;  $^{107}\text{Ag}(^{188}\text{Hg}, ^{188}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon;  $^{120}\text{Sn}(^{188}\text{Hg}, ^{188}\text{Hg}')$ ,  $E=2.85$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin. Plunger device with JUROGAM + RITU + GREAT, matrix E2 elements to be extracted. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P414,Petts
- 2009WAZW NUCLEAR REACTIONS  $^{77}\text{Se}$ ,  $^{99}\text{Ru}$ ,  $^{101}\text{Ru}$ ,  $^{123}\text{Te}(n, \alpha)$ ,  $E=\text{thermal}$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $E$ ,  $J$ ,  $\pi$ . CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P84,Wagemans
- 2010DE34 NUCLEAR REACTIONS  $^{120}\text{Sn}(^6\text{He}, ^6\text{He})$ ,  $(^6\text{He}, X)$ ,  $E=17.4, 18.04, 19.8, 20.5$  MeV, [ $^6\text{He}$  beam from  $^9\text{Be}(^7\text{Li}, ^6\text{He})$ ,  $E=2-26$  MeV]; measured  $\alpha$  and  $^6\text{He}$  spectra,  $\sigma(E, \theta)$ . DWBA analysis. Comparison with breakup and neutron transfer calculations using continuum-discretized coupled-channels (CDCC) approach. JOUR PRVCA 82 034602
- 2010LI07 NUCLEAR REACTIONS  $^{112,114,116,118,120,122,124}\text{Sn}(\alpha, \alpha')$ ,  $E=386$  MeV; measured  $E\alpha$ ,  $I\alpha$ , excitation energies,  $\sigma(\theta)$ ,  $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309

KEYNUMBERS AND KEYWORDS

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**A=120 (continued)**

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| 2010RE01          | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301 |
| $^{120}\text{Sb}$ | 2010ZH20 NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{121}\text{Sb}(\gamma, \text{n})$ , E<10.5 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced isomeric yields and ratios. JOUR BRSPPE 74 829   |
| $^{120}\text{Te}$ | 2008WEZW RADIOACTIVITY $^{66}\text{Ge}$ ; $^{68}\text{Ge}$ ; $^{94}\text{Zr}$ ; $^{120}\text{Te}$ ; measured decay products; deduced B(E2), $T_{1/2}$ ; $^{140}\text{Nd}$ ; measured $E_\gamma$ , $I_\gamma(\theta)$ , $\gamma\gamma(\theta)$ -coin; deduced E, J, $\pi$ , mixed-symmetry states. Results on CD only. CONF E.Lansing (NS2008),P23,Werner   |
|                   | 2010ZU02 RADIOACTIVITY $^{106,114,116}\text{Cd}$ , $^{120,128,130}\text{Te}$ , $^{64}\text{Zn}(2\beta)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 267   |
| $^{120}\text{Xe}$ | 2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E_\gamma$ , $I_\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |

**A=121**

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| $^{121}\text{Ru}$ | 20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-B}\rho$ method. JOUR JUPSA 79 073201 |
| $^{121}\text{Pd}$ | 2009ST28 NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, \text{X})^{121}\text{Pd}$ / $^{123}\text{Ag}$ / $^{125}\text{Ag}$ , E=120 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin. $^{121,123,125}\text{Ag}$ ; deduced levels, J, $\pi$ , $T_{1/2}$ . Comparison with shell model and systematics. JOUR ZAANE 42 407   |
|                   | 2009ST28 RADIOACTIVITY $^{121}\text{Pd}(\beta^-)$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , E=120 MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin. $^{121}\text{Ag}$ ; deduced levels, J, $\pi$ . Comparison with shell model and systematics. JOUR ZAANE 42 407  |
| $^{121}\text{Ag}$ | 2009ST28 NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, \text{X})^{121}\text{Pd}$ / $^{123}\text{Ag}$ / $^{125}\text{Ag}$ , E=120 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin. $^{121,123,125}\text{Ag}$ ; deduced levels, J, $\pi$ , $T_{1/2}$ . Comparison with shell model and systematics. JOUR ZAANE 42 407   |



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**A=121 (continued)**

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| 2009ST28          |          | RADIOACTIVITY $^{121}\text{Pd}(\beta^-)$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , E=120 MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma^-$ , (fragment) $\gamma$ -coin. $^{121}\text{Ag}$ ; deduced levels, J, $\pi$ . Comparison with shell model and systematics. JOUR ZAANE 42 407   |
| 2010BR02          |          | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |
| $^{121}\text{In}$ | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301 |
|                   | 2010RE01 | RADIOACTIVITY $^{121m,123m}\text{In}(\text{IT})$ , $^{125m}\text{Sb}(\text{IT})$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin; deduced levels, J, $\pi$ . $^{117}\text{Cd}$ , $^{128}\text{Sb}(\beta^-)$ ; measured $E_\gamma$ . JOUR PRVCA 81 014301   |
| $^{121}\text{Sn}$ | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301 |
| $^{121}\text{Te}$ | 2008DIZT | NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130,132}\text{Ba}$ , $^{156}\text{Dy}(\text{n}, \gamma)$ , E $\approx$ 25 keV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Compared with MACS30 recommended values. CONF Nice (Nucl Data for Sci and Technol) Proc,P575   |
|                   | 2009ZH37 | NUCLEAR REACTIONS $^{93}\text{Nb}$ , $^{122,128}\text{Te}(\text{n}, 2\text{n})^{92m}\text{Nb}$ / $^{121}\text{Te}$ / $^{121m}\text{Te}$ / $^{127}\text{Te}$ / $^{127m}\text{Te}$ / , E=14 MeV; measured $E_\gamma$ , $I_\gamma$ and $\sigma$ by activation method relative to that for $^{93}\text{Nb}(\text{n}, 2\text{n})^{92m}\text{Nb}$ reaction; analyzed $\sigma$ for $^{121g}\text{Te}$ and $^{127g}\text{Te}$ by considering effects of population of isomeric states. JOUR PRVCA 80 054615  |
|                   | 2010DI01 | NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130}\text{Ba}$ , $^{132}\text{Ba}$ , $^{156}\text{Dy}$ , $^{197}\text{Au}(\text{n}, \gamma)$ , E=0-120 keV; measured $E_\gamma$ , $I_\gamma$ , Maxwellian-averaged $\sigma$ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801  |

KEYNUMBERS AND KEYWORDS

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**A=121 (continued)**

- <sup>121</sup>I      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>121</sup>Xe      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069

**A=122**

- <sup>122</sup>Ru      2010OH02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>122</sup>Ag      2010BR02      ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag, <sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to <sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength  $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313
- <sup>122</sup>Cd      2008KRZV      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, n)<sup>55</sup>Ti, E=high; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; <sup>122,124,126</sup>Cd, <sup>138,140,142,144</sup>Xe( $\gamma$ ,  $\gamma'$ ); measured Coulomb excitation E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- 2010BR02      ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup>Ag, <sup>114,120,122,123,124,126,128</sup>Cd; measured cyclotron frequencies relative to <sup>133</sup>Cs, and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength  $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313

A=122 (*continued*)

- <sup>122</sup>In 2009MAZL RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ )[from U(p, f), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>63</sup>Fe E, J,  $\pi$ , isomer decay, T<sub>1/2</sub>, B(M1); <sup>122</sup>In( $\beta^-$ )[from <sup>238</sup>U(p, f), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>122</sup>Sn E, J,  $\pi$ , T<sub>1/2</sub>, B(E2), ground-state multiplet. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P502,Mach
- <sup>122</sup>Sn 2008STZP NUCLEAR REACTIONS <sup>120</sup>Sn(<sup>67</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>69</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>71</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>120</sup>Sn(<sup>73</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>67</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>69</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>71</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; <sup>104</sup>Pd(<sup>73</sup>Cu, <sup>67</sup>Cu'), E=2.99 MeV / nucleon; measured Cu Coulomb excitation E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin; deduced E, J,  $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671
- 2009MAZL RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ )[from U(p, f), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>63</sup>Fe E, J,  $\pi$ , isomer decay, T<sub>1/2</sub>, B(M1); <sup>122</sup>In( $\beta^-$ )[from <sup>238</sup>U(p, f), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , t( $\gamma$ ),  $\gamma\gamma$ -coin., E $\beta$ ,  $\beta\gamma$ -coin.; deduced <sup>122</sup>Sn E, J,  $\pi$ , T<sub>1/2</sub>, B(E2), ground-state multiplet. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P502,Mach
- 2010LI07 NUCLEAR REACTIONS <sup>112,114,116,118,120,122,124</sup>Sn( $\alpha$ ,  $\alpha'$ ), E=386 MeV; measured E $\alpha$ , I $\alpha$ , excitation energies,  $\sigma(\theta)$ ,  $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309
- 2010RE01 NUCLEAR REACTIONS <sup>232</sup>Th(<sup>6</sup>Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup>Br, <sup>93</sup>Rb, <sup>95,98,99</sup>Y, <sup>99</sup>Mo, <sup>100</sup>Tc, <sup>121,123</sup>In, <sup>119,120,121,122,123,124,125,126,127</sup>Sn, <sup>123,125,127,131</sup>Sb, <sup>131</sup>I, <sup>132</sup>Te, <sup>134,136</sup>Xe; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- <sup>122</sup>Te 2009KI25 RADIOACTIVITY <sup>122</sup>I, <sup>140</sup>Pr, <sup>142</sup>Pm(EC); measured T<sub>1/2</sub> of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c
- 2010KU02 RADIOACTIVITY <sup>205</sup>Hg, <sup>207</sup>Tl( $\beta^-$ ) [from Be(<sup>208</sup>Pb, X), E=750 MeV / nucleon]; <sup>140</sup>Pr, <sup>142</sup>Pm, <sup>122</sup>I(EC) [from Be(<sup>152</sup>Sm, X), E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525
- 2010MI04 NUCLEAR REACTIONS <sup>119</sup>Sn( $\alpha$ , n $\gamma$ )<sup>122</sup>Te, E=15 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives by Doppler shift attenuation method. <sup>122</sup>Te; deduced levels, J,  $\pi$ , transition strengths with Monte Carlo simulations. JOUR PRVCA 81 034314

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**A=122 (continued)**

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| $^{122}\text{I}$  | 2009KI25 | RADIOACTIVITY $^{122}\text{I}$ , $^{140}\text{Pr}$ , $^{142}\text{Pm}(\text{EC})$ ; measured $T_{1/2}$ of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c  |
|                   | 2010KU02 | RADIOACTIVITY $^{205}\text{Hg}$ , $^{207}\text{Tl}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, \text{X})$ , $E=750$ MeV / nucleon]; $^{140}\text{Pr}$ , $^{142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ [from $\text{Be}(^{152}\text{Sm}, \text{X})$ , $E=508$ MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525  |
| $^{122}\text{Xe}$ | 2008TAZI | NUCLEAR REACTIONS $\text{Pb}(\text{p}, \text{x})$ , $E=1, 1.4$ GeV; $\text{Bi}(\text{p}, \text{x})$ , $E=1, 1.4$ GeV; measured $E\gamma$ , $I\gamma$ , $A(\text{particle})$ using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{122}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})$ $^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , $E=1$ GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{122}\text{Ba}$ | 2009BIZY | NUCLEAR REACTIONS $^{108}\text{Cd}(^{16}\text{O}, 2\text{n})$ , $E=64, 65$ MeV; $^{112}\text{Sn}(^{13}\text{C}, 2\text{n})$ , $E=59$ MeV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ ; deduced $E$ , $J$ , $\pi$ , rotational bands, yrast $\gamma$ -cascade, $B(E2)$ , half-life of individual states; calculated $B(E2)$ using X(5) model and SU(3) limit of IBA. Compared together. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P352,Bizzeti  |

**A=123**

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| $^{123}\text{Ru}$ | 20100H02 | NUCLEAR REACTIONS $\text{Be}$ , $\text{Pb}(^{238}\text{U}, \text{F})$ , $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20-56$ , $A=52-152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{123}\text{Rh}$ | 20100H02 | NUCLEAR REACTIONS $\text{Be}$ , $\text{Pb}(^{238}\text{U}, \text{F})$ , $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20-56$ , $A=52-152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |

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**A=123 (continued)**

<sup>123</sup> Ag	2009ST28	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>136</sup> Xe, X) <sup>121</sup> Pd / <sup>123</sup> Ag / <sup>125</sup> Ag, E=120 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin. <sup>121,123,125</sup> Ag; deduced levels, J, $\pi$ , T <sub>1/2</sub> . Comparison with shell model and systematics. JOUR ZAANE 42 407
	2010BR02	ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup> Ag, <sup>114,120,122,123,124,126,128</sup> Cd; measured cyclotron frequencies relative to <sup>133</sup> Cs, and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313
	2010LI02	ATOMIC MASSES <sup>85,86</sup> As, <sup>89</sup> Se, <sup>123</sup> Ag, <sup>138</sup> Te, <sup>140,141</sup> I, <sup>143</sup> Xe, <sup>221,222</sup> At, <sup>223</sup> Rn, <sup>228</sup> Fr, <sup>231</sup> Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
<sup>123</sup> Cd	2010BR02	ATOMIC MASSES <sup>112,114,115,116,117,118,119,120,121,122,123,124</sup> Ag, <sup>114,120,122,123,124,126,128</sup> Cd; measured cyclotron frequencies relative to <sup>133</sup> Cs, and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313
<sup>123</sup> In	2010RE01	NUCLEAR REACTIONS <sup>232</sup> Th( <sup>6</sup> Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup> Br, <sup>93</sup> Rb, <sup>95,98,99</sup> Y, <sup>99</sup> Mo, <sup>100</sup> Tc, <sup>121,123</sup> In, <sup>119,120,121,122,123,124,125,126,127</sup> Sn, <sup>123,125,127,131</sup> Sb, <sup>131</sup> I, <sup>132</sup> Te, <sup>134,136</sup> Xe; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
	2010RE01	RADIOACTIVITY <sup>121m,123m</sup> In(IT), <sup>125m</sup> Sb(IT); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin; deduced levels, J, $\pi$ . <sup>117</sup> Cd, <sup>128</sup> Sb( $\beta^-$ ); measured E $\gamma$ . JOUR PRVCA 81 014301
<sup>123</sup> Sn	2010RE01	NUCLEAR REACTIONS <sup>232</sup> Th( <sup>6</sup> Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup> Br, <sup>93</sup> Rb, <sup>95,98,99</sup> Y, <sup>99</sup> Mo, <sup>100</sup> Tc, <sup>121,123</sup> In, <sup>119,120,121,122,123,124,125,126,127</sup> Sn, <sup>123,125,127,131</sup> Sb, <sup>131</sup> I, <sup>132</sup> Te, <sup>134,136</sup> Xe; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
<sup>123</sup> Sb	2010RE01	NUCLEAR REACTIONS <sup>232</sup> Th( <sup>6</sup> Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup> Br, <sup>93</sup> Rb, <sup>95,98,99</sup> Y, <sup>99</sup> Mo, <sup>100</sup> Tc, <sup>121,123</sup> In, <sup>119,120,121,122,123,124,125,126,127</sup> Sn, <sup>123,125,127,131</sup> Sb, <sup>131</sup> I, <sup>132</sup> Te, <sup>134,136</sup> Xe; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301

KEYNUMBERS AND KEYWORDS

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**A=123 (continued)**

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| $^{123}\text{Xe}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{123}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(p, X)^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{123}\text{Ba}$ | 2009BIZY | NUCLEAR REACTIONS $^{108}\text{Cd}(^{16}\text{O}, 2n)$ , E=64, 65 MeV; $^{112}\text{Sn}(^{13}\text{C}, 2n)$ , E=59 MeV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ ; deduced E, J, $\pi$ , rotational bands, yrast $\gamma$ -cascade, B(E2), half-life of individual states; calculated B(E2) using X(5) model and SU(3) limit of IBA. Compared together. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P352,Bizzeti  |

**A=124**

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| $^{124}\text{Ru}$ | 2010OH02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{124}\text{Rh}$ | 2010OH02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{124}\text{Ag}$ | 2010BR02 | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |

KEYNUMBERS AND KEYWORDS

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**A=124 (continued)**

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| $^{124}\text{Cd}$ | 2008KRZV | NUCLEAR REACTIONS $^9\text{Be}(^{56}\text{Ti}, n)^{55}\text{Ti}$ , E=high; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; $^{122,124,126}\text{Cd}$ , $^{138,140,142,144}\text{Xe}(\gamma, \gamma')$ ; measured Coulomb excitation $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96   |
|                   | 2010BR02 | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313  |
| $^{124}\text{Sn}$ | 2008BOZK | NUCLEAR REACTIONS $^{112,124}\text{Sn}(\gamma, \gamma')$ ; measured levels, J, $\pi$ ; evaluated energy weighted sum rule. Monoenergetic linearly polarized beam. THESIS M Boswell, University of North Carolina   |
|                   | 2008STZP | NUCLEAR REACTIONS $^{120}\text{Sn}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; measured Cu Coulomb excitation $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced E, J, $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671 |
|                   | 2008VOZV | NUCLEAR REACTIONS $^{112,116,120,124}\text{Sn}(\gamma, \gamma')$ , E=5.5-9.5 MeV; measured $E\gamma$ , $I\gamma$ ; $^{112,116,120,124}\text{Sn}$ ; deduced B(E1) strength distributions. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P335,Von Neumann-  |
|                   | 2009ENZY | NUCLEAR REACTIONS $^{124}\text{Sn}$ , $^{140}\text{Ce}(\alpha, \alpha'\gamma)$ , E=136 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin.; deduced $\sigma$ , B(E1). Compared to $(\gamma, \gamma')$ reactions. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P357,Endres  |
|                   | 2009KIZU | RADIOACTIVITY $^{124}\text{Sn}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced limits on $T_{1/2}$ . REPT TUNL-XLVIII,P30,Kidd   |
|                   | 2010EN01 | NUCLEAR REACTIONS $^{124}\text{Sn}(\alpha, \alpha')$ , E=136 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin.; deduced pigmy resonance $\sigma(\theta)$ , B(E1), two groups of states. Comparison with calculations. JOUR PRLTA 105 212503  |
|                   | 2010LI07 | NUCLEAR REACTIONS $^{112,114,116,118,120,122,124}\text{Sn}(\alpha, \alpha')$ , E=386 MeV; measured $E\alpha$ , $I\alpha$ , excitation energies, $\sigma(\theta)$ , $\sigma$ , angular distributions, differential cross section as function of excitation energy; deduced strengths distributions, widths and EWSR for isoscalar giant monopole resonance (ISGMR), isoscalar giant-dipole resonance (ISGDR), isoscalar giant quadrupole resonance (ISGQR), and high-energy octupole resonance (HEOR). Comparisons with theoretical predictions. JOUR PRVCA 81 034309   |
|                   | 2010PAZZ | NUCLEAR REACTIONS $^{58}\text{Ni}$ , $^{124}\text{Sn}$ , $^{208}\text{Pb}(d, d')$ , E=3.5-7.3 MeV; measured $\sigma(\theta)$ . Tandem. CONF St.-Petersburg,P136,Pavlenko   |

KEYNUMBERS AND KEYWORDS

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A=124 (*continued*)

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| 2010RE01          | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301  |
| $^{124}\text{Sb}$ | 2010BE18 RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced $\gamma$ -ray and x-rays intensities per decay, branching ratio. JOUR ARISE 68 2026  |
|                   | 2010PA07 RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ [from $\text{Sb}(\text{n}, \text{X})$ ]; measured $E_\gamma$ , $I_\gamma$ , $E_e$ , $I_e$ ; deduced precise value for $T_{1/2}$ . JOUR ARISE 68 1555  |
| $^{124}\text{Te}$ | 2009CH59 NUCLEAR REACTIONS $^{125}\text{Te}$ , $^{126}\text{Te}(^{58}\text{Ni}, ^{58}\text{Ni}')$ , E=195 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, $\gamma$ (particle)-coin, $\gamma\gamma(\theta)$ , and g factor. $^{125}\text{Te}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison with shell model and weak-coupling model calculations. $^{124}\text{Te}$ , $^{128}\text{Te}$ , $^{130}\text{Te}(^{58}\text{Ni}, ^{58}\text{Ni}')$ , E=195 MeV; measured $E_\gamma$ . JOUR PRVCA 80 054301   |
|                   | 2009KIZU RADIOACTIVITY $^{124}\text{Sn}(2\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin; deduced limits on $T_{1/2}$ . REPT TUNL-XLVIII,P30,Kidd   |
|                   | 2010BE18 RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced $\gamma$ -ray and x-rays intensities per decay, branching ratio. JOUR ARISE 68 2026  |
|                   | 2010PA07 RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ [from $\text{Sb}(\text{n}, \text{X})$ ]; measured $E_\gamma$ , $I_\gamma$ , $E_e$ , $I_e$ ; deduced precise value for $T_{1/2}$ . JOUR ARISE 68 1555  |
| $^{124}\text{I}$  | 2008TAZI NUCLEAR REACTIONS $\text{Pb}(\text{p}, \text{x})$ , E=1, 1.4 GeV; $\text{Bi}(\text{p}, \text{x})$ , E=1, 1.4 GeV; measured $E_\gamma$ , $I_\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |
| $^{124}\text{Xe}$ | 2008WIZP NUCLEAR REACTIONS $^{80}\text{Se}(^{48}\text{Ca}, 4\text{n})$ , E=207 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin; deduced high-spin states, superdeformation, hyperdeformation. Abstract only. CONF E.Lansing (NS2008),P193,Wilson   |
|                   | 2010RA05 NUCLEAR REACTIONS $^{12}\text{C}(^{124}\text{Xe}, ^{124}\text{Xe}')$ , E=394 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin using DSA technique and the Gammasphere array. $^{124}\text{Xe}$ ; deduced levels, J, $\pi$ , B(E2). Comparison with interacting boson model. JOUR PYLBB 683 11  |
| $^{124}\text{Cs}$ | 2009PA49 NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})$ $^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |



KEYNUMBERS AND KEYWORDS

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A=125

$^{125}\text{Rh}$	20100H02	NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E-TOF-}\beta\text{p}$ method. JOUR JUPSA 79 073201
$^{125}\text{Pd}$	2008MOZQ	NUCLEAR REACTIONS $^9\text{Be}$ ( $^{238}\text{U}$ , f), E=345 MeV / nucleon; measured A / Z ratio; deduced Z=46 yields distribution, evidence for $^{125}\text{Pd}$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P145
$^{125}\text{Ag}$	2009ST28	NUCLEAR REACTIONS $^9\text{Be}$ ( $^{136}\text{Xe}$ , X) $^{121}\text{Pd}$ / $^{123}\text{Ag}$ / $^{125}\text{Ag}$ , E=120 MeV / nucleon; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin. $^{121,123,125}\text{Ag}$ ; deduced levels, J, $\pi$ , $\text{T}_{1/2}$ . Comparison with shell model and systematics. JOUR ZAANE 42 407
$^{125}\text{Sn}$	2010RE01	NUCLEAR REACTIONS $^{232}\text{Th}$ ( $^6\text{Li}$ , X), E=45 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
$^{125}\text{Sb}$	2010RE01	NUCLEAR REACTIONS $^{232}\text{Th}$ ( $^6\text{Li}$ , X), E=45 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
	2010RE01	RADIOACTIVITY $^{121m,123m}\text{In}$ (IT), $^{125m}\text{Sb}$ (IT); measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -coin; deduced levels, J, $\pi$ . $^{117}\text{Cd}$ , $^{128}\text{Sb}$ ( $\beta^-$ ); measured $\text{E}\gamma$ . JOUR PRVCA 81 014301
$^{125}\text{Te}$	2009CH59	NUCLEAR REACTIONS $^{125}\text{Te}$ , $^{126}\text{Te}$ ( $^{58}\text{Ni}$ , $^{58}\text{Ni}'$ ), E=195 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -, $\gamma$ (particle)-coin, $\gamma\gamma(\theta)$ , and g factor. $^{125}\text{Te}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison with shell model and weak-coupling model calculations. $^{124}\text{Te}$ , $^{128}\text{Te}$ , $^{130}\text{Te}$ ( $^{58}\text{Ni}$ , $^{58}\text{Ni}'$ ), E=195 MeV; measured $\text{E}\gamma$ . JOUR PRVCA 80 054301
	2009CH59	NUCLEAR MOMENTS $^{125}\text{Te}$ ; measured g-factors of excited states using transient field technique in Coulomb excitation. $^{126}\text{Te}$ ; used as a reference. Comparison with shell model and weak-coupling model calculations. JOUR PRVCA 80 054301
	2010WI10	NUCLEAR REACTIONS $^{125}\text{Te}$ ( $\gamma$ , $\gamma$ ), E not given; measured X-rays, time spectra; deduced nuclear resonance energy and $\text{T}_{1/2}$ . JOUR EULEE 91 62001

KEYNUMBERS AND KEYWORDS

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**A=125 (continued)**

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| $^{125}\text{I}$  | 2010SI21 | NUCLEAR REACTIONS $^{82}\text{Se}(^{48}\text{Ca}, 4\text{np})$ , E=205 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ ratios using Gammasphere array. $^{125}\text{I}$ ; deduced levels, J, $\pi$ , bands, highly-deformed bands, multipolarities, and configurations. Comparison with cranked Nilsson-Strutinsky (CNS) calculations. JOUR PRVCA 82 034301  |
| $^{125}\text{Xe}$ | 2008TAZI | NUCLEAR REACTIONS $\text{Pb}(p, x)$ , E=1, 1.4 GeV; $\text{Bi}(p, x)$ , E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{125}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(p, X)^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |

**A=126**

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| $^{126}\text{Rh}$ | 20100H02 | NUCLEAR REACTIONS $\text{Be}$ , $\text{Pb}(^{238}\text{U}, \text{F})$ , E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{126}\text{Cd}$ | 2008KRZV | NUCLEAR REACTIONS $^9\text{Be}(^{56}\text{Ti}, n)^{55}\text{Ti}$ , E=high; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; $^{122,124,126}\text{Cd}$ , $^{138,140,142,144}\text{Xe}(\gamma, \gamma')$ ; measured Coulomb excitation $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96  |
|                   | 2010BR02 | ATOMIC MASSES $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ , $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313   |

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**A=126 (continued)**

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| $^{126}\text{Sn}$ | 2008STZP | NUCLEAR REACTIONS $^{120}\text{Sn}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{120}\text{Sn}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{67}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{69}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{71}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; $^{104}\text{Pd}(^{73}\text{Cu}, ^{67}\text{Cu}')$ , E=2.99 MeV / nucleon; measured Cu Coulomb excitation $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced E, J, $\pi$ , B(E2). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P671 |
|                   | 2010FE02 | RADIOACTIVITY $^{126}\text{Sn}$ , $^{126}\text{Sb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced absolute and relative photon emission, energy levels, $K\beta / K\alpha$ intensity ratio for Sb x-rays. JOUR ARISE 68 1571   |
|                   | 2010IL01 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{F})$ , E=750 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, half-lives. $^{126}\text{Sn}$ ; deduced levels, J, $\pi$ , g factor. Comparison with shell model calculations and adjacent isotope systematics. JOUR PYLBB 687 305   |
|                   | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301   |
| $^{126}\text{Sb}$ | 2010FE02 | RADIOACTIVITY $^{126}\text{Sn}$ , $^{126}\text{Sb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced absolute and relative photon emission, energy levels, $K\beta / K\alpha$ intensity ratio for Sb x-rays. JOUR ARISE 68 1571   |
| $^{126}\text{Te}$ | 2009CH59 | NUCLEAR REACTIONS $^{125}\text{Te}$ , $^{126}\text{Te}(^{58}\text{Ni}, ^{58}\text{Ni}')$ , E=195 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma$ (particle)-coin, $\gamma\gamma(\theta)$ , and g factor. $^{125}\text{Te}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison with shell model and weak-coupling model calculations. $^{124}\text{Te}$ , $^{128}\text{Te}$ , $^{130}\text{Te}(^{58}\text{Ni}, ^{58}\text{Ni}')$ , E=195 MeV; measured $E\gamma$ . JOUR PRVCA 80 054301  |
|                   | 2009CH59 | NUCLEAR MOMENTS $^{125}\text{Te}$ ; measured g-factors of excited states using transient field technique in Coulomb excitation. $^{126}\text{Te}$ ; used as a reference. Comparison with shell model and weak-coupling model calculations. JOUR PRVCA 80 054301  |
|                   | 2010BL06 | NUCLEAR REACTIONS $^{128,130}\text{Te}(p, t)$ , E=23 MeV; measured triton spectra, $\sigma(\theta)$ . $^{126,128}\text{Te}$ ; deduced levels, L-transfers. Split-pole magnetic spectrograph and gas-filled focal plane detector. Comparison with data for $^{128,130}\text{Te}(^3\text{He}, n)$ reactions. Relevance to calculation of the matrix element for neutrinoless double- $\beta$ decay of $^{130}\text{Te}$ . JOUR PRVCA 82 027308   |
|                   | 2010BLZY | NUCLEAR REACTIONS $^{128,130}\text{Te}(p, t)$ , E=23 MeV; measured triton spectra, $\sigma(\theta)$ . $^{126,128}\text{Te}$ ; deduced levels. Split-pole magnetic spectrograph and gas-filled focal plane detector. Comparison with previous data. PREPRINT Bloxham,6/22/2010  |
|                   | 2010FE02 | RADIOACTIVITY $^{126}\text{Sn}$ , $^{126}\text{Sb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced absolute and relative photon emission, energy levels, $K\beta / K\alpha$ intensity ratio for Sb x-rays. JOUR ARISE 68 1571   |

KEYNUMBERS AND KEYWORDS

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**A=126 (continued)**

- <sup>126</sup>I      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>126</sup>Cs      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=127**

- <sup>127</sup>Pd      2010H02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>127</sup>Cd      2010NA17      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X), E=750 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and isomer half-life by  $\gamma(t)$ . <sup>127</sup>Cd; deduced levels, J,  $\pi$ , multipolarity and transition strengths. Comparison with large-scale shell-model calculations. JOUR PRVCA 82 034323
- <sup>127</sup>Sn      2010AT03      NUCLEAR REACTIONS Be(<sup>136</sup>Xe, X)<sup>127</sup>Sn / <sup>128</sup>Sn, E=600 MeV / nucleon; measured reaction products, Larmor precession, E $\gamma$ , I $\gamma$ ; deduced g factors for Sn isomers, J,  $\pi$ . Comparison with shell model calculations. JOUR EULEE 91 42001
- 2010RE01      NUCLEAR REACTIONS <sup>232</sup>Th(<sup>6</sup>Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup>Br, <sup>93</sup>Rb, <sup>95,98,99</sup>Y, <sup>99</sup>Mo, <sup>100</sup>Tc, <sup>121,123</sup>In, <sup>119,120,121,122,123,124,125,126,127</sup>Sn, <sup>123,125,127,131</sup>Sb, <sup>131</sup>I, <sup>132</sup>Te, <sup>134,136</sup>Xe; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- <sup>127</sup>Sb      2009WA24      NUCLEAR REACTIONS <sup>176</sup>Yb, <sup>176</sup>Lu, <sup>186</sup>W(<sup>136</sup>Xe, X)<sup>127</sup>Sb, E=6.0-6.2 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$ , T<sub>1/2</sub> using Gammasphere array. <sup>127</sup>Sb; deduced levels, J,  $\pi$ , T<sub>1/2</sub>,  $\delta$ , B(E2), B(E3), B(M2), internal conversion coefficients. Comparison with shell model and systematics for adjacent isotopes. JOUR ZAANE 42 163

KEYNUMBERS AND KEYWORDS

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**A=127 (continued)**

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| 2010RE01          | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301  |
| $^{127}\text{Te}$ | 2009ZH37 NUCLEAR REACTIONS $^{93}\text{Nb}$ , $^{122,128}\text{Te}(n, 2n)^{92m}\text{Nb}$ / $^{121}\text{Te}$ / $^{121m}\text{Te}$ / $^{127}\text{Te}$ / $^{127m}\text{Te}$ / , E=14 MeV; measured $E_\gamma$ , $I_\gamma$ and $\sigma$ by activation method relative to that for $^{93}\text{Nb}(n, 2n)^{92m}\text{Nb}$ reaction; analyzed $\sigma$ for $^{121g}\text{Te}$ and $^{127g}\text{Te}$ by considering effects of population of isomeric states. JOUR PRVCA 80 054615  |
| $^{127}\text{I}$  | 2009MA70 NUCLEAR REACTIONS $^{13}\text{C}(\alpha, \gamma)$ , $(\alpha, n)$ , E=2.000, 2.270 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma(\theta)$ , $E_n$ , $\sigma$ , and $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data. $^{27}\text{Al}$ , $^{127}\text{I}$ , $^{206,207,208}\text{Pb}(n, n')$ , E=3.5-4.4 MeV; $^{127}\text{I}(n, \gamma)$ , E=10.1-11.3 MeV; measured $E_\gamma$ . JOUR PRVCA 80 065802   |
| $^{127}\text{Xe}$ | 2008TAZI NUCLEAR REACTIONS $\text{Pb}(p, x)$ , E=1, 1.4 GeV; $\text{Bi}(p, x)$ , E=1, 1.4 GeV; measured $E_\gamma$ , $I_\gamma$ , $A(\text{particle})$ using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{127}\text{Cs}$ | 2009PA49 NUCLEAR REACTIONS $^{238}\text{U}(p, \text{X})^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{127}\text{Ce}$ | 2009PA40 NUCLEAR REACTIONS $^{100}\text{Mo}(^{32}\text{S}, 5n)$ , $(^{34}\text{S}, 5n)$ , E=155 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin using Euroball and Eurogam arrays. $^{127,129}\text{Ce}$ ; deduced levels, J, $\pi$ , bands, and configurations. Comparison with cranked Woods-Saxon calculations, and with systematics of light odd-N cerium nuclei. JOUR PRVCA 80 054312   |

## A=128

- $^{128}\text{Pd}$  20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{128}\text{Cd}$  2010BR02 ATOMIC MASSES  $^{112,114,115,116,117,118,119,120,121,122,123,124}\text{Ag}$ ,  $^{114,120,122,123,124,126,128}\text{Cd}$ ; measured cyclotron frequencies relative to  $^{133}\text{Cs}$ , and mass excesses using ISOLTRAP Penning trap spectrometer; deduced excitation energies of the isomers; evaluated mass excesses; two-neutron separate energies, and proton-neutron interaction strength  $\delta V_{pn}$ . Comparison with previous data and AME-2003. JOUR PRVCA 81 034313
- $^{128}\text{Sn}$  2010AT03 NUCLEAR REACTIONS Be( $^{136}\text{Xe}$ , X) $^{127}\text{Sn}$  /  $^{128}\text{Sn}$ , E=600 MeV / nucleon; measured reaction products, Larmor precession,  $E\gamma$ ,  $I\gamma$ ; deduced g factors for Sn isomers, J,  $\pi$ . Comparison with shell model calculations. JOUR EULEE 91 42001
- $^{128}\text{Sb}$  2010RE01 RADIOACTIVITY  $^{121m,123m}\text{In(IT)}$ ,  $^{125m}\text{Sb(IT)}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced levels, J,  $\pi$ .  $^{117}\text{Cd}$ ,  $^{128}\text{Sb}(\beta^-)$ ; measured  $E\gamma$ . JOUR PRVCA 81 014301
- $^{128}\text{Te}$  2009CH59 NUCLEAR REACTIONS  $^{125}\text{Te}$ ,  $^{126}\text{Te}(^{58}\text{Ni}$ ,  $^{58}\text{Ni}'$ ), E=195 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\gamma$ (particle)-coin,  $\gamma\gamma(\theta)$ , and g factor.  $^{125}\text{Te}$ ; deduced levels, J,  $\pi$ , mixing ratios. Comparison with shell model and weak-coupling model calculations.  $^{124}\text{Te}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(^{58}\text{Ni}$ ,  $^{58}\text{Ni}'$ ), E=195 MeV; measured  $E\gamma$ . JOUR PRVCA 80 054301
- 2010BL06 NUCLEAR REACTIONS  $^{128,130}\text{Te}(p, t)$ , E=23 MeV; measured triton spectra,  $\sigma(\theta)$ .  $^{126,128}\text{Te}$ ; deduced levels, L-transfers. Split-pole magnetic spectrograph and gas-filled focal plane detector. Comparison with data for  $^{128,130}\text{Te}(^3\text{He}, n)$  reactions. Relevance to calculation of the matrix element for neutrinoless double- $\beta$  decay of  $^{130}\text{Te}$ . JOUR PRVCA 82 027308
- 2010BLZY NUCLEAR REACTIONS  $^{128,130}\text{Te}(p, t)$ , E=23 MeV; measured triton spectra,  $\sigma(\theta)$ .  $^{126,128}\text{Te}$ ; deduced levels. Split-pole magnetic spectrograph and gas-filled focal plane detector. Comparison with previous data. PREPRINT Bloxham,6/22/2010
- 2010DA03 NUCLEAR REACTIONS  $^{238}\text{U}(^{18}\text{O}, \text{F})\text{Sr}$  / Zr / Mo / Ru / Pd / Cd / Sn / Te / Xe / Ba / Ce / Nd / Sm, E=100 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, fission fragment mass distribution and yields of Sr (A=90-96), Zr (A=96-102), Mo (A=98-108), Ru (A=104-112), Pd (A=108-116), Cd (A=114-122), Sn (A=116-128), Te (A=124-134), Xe (A=130-138), Ba (A=136-144), Ce (A=142-148), Nd (A=146-152) and Sm (A=150-158) using INGA array. Discussed effect of nuclear structure in the dynamical evolution of fissioning nucleus.  $^{128}\text{Te}$ ; measured  $E\gamma$  and  $\gamma\gamma$ -coin. JOUR PRVCA 81 014311

KEYNUMBERS AND KEYWORDS

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**A=128 (continued)**

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|                   | 2010MAZU | NUCLEAR REACTIONS $^{119,129}\text{Te}(\gamma, n)$ , E=12, 14, 16, 18 MeV<br>bremsstrahlung; measured isomeric ratio yields with activation method.<br>$^{119m,g,129m,g}\text{Te}$ ; deduced $Y_m / Y_g$ . CONF St.-Petersburg,P157,Mazur  |
|                   | 2010RE01 | RADIOACTIVITY $^{121m,123m}\text{In(IT)}$ , $^{125m}\text{Sb(IT)}$ ; measured $E\gamma$ , $I\gamma$ ,<br>$\gamma\gamma$ -coin; deduced levels, J, $\pi$ . $^{117}\text{Cd}$ , $^{128}\text{Sb}(\beta^-)$ ; measured $E\gamma$ . JOUR<br>PRVCA 81 014301  |
|                   | 2010ZU02 | RADIOACTIVITY $^{106,114,116}\text{Cd}$ , $^{120,128,130}\text{Te}$ , $^{64}\text{Zn}(2\beta)$ ; measured $Ee$ ,<br>Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 267  |
| $^{128}\text{I}$  | 2008RAZZ | NUCLEAR REACTIONS $^{129}\text{I}(\gamma, n)$ , E $\approx$ 0-30 MeV; measured $E\gamma$ , $I\gamma$ ;<br>deduced $^{128}\text{I}$ $\sigma$ , yield. CONF Nice (Nucl Data for Sci and Technol)<br>Proc,P529  |
|                   | 2009MA70 | NUCLEAR REACTIONS $^{13}\text{C}(\alpha, \gamma)$ , $(\alpha, n)$ , E=2.000, 2.270 MeV;<br>measured $E\gamma$ , $I\gamma$ , $\gamma(\theta)$ , $E_n$ , $\sigma$ , and $\sigma(\theta)$ ; deduced astrophysical S<br>factors. Comparison with previous experimental data. $^{27}\text{Al}$ , $^{127}\text{I}$ ,<br>$^{206,207,208}\text{Pb}(n, n')$ , E=3.5-4.4 MeV; $^{127}\text{I}(n, \gamma)$ , E=10.1-11.3 MeV;<br>measured $E\gamma$ . JOUR PRVCA 80 065802  |
|                   | 2009ZH51 | NUCLEAR REACTIONS $^{124}\text{Sn}(^7\text{Li}, 3n)^{128}\text{I}$ , E=25, 28, 42 MeV;<br>measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, J,<br>$\pi$ , energies, $\sigma$ . JOUR CPCHC 33 s01 179  |
|                   | 2010WA27 | NUCLEAR REACTIONS $^{124}\text{Sn}(^7\text{Li}, 3n)$ , E=28, 32 MeV; measured<br>$E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high spin states, J, $\pi$ , level scheme. JOUR<br>CPLEE 27 082701  |
| $^{128}\text{Xe}$ | 2009C024 | NUCLEAR REACTIONS $^{12}\text{C}(^{128}\text{Xe}, ^{128}\text{Xe}')$ , E=404 MeV; measured<br>$E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and $\gamma$ -ray yields in Coulomb excitation using<br>Gammasphere array. $^{128}\text{Xe}$ ; deduced levels, J, $\pi$ , B(E2), and B(E2)<br>ratios. Tested validity of E(5) symmetry. JOUR PRVCA 80 061304   |
| $^{128}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(p, X)^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} /$<br>$^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} /$<br>$^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} /$<br>$^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} /$<br>$^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} /$<br>$^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and<br>spallation yields from different mass targets; deduced effect of target<br>size. JOUR ZAANE 42 495 |

**A=129**

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| $^{129}\text{Sb}$ | 2010VI01 | NUCLEAR REACTIONS $^{235}\text{U}$ , $^{239}\text{Pu}(\gamma, F)^{90}\text{Rb} / ^{129}\text{Sb} / ^{130}\text{Sb} /$<br>$^{132}\text{Sb} / ^{131}\text{Te} / ^{133}\text{Te} / ^{134}\text{I} / ^{136}\text{I} / ^{135}\text{Xe}$ , E=9.6, 9.8 MeV; measured<br>reaction products; deduced isomeric yields, angular momenta. JOUR<br>BRSPE 74 500 |
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KEYNUMBERS AND KEYWORDS

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**A=129 (continued)**

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| $^{129}\text{Xe}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{129}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(p, X)^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010TA12 | NUCLEAR REACTIONS Ba(p, X) $^{132}\text{La} / ^{135}\text{La} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{136}\text{Cs}$ , E=30-70 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869   |
|                   | 2010WA01 | NUCLEAR REACTIONS $^{124}\text{Sn}(^{11}\text{B}, 6n)$ , E=65 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced energy levels, negative and positive-parity bands, B(E2), transition quadrupole moments. Doppler shift attenuation method (DSAM). JOUR CPLEE 27 022101   |
| $^{129}\text{Ce}$ | 2009LI67 | NUCLEAR REACTIONS $^{96}\text{Mo}(^{37}\text{Cl}, 3np)^{129}\text{Ce}$ , E=155 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced negative-parity bands, $T_{1/2}$ , quadrupole moments. JOUR CPCHC 33 s01 212  |
|                   | 2009PA40 | NUCLEAR REACTIONS $^{100}\text{Mo}(^{32}\text{S}, 5n)$ , ( $^{34}\text{S}, 5n)$ , E=155 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Euroball and Eurogam arrays. $^{127,129}\text{Ce}$ ; deduced levels, J, $\pi$ , bands, and configurations. Comparison with cranked Woods-Saxon calculations, and with systematics of light odd-N cerium nuclei. JOUR PRVCA 80 054312   |

**A=130**

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| $^{130}\text{Cd}$ | 2008PFZZ | NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, x)^{130}\text{Cd}$ , E=750 MeV / nucleon; $^9\text{Be}(^{238}\text{U}, f)$ , E=650 MeV / nucleon; measured Z(fragment), A(fragment), $E\gamma$ , $I\gamma(t)$ , (fragment) $\gamma$ -coin; $^{130}\text{Cd}$ deduced E, J, $\pi$ , isomer decay $T_{1/2}$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P557 |
| $^{130}\text{Sb}$ | 2010VI01 | NUCLEAR REACTIONS $^{235}\text{U}$ , $^{239}\text{Pu}(\gamma, F)^{90}\text{Rb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{132}\text{Sb} / ^{131}\text{Te} / ^{133}\text{Te} / ^{134}\text{I} / ^{136}\text{I} / ^{135}\text{Xe}$ , E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500  |



KEYNUMBERS AND KEYWORDS

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**A=130 (continued)**

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| $^{130}\text{Te}$ | 2009CH59  | NUCLEAR REACTIONS $^{125}\text{Te}$ , $^{126}\text{Te}(^{58}\text{Ni}$ , $^{58}\text{Ni}'$ ), E=195 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma(\text{particle})$ -coin, $\gamma\gamma(\theta)$ , and g factor. $^{125}\text{Te}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison with shell model and weak-coupling model calculations. $^{124}\text{Te}$ , $^{128}\text{Te}$ , $^{130}\text{Te}(^{58}\text{Ni}$ , $^{58}\text{Ni}'$ ), E=195 MeV; measured $E\gamma$ . JOUR PRVCA 80 054301  |
|                   | 2009DA25  | RADIOACTIVITY $^{48}\text{Ca}$ , $^{82}\text{Se}$ , $^{96}\text{Zr}$ , $^{100}\text{Mo}$ , $^{116}\text{Cd}$ , $^{130}\text{Te}$ , $^{150}\text{Nd}(2\beta)$ ; measured $T_{1/2}$ for zero / two-neutrino $2\beta$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c  |
|                   | 2010SI06  | RADIOACTIVITY $^{100}\text{Mo}$ , $^{82}\text{Se}$ , $^{116}\text{Cd}$ , $^{150}\text{Nd}$ , $^{96}\text{Zr}$ , $^{48}\text{Ca}$ , $^{130}\text{Te}(2\beta^-)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 270   |
|                   | 2010ZU02  | RADIOACTIVITY $^{106,114,116}\text{Cd}$ , $^{120,128,130}\text{Te}$ , $^{64}\text{Zn}(2\beta)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 267   |
| $^{130}\text{I}$  | 2008BEZL  | NUCLEAR REACTIONS $^{129}\text{I}(n, \gamma)$ , E=thermal; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , branching isomer / ground state. CONF Nice (Nucl Data for Sci and Technol) Proc,P631   |
|                   | 2008BEZL  | RADIOACTIVITY $^{130}\text{I}(\beta^-)$ [from $^{129}\text{I}(n, \gamma)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced decay constant isomer, ground state. CONF Nice (Nucl Data for Sci and Technol) Proc,P631  |
| $^{130}\text{Xe}$ | 2008BEZL  | RADIOACTIVITY $^{130}\text{I}(\beta^-)$ [from $^{129}\text{I}(n, \gamma)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced decay constant isomer, ground state. CONF Nice (Nucl Data for Sci and Technol) Proc,P631  |
|                   | 2008LEZK  | NUCLEAR REACTIONS $\text{Mg}(p, ^3\text{He})$ , E=14.7-1600 MeV; $\text{Al}(p, ^3\text{He})$ , E=41.5-397 MeV; $\text{Si}(p, ^3\text{He})$ , E=31.3-1600 MeV; $\text{Pb}(p, ^3\text{He})$ , E=44.2-2595 MeV; $\text{Bi}(p, ^3\text{He})$ , E=102-2589 MeV; $\text{Bi}(p, \alpha)$ , E=102-2589 MeV; $\text{Bi}(p, x)^{82}\text{Kr}$ , E=102-2589 MeV; $\text{Bi}(p, x)^{85}\text{Kr}$ , E=102-2589 MeV; $\text{Bi}(p, x)^{130}\text{Xe}$ , E=102-2589 MeV; $\text{Bi}(p, x)^{131}\text{Xe}$ , E=102-2589 MeV; measured He, Kr, Xe using cryogenic traps; deduced He, Kr, Xe $\sigma$ ; calculated $\sigma$ using INCL4 / ABLA code. Compared to other measurements of similar kind done by the same group. CONF Nice (Nucl Data for Sci and Technol) Proc,P1061 |
|                   | 2009BEZP  | RADIOACTIVITY $^{130}\text{Cs}(\beta^+)$ [from $^{126}\text{Te}(^7\text{Li}, 3n)$ ]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma(\theta)$ -coin.; deduced mixing ratio. Compared with earlier calculations of the same authors using Nuclear Pair Shell Model. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P567,Bettermann  |
|                   | 2010C009  | NUCLEAR REACTIONS $^{12}\text{C}(^{130}\text{Xe}$ , $^{130}\text{Xe}'$ ), E=409 MeV; $^{12}\text{C}(^{132}\text{Xe}$ , $^{132}\text{Xe}'$ ), E=414 MeV; measured $E\gamma$ , $I\gamma$ , and $\sigma$ using Gammasphere array. $^{130}\text{Xe}$ , $^{132}\text{Xe}$ ; deduced J, $\pi$ , B(E2), B(M1), and one-phonon mixed symmetry 2+ states. Projectile Coulomb excitation. Systematics of level energies and B(M1) strengths of one-phonon mixed symmetry states in even-even $^{124-134}\text{Xe}$ nuclei. JOUR PRVCA 82 024317   |
| 2010SI06          | RADIOACTIVITY $^{100}\text{Mo}$ , $^{82}\text{Se}$ , $^{116}\text{Cd}$ , $^{150}\text{Nd}$ , $^{96}\text{Zr}$ , $^{48}\text{Ca}$ , $^{130}\text{Te}(2\beta^-)$ ; measured Ee, Ie; deduced $T_{1/2}$ . JOUR PPNPD 64 270 |   |
| $^{130}\text{Cs}$ | 2009BEZP  | RADIOACTIVITY $^{130}\text{Cs}(\beta^+)$ [from $^{126}\text{Te}(^7\text{Li}, 3n)$ ]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma(\theta)$ -coin.; deduced mixing ratio. Compared with earlier calculations of the same authors using Nuclear Pair Shell Model. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P567,Bettermann  |

KEYNUMBERS AND KEYWORDS

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**A=130 (continued)**

- 2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2009WA32 NUCLEAR REACTIONS  $^{124}\text{Sn}(^{11}\text{B}, 5\text{n})^{130}\text{Cs}$ , E=65 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, B(E2), B(M1), yrast and chiral bands. JOUR CPCHC 33 s01 173

**A=131**

- $^{131}\text{In}$  2009G040 NUCLEAR REACTIONS  $\text{Be}(^{136}\text{Xe}, \text{X})^{131}\text{In}$ , E=750 MeV / nucleon;  $\text{Be}(^{238}\text{U}, \text{X})^{131}\text{In}$ , E=750 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced high-spin isomer  $T_{1/2}$ , B(E1), B(E2), B(M1) limits, J,  $\pi$ , level scheme. Shell model calculations, RISIND-FRS setup. JOUR PYLBB 672 313
- $^{131}\text{Sn}$  2008CIZZ NUCLEAR REACTIONS  $^2\text{H}(^{82}\text{Ge}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon;  $^2\text{H}(^{84}\text{Se}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon;  $^2\text{H}(^{130}\text{Sn}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon;  $^2\text{H}(^{132}\text{Sn}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon;  $^2\text{H}(^{134}\text{Te}, \text{p})$ , E $\approx$ 4-5 MeV / nucleon; measured  $E\text{p}$ ,  $I\text{p}(\theta)$ ; deduced Q-values, E, J,  $\pi$ . Compared with NNDC tables. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P580
- $^{131}\text{Sb}$  2010RE01 NUCLEAR REACTIONS  $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors.  $^{88}\text{Br}$ ,  $^{93}\text{Rb}$ ,  $^{95,98,99}\text{Y}$ ,  $^{99}\text{Mo}$ ,  $^{100}\text{Tc}$ ,  $^{121,123}\text{In}$ ,  $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ ,  $^{123,125,127,131}\text{Sb}$ ,  $^{131}\text{I}$ ,  $^{132}\text{Te}$ ,  $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301
- $^{131}\text{Te}$  2010VI01 NUCLEAR REACTIONS  $^{235}\text{U}$ ,  $^{239}\text{Pu}(\gamma, \text{F})^{90}\text{Rb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{132}\text{Sb} / ^{131}\text{Te} / ^{133}\text{Te} / ^{134}\text{I} / ^{136}\text{I} / ^{135}\text{Xe}$ , E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500
- $^{131}\text{I}$  2010RE01 NUCLEAR REACTIONS  $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors.  $^{88}\text{Br}$ ,  $^{93}\text{Rb}$ ,  $^{95,98,99}\text{Y}$ ,  $^{99}\text{Mo}$ ,  $^{100}\text{Tc}$ ,  $^{121,123}\text{In}$ ,  $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ ,  $^{123,125,127,131}\text{Sb}$ ,  $^{131}\text{I}$ ,  $^{132}\text{Te}$ ,  $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301

**A=131 (continued)**

- <sup>131</sup>Xe      2008LEZK      NUCLEAR REACTIONS Mg(p, <sup>3</sup>He), E=14.7-1600 MeV; Al(p, <sup>3</sup>He), E=41.5-397 MeV; Si(p, <sup>3</sup>He), E=31.3-1600 MeV; Pb(p, <sup>3</sup>He), E=44.2-2595 MeV; Bi(p, <sup>3</sup>He), E=102-2589 MeV; Bi(p, α), E=102-2589 MeV; Bi(p, x)<sup>82</sup>Kr, E=102-2589 MeV; Bi(p, x)<sup>85</sup>Kr, E=102-2589 MeV; Bi(p, x)<sup>130</sup>Xe, E=102-2589 MeV; Bi(p, x)<sup>131</sup>Xe, E=102-2589 MeV; measured He, Kr, Xe using cryogenic traps; deduced He, Kr, Xe σ; calculated σ using INCL4 / ABLA code. Compared to other measurements of similar kind done by the same group. CONF Nice (Nucl Data for Sci and Technol) Proc,P1061
- 2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured Eγ, Iγ, A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>131</sup>Ba      2008DIZT      NUCLEAR REACTIONS <sup>102</sup>Pd, <sup>120</sup>Te, <sup>130,132</sup>Ba, <sup>156</sup>Dy(n, γ), E≈25 keV; measured Eγ, Iγ; deduced σ. Compared with MACS30 recommended values. CONF Nice (Nucl Data for Sci and Technol) Proc,P575
- 2010DI01      NUCLEAR REACTIONS <sup>102</sup>Pd, <sup>120</sup>Te, <sup>130</sup>Ba, <sup>132</sup>Ba, <sup>156</sup>Dy, <sup>197</sup>Au(n, γ), E=0-120 keV; measured Eγ, Iγ, Maxwellian-averaged σ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801
- 2010SI04      NUCLEAR REACTIONS <sup>124</sup>Sn(<sup>16</sup>O, X)<sup>133</sup>Ce / <sup>134</sup>Ce / <sup>135</sup>Ce / <sup>133</sup>La / <sup>135</sup>La / <sup>131</sup>Ba / <sup>132</sup>Ba / <sup>133</sup>Ba / <sup>128,130,133</sup>Xe / <sup>131</sup>Cs / <sup>127</sup>I, E=6.3 MeV / nucleon; measured Eγ, Iγ; deduced spin distributions of evaporation residues formed in xn, pxn, αxn, αpxn and 2αxn reaction channels. JOUR PRVCA 81 027602
- 2010TA12      NUCLEAR REACTIONS Ba(p, X)<sup>132</sup>La / <sup>135</sup>La / <sup>131</sup>Ba / <sup>133</sup>Ba / <sup>135</sup>Ba / <sup>129</sup>Cs / <sup>132</sup>Cs / <sup>134</sup>Cs / <sup>136</sup>Cs, E=30-70 MeV; measured Eγ, Iγ; deduced σ, integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869

**A=132**

- <sup>132</sup>Sn      2008KOYY      RADIOACTIVITY <sup>17</sup>Ne; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; <sup>38</sup>Ca, <sup>26</sup>Al, <sup>80</sup>Zn, <sup>81</sup>Zn, <sup>132</sup>Sn, <sup>134</sup>Sn; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in <sup>17</sup>Ne spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska

KEYNUMBERS AND KEYWORDS

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**A=132 (continued)**

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|                   | 2010J003 | NUCLEAR REACTIONS $^2\text{H}(^{132}\text{Sn}, \text{p})^{133}\text{Sn}$ , E=630 MeV; measured $E_p$ , $I_p$ ; $^{132}\text{Sn}$ ; deduced proton $\sigma(\theta)$ , Q-value spectrum, properties of single-particle states in $^{133}\text{Sn}$ , magic nature of $^{132}\text{Sn}$ , spectroscopic factors and configurations . DWBA and FRESCO calculations, U(p, F) fission secondary beams. JOUR NATUA 465 454   |
| $^{132}\text{Sb}$ | 2010VI01 | NUCLEAR REACTIONS $^{235}\text{U}$ , $^{239}\text{Pu}(\gamma, \text{F})^{90}\text{Rb}$ / $^{129}\text{Sb}$ / $^{130}\text{Sb}$ / $^{132}\text{Sb}$ / $^{131}\text{Te}$ / $^{133}\text{Te}$ / $^{134}\text{I}$ / $^{136}\text{I}$ / $^{135}\text{Xe}$ , E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPPE 74 500   |
| $^{132}\text{Te}$ | 2010AD13 | NUCLEAR REACTIONS $^{232}\text{Th}(\text{n}, \gamma)$ , $(\text{n}, 2\text{n})$ , $(\text{n}, \text{F})^{99}\text{Mo}$ , $^{235,238}\text{U}(\text{n}, \gamma)$ , $(\text{n}, \text{F})^{99}\text{Mo}$ / $^{132}\text{Te}$ / $^{133}\text{I}$ / $^{135}\text{I}$ / $^{135}\text{Xe}$ / $^{140}\text{Ba}$ / $^{143}\text{Ce}$ , E=thermal-1000 MeV [from $^{208}\text{Pb}(\text{d}, \text{X})$ , E=1.6 GeV spallation source]; measured $E_\gamma$ , $I_\gamma$ using HPGe detectors; deduced $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159   |
|                   | 2010RE01 | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , E=45 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301  |
| $^{132}\text{Xe}$ | 2008JAZU | NUCLEAR REACTIONS $^{130}\text{Te}(^9\text{Be}, \text{X})$ , E=35-44 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin. $^{134,135,136}\text{Ba}$ , $^{132}\text{Xe}$ deduced $\sigma$ ; $^{132}\text{Xe}$ deduced levels, J, $\pi$ ; $^{132}\text{Xe}$ calculated levels, J, $\pi$ using E(5) symmetry. Results on CD only. CONF E.Lansing (NS2008),P123,Jain   |
|                   | 2010C009 | NUCLEAR REACTIONS $^{12}\text{C}(^{130}\text{Xe}, ^{130}\text{Xe}')$ , E=409 MeV; $^{12}\text{C}(^{132}\text{Xe}, ^{132}\text{Xe}')$ , E=414 MeV; measured $E_\gamma$ , $I_\gamma$ , and $\sigma$ using Gammasphere array. $^{130}\text{Xe}$ , $^{132}\text{Xe}$ ; deduced J, $\pi$ , B(E2), B(M1), and one-phonon mixed symmetry 2+ states. Projectile Coulomb excitation. Systematics of level energies and B(M1) strengths of one-phonon mixed symmetry states in even-even $^{124-134}\text{Xe}$ nuclei. JOUR PRVCA 82 024317   |
| $^{132}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010RA09 | NUCLEAR REACTIONS $^{89}\text{Y}$ , $^{90}\text{Zr}$ , $^{93}\text{Nb}$ , $^{133}\text{Cs}$ , $^{197}\text{Au}(\gamma, \text{n})$ , $^{99}\text{Tc}(\gamma, 3\text{n})$ , E<32 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ and uncertainties. Bremsstrahlung photons. JOUR JNSTA 47 618  |
|                   | 2010TA12 | NUCLEAR REACTIONS $\text{Ba}(\text{p}, \text{X})^{132}\text{La}$ / $^{135}\text{La}$ / $^{131}\text{Ba}$ / $^{133}\text{Ba}$ / $^{135}\text{Ba}$ / $^{129}\text{Cs}$ / $^{132}\text{Cs}$ / $^{134}\text{Cs}$ / $^{136}\text{Cs}$ , E=30-70 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869   |

KEYNUMBERS AND KEYWORDS

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**A=132 (continued)**

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| $^{132}\text{Ba}$ | 2010PA02 | NUCLEAR REACTIONS $^{134,136}\text{Ba}(p, t)$ , $E=25$ MeV; measured $E(t)$ , $I(t)$ , $\sigma(\theta)$ using Q3D magnetic spectrometer. $^{132,134}\text{Ba}$ ; deduced levels, $J$ , $\pi$ , relative 2-n transfer intensities, transition probabilities. Comparison with distorted-wave Born approximation (DWBA) calculations. Discussed validity of U(5) and U(6) symmetries of the IBA model. JOUR PRVCA 81 014304   |
|                   | 2010SI04 | NUCLEAR REACTIONS $^{124}\text{Sn}(^{16}\text{O}, X)^{133}\text{Ce}$ / $^{134}\text{Ce}$ / $^{135}\text{Ce}$ / $^{133}\text{La}$ / $^{135}\text{La}$ / $^{131}\text{Ba}$ / $^{132}\text{Ba}$ / $^{133}\text{Ba}$ / $^{128,130,133}\text{Xe}$ / $^{131}\text{Cs}$ / $^{127}\text{I}$ , $E=6.3$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha$ xn, $\alpha$ pxn and $2\alpha$ xn reaction channels. JOUR PRVCA 81 027602 |
| $^{132}\text{La}$ | 2010TA12 | NUCLEAR REACTIONS $\text{Ba}(p, X)^{132}\text{La}$ / $^{135}\text{La}$ / $^{131}\text{Ba}$ / $^{133}\text{Ba}$ / $^{135}\text{Ba}$ / $^{129}\text{Cs}$ / $^{132}\text{Cs}$ / $^{134}\text{Cs}$ / $^{136}\text{Cs}$ , $E=30-70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869  |
| $^{132}\text{Ce}$ | 2008COZR | NUCLEAR REACTIONS $^{116}\text{Sn}(^{16}\text{O}, \gamma)$ , $E$ not given; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $\gamma$ multiplicity; calculated $\gamma$ multiplicity using BNV (Boltzmann-Nordheim-Vlasov). Abstract only. CONF E.Lansing (NS2008),P89,Corsi   |
|                   | 2009PE31 | NUCLEAR REACTIONS $^{120}\text{Sn}(^{16}\text{O}, 4n)$ , $E=80$ MeV; measured $E\gamma$ , $I\gamma$ , ce, $e\gamma$ -, $\gamma\gamma$ -coin, ICCs using OSIRIS-II array. $^{132}\text{Ce}$ ; deduced levels, $J$ , $\pi$ , B(E3), B(M2), multipolarities. JOUR ZAANE 42 379  |

**A=133**

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|-------------------|----------|--|
| $^{133}\text{Cd}$ | 20100H02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), $E=345$ MeV / nucleon; measured yields of fission fragments. $Z=20-56$ , $A=52-152$ ; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta E$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
| $^{133}\text{Sn}$ | 2008CIZZ | NUCLEAR REACTIONS $^2\text{H}(^{82}\text{Ge}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{84}\text{Se}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{130}\text{Sn}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{132}\text{Sn}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{134}\text{Te}, p)$ , $E\approx 4-5$ MeV / nucleon; measured $E_p$ , $I_p(\theta)$ ; deduced Q-values, $E$ , $J$ , $\pi$ . Compared with NNDC tables. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P580  |
|                   | 2010J003 | NUCLEAR REACTIONS $^2\text{H}(^{132}\text{Sn}, p)^{133}\text{Sn}$ , $E=630$ MeV; measured $E_p$ , $I_p$ ; $^{132}\text{Sn}$ ; deduced proton $\sigma(\theta)$ , Q-value spectrum, properties of single-particle states in $^{133}\text{Sn}$ , magic nature of $^{132}\text{Sn}$ , spectroscopic factors and configurations. DWBA and FRESCO calculations, U(p, F) fission secondary beams. JOUR NATUA 465 454  |
| $^{133}\text{Sb}$ | 2010SU11 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, F)^{133}\text{Sb}$ , $E=411$ MeV / nucleon; measured mass, survival time in FRS using IMS technique. $^{133}\text{Sb}$ ; deduced isomeric level energy, $T_{1/2}$ , $J$ , $\pi$ . JOUR PYLBB 688 294  |

KEYNUMBERS AND KEYWORDS

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**A=133 (continued)**

<sup>133</sup> Te	2010VI01	NUCLEAR REACTIONS <sup>235</sup> U, <sup>239</sup> Pu( $\gamma$ , F) <sup>90</sup> Rb / <sup>129</sup> Sb / <sup>130</sup> Sb / <sup>132</sup> Sb / <sup>131</sup> Te / <sup>133</sup> Te / <sup>134</sup> I / <sup>136</sup> I / <sup>135</sup> Xe, E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500
<sup>133</sup> I	2010AD13	NUCLEAR REACTIONS <sup>232</sup> Th(n, $\gamma$ ), (n, 2n), (n, F) <sup>99</sup> Mo, <sup>235,238</sup> U(n, $\gamma$ ), (n, F) <sup>99</sup> Mo / <sup>132</sup> Te / <sup>133</sup> I / <sup>135</sup> I / <sup>135</sup> Xe / <sup>140</sup> Ba / <sup>143</sup> Ce, E=thermal-1000 MeV [from <sup>208</sup> Pb(d, X), E=1.6 GeV spallation source]; measured E $\gamma$ , I $\gamma$ using HPGe detectors; deduced $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
<sup>133</sup> Xe	2008TAZI	NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup> Kr, <sup>111</sup> Cd, <sup>121,124,126</sup> I, <sup>120,121,122,123,125,127,129,131,133</sup> Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup> Hg, <sup>204,205,206,207,208,209,210</sup> At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
	2009SH42	NUCLEAR REACTIONS <sup>12</sup> C( <sup>238</sup> U, X), E=1.45 GeV; measured E $\gamma$ , I $\gamma$ using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup> Xe; deduced levels, J, $\pi$ . <sup>100</sup> Zr, <sup>106,107,108,109</sup> Ru, <sup>133</sup> Xe, <sup>138</sup> Xe; measured E $\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305
<sup>133</sup> Cs	2009WA33	NUCLEAR REACTIONS <sup>133</sup> Cs(e, e), (e, e'), E=120 MeV; measured $\sigma(\theta)$ . JOUR ZAANE 42 453
<sup>133</sup> Ba	2008DIZT	NUCLEAR REACTIONS <sup>102</sup> Pd, <sup>120</sup> Te, <sup>130,132</sup> Ba, <sup>156</sup> Dy(n, $\gamma$ ), E $\approx$ 25 keV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared with MACS30 recommended values. CONF Nice (Nucl Data for Sci and Technol) Proc,P575
	2010DI01	NUCLEAR REACTIONS <sup>102</sup> Pd, <sup>120</sup> Te, <sup>130</sup> Ba, <sup>132</sup> Ba, <sup>156</sup> Dy, <sup>197</sup> Au(n, $\gamma$ ), E=0-120 keV; measured E $\gamma$ , I $\gamma$ , Maxwellian-averaged $\sigma$ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801
	2010SI04	NUCLEAR REACTIONS <sup>124</sup> Sn( <sup>16</sup> O, X) <sup>133</sup> Ce / <sup>134</sup> Ce / <sup>135</sup> Ce / <sup>133</sup> La / <sup>135</sup> La / <sup>131</sup> Ba / <sup>132</sup> Ba / <sup>133</sup> Ba / <sup>128,130,133</sup> Xe / <sup>131</sup> Cs / <sup>127</sup> I, E=6.3 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha$ xn, $\alpha$ pxn and 2 $\alpha$ xn reaction channels. JOUR PRVCA 81 027602
	2010TA12	NUCLEAR REACTIONS Ba(p, X) <sup>132</sup> La / <sup>135</sup> La / <sup>131</sup> Ba / <sup>133</sup> Ba / <sup>135</sup> Ba / <sup>129</sup> Cs / <sup>132</sup> Cs / <sup>134</sup> Cs / <sup>136</sup> Cs, E=30-70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869
<sup>133</sup> La	2010SI04	NUCLEAR REACTIONS <sup>124</sup> Sn( <sup>16</sup> O, X) <sup>133</sup> Ce / <sup>134</sup> Ce / <sup>135</sup> Ce / <sup>133</sup> La / <sup>135</sup> La / <sup>131</sup> Ba / <sup>132</sup> Ba / <sup>133</sup> Ba / <sup>128,130,133</sup> Xe / <sup>131</sup> Cs / <sup>127</sup> I, E=6.3 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha$ xn, $\alpha$ pxn and 2 $\alpha$ xn reaction channels. JOUR PRVCA 81 027602

KEYNUMBERS AND KEYWORDS

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**A=133 (continued)**

<sup>133</sup>Ce      2010SI04      NUCLEAR REACTIONS <sup>124</sup>Sn(<sup>16</sup>O, X)<sup>133</sup>Ce / <sup>134</sup>Ce / <sup>135</sup>Ce / <sup>133</sup>La / <sup>135</sup>La / <sup>131</sup>Ba / <sup>132</sup>Ba / <sup>133</sup>Ba / <sup>128,130,133</sup>Xe / <sup>131</sup>Cs / <sup>127</sup>I, E=6.3 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn,  $\alpha$ xn,  $\alpha$ pxn and 2 $\alpha$ xn reaction channels. JOUR PRVCA 81 027602

**A=134**

<sup>134</sup>Sn      2008KOYY      RADIOACTIVITY <sup>17</sup>Ne; measured ToF versus field frequency; deduced isotope shift, mass mass excess, charge radius, halo nuclei; calculated mass excess, separation energy, proton, neutron density distribution using FMD; <sup>38</sup>Ca; <sup>26</sup>Al; <sup>80</sup>Zn; <sup>81</sup>Zn; <sup>132</sup>Sn; <sup>134</sup>Sn; measured ToF versus frequency detuning; deduced Q-value, mass excess. Neutrons in <sup>17</sup>Ne spherical, protons cluster-like form. Results on CD only. CONF E.Lansing (NS2008),P20,Kowalska

<sup>134</sup>Sb      2008MAZL      RADIOACTIVITY <sup>136</sup>Sn, <sup>136</sup>Sb, <sup>136</sup>Te( $\beta^-$ ); measured  $\beta$ -delayed neutron decay, E $\gamma$ , I $\gamma$ ; <sup>134,135</sup>Sb, <sup>136</sup>Te; deduced level energies, J,  $\pi$ , B(E $\lambda$ ), T<sub>1/2</sub>. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach

<sup>134</sup>I      2010VI01      NUCLEAR REACTIONS <sup>235</sup>U, <sup>239</sup>Pu( $\gamma$ , F)<sup>90</sup>Rb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>132</sup>Sb / <sup>131</sup>Te / <sup>133</sup>Te / <sup>134</sup>I / <sup>136</sup>I / <sup>135</sup>Xe, E=9.6, 9.8 MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500

<sup>134</sup>Xe      2008PIZW      NUCLEAR REACTIONS <sup>12</sup>C(<sup>134</sup>Xe, <sup>134</sup>Xe'), E=435 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; <sup>134</sup>Xe; deduced level energies, J,  $\pi$ , B(E2). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P325,Pietralla

                 2009SH42      NUCLEAR REACTIONS <sup>12</sup>C(<sup>238</sup>U, X), E=1.45 GeV; measured E $\gamma$ , I $\gamma$  using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup>Xe; deduced levels, J,  $\pi$ . <sup>100</sup>Zr, <sup>106,107,108,109</sup>Ru, <sup>133</sup>Xe, <sup>138</sup>Xe; measured E $\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305

                 2010RE01      NUCLEAR REACTIONS <sup>232</sup>Th(<sup>6</sup>Li, X), E=45 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$  $\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. <sup>88</sup>Br, <sup>93</sup>Rb, <sup>95,98,99</sup>Y, <sup>99</sup>Mo, <sup>100</sup>Tc, <sup>121,123</sup>In, <sup>119,120,121,122,123,124,125,126,127</sup>Sn, <sup>123,125,127,131</sup>Sb, <sup>131</sup>I, <sup>132</sup>Te, <sup>134,136</sup>Xe; measured isomer half-lives; deduced levels, J,  $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301

<sup>134</sup>Cs      2010TA12      NUCLEAR REACTIONS Ba(p, X)<sup>132</sup>La / <sup>135</sup>La / <sup>131</sup>Ba / <sup>133</sup>Ba / <sup>135</sup>Ba / <sup>129</sup>Cs / <sup>132</sup>Cs / <sup>134</sup>Cs / <sup>136</sup>Cs, E=30-70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869

<sup>134</sup>Ba      2008JAZU      NUCLEAR REACTIONS <sup>130</sup>Te(<sup>9</sup>Be, X), E=35-44 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$  $\gamma$ -coin. <sup>134,135,136</sup>Ba, <sup>132</sup>Xe deduced  $\sigma$ ; <sup>132</sup>Xe deduced levels, J,  $\pi$ ; <sup>132</sup>Xe calculated levels, J,  $\pi$  using E(5) symmetry. Results on CD only. CONF E.Lansing (NS2008),P123,Jain

KEYNUMBERS AND KEYWORDS

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**A=134 (continued)**

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| 2010PA02          |          | NUCLEAR REACTIONS $^{134,136}\text{Ba}(p, t)$ , $E=25$ MeV; measured $E(t)$ , $I(t)$ , $\sigma(\theta)$ using Q3D magnetic spectrometer. $^{132,134}\text{Ba}$ ; deduced levels, $J$ , $\pi$ , relative 2-n transfer intensities, transition probabilities. Comparison with distorted-wave Born approximation (DWBA) calculations. Discussed validity of U(5) and U(6) symmetries of the IBA model. JOUR PRVCA 81 014304   |
| $^{134}\text{Ce}$ | 2010SI04 | NUCLEAR REACTIONS $^{124}\text{Sn}(^{16}\text{O}, X)^{133}\text{Ce} / ^{134}\text{Ce} / ^{135}\text{Ce} / ^{133}\text{La} / ^{135}\text{La} / ^{131}\text{Ba} / ^{132}\text{Ba} / ^{133}\text{Ba} / ^{128,130,133}\text{Xe} / ^{131}\text{Cs} / ^{127}\text{I}$ , $E=6.3$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha$ xn, $\alpha$ pxn and $2\alpha$ xn reaction channels. JOUR PRVCA 81 027602 |
| $^{134}\text{Nd}$ | 2008LIZO | NUCLEAR REACTIONS $^{114}\text{Cd}(^{28}\text{Si}, 4n\alpha)$ , $E=155$ MeV; measured $E\gamma$ , $I\gamma(t)$ ; deduced high-spin states, $B(E2)$ ; calculated high-spin states, $B(E2)$ using IBM. Results on CD only. CONF E.Lansing (NS2008),P133,Lieder   |

**A=135**

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| $^{135}\text{Sb}$ | 2008MAZL | RADIOACTIVITY $^{136}\text{Sn}$ , $^{136}\text{Sb}$ , $^{136}\text{Te}(\beta^-)$ ; measured $\beta$ -delayed neutron decay, $E\gamma$ , $I\gamma$ ; $^{134,135}\text{Sb}$ , $^{136}\text{Te}$ ; deduced level energies, $J$ , $\pi$ , $B(E\lambda)$ , $T_{1/2}$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach   |
| $^{135}\text{Te}$ | 2008CIZZ | NUCLEAR REACTIONS $^2\text{H}(^{82}\text{Ge}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{84}\text{Se}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{130}\text{Sn}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{132}\text{Sn}, p)$ , $E\approx 4-5$ MeV / nucleon; $^2\text{H}(^{134}\text{Te}, p)$ , $E\approx 4-5$ MeV / nucleon; measured $E_p$ , $I_p(\theta)$ ; deduced Q-values, $E$ , $J$ , $\pi$ . Compared with NNDC tables. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P580              |
|                   | 2009CIZY | NUCLEAR REACTIONS $^2\text{H}(^{134}\text{Te}, p)$ , $E\approx 5$ MeV / nucleon; measured $E_p$ , $I_p$ , $\theta(p)$ ; deduced $\sigma(\theta)$ , excitation energy spectrum. Preliminary. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P463,Cizewski   |
|                   | 2010GA26 | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{243}\text{Am}$ , $^{238}\text{Cm}(\gamma, F)^{135}\text{Te} / ^{135}\text{I} / ^{135}\text{Xe}$ , $E<25$ MeV; measured fission products, $E\gamma$ , $I\gamma$ ; deduced fission fragment yields; calculated charge distribution and probabilities for $A=137$ . JOUR PPNLA 7 415  |
|                   | 2010LI03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{135}\text{Te}$ , $^{136}\text{I}$ , $^{137}\text{Xe}$ , $^{138}\text{Cs}$ ; deduced levels, $J$ , $\pi$ . Comparison with shell model calculations. JOUR PRVCA 81 014316  |
| $^{135}\text{I}$  | 2010AD13 | NUCLEAR REACTIONS $^{232}\text{Th}(n, \gamma)$ , $(n, 2n)$ , $(n, F)^{99}\text{Mo}$ , $^{235,238}\text{U}(n, \gamma)$ , $(n, F)^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ , $E=\text{thermal-1000 MeV}$ [from $^{208}\text{Pb}(d, X)$ , $E=1.6$ GeV spallation source]; measured $E\gamma$ , $I\gamma$ using HPGe detectors; deduced $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159 |



KEYNUMBERS AND KEYWORDS

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**A=135 (continued)**

	2010GA26	NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{243}\text{Am}$ , $^{238}\text{Cm}(\gamma, \text{F})^{135}\text{Te} / ^{135}\text{I} / ^{135}\text{Xe}$ , $E < 25$ MeV; measured fission products, $E\gamma$ , $I\gamma$ ; deduced fission fragment yields; calculated charge distribution and probabilities for $A=137$ . JOUR PPNLA 7 415
	2010TH02	RADIOACTIVITY $^{135}\text{I}$ , $^{135}\text{Xe}(\beta^-)$ [from $^{233}\text{U}(\gamma, \text{F})$ , $E=23.5$ MeV]; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced decay scheme, isomeric ratio of fission. JOUR JRNC 285 511
$^{135}\text{Xe}$	2010AD13	NUCLEAR REACTIONS $^{232}\text{Th}(\text{n}, \gamma)$ , $(\text{n}, 2\text{n})$ , $(\text{n}, \text{F})^{99}\text{Mo}$ , $^{235,238}\text{U}(\text{n}, \gamma)$ , $(\text{n}, \text{F})^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ , $E=\text{thermal-1000 MeV}$ [from $^{208}\text{Pb}(\text{d}, \text{X})$ , $E=1.6$ GeV spallation source]; measured $E\gamma$ , $I\gamma$ using HPGe detectors; deduced $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
	2010GA26	NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{243}\text{Am}$ , $^{238}\text{Cm}(\gamma, \text{F})^{135}\text{Te} / ^{135}\text{I} / ^{135}\text{Xe}$ , $E < 25$ MeV; measured fission products, $E\gamma$ , $I\gamma$ ; deduced fission fragment yields; calculated charge distribution and probabilities for $A=137$ . JOUR PPNLA 7 415
	2010TH02	RADIOACTIVITY $^{135}\text{I}$ , $^{135}\text{Xe}(\beta^-)$ [from $^{233}\text{U}(\gamma, \text{F})$ , $E=23.5$ MeV]; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced decay scheme, isomeric ratio of fission. JOUR JRNC 285 511
	2010VI01	NUCLEAR REACTIONS $^{235}\text{U}$ , $^{239}\text{Pu}(\gamma, \text{F})^{90}\text{Rb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{132}\text{Sb} / ^{131}\text{Te} / ^{133}\text{Te} / ^{134}\text{I} / ^{136}\text{I} / ^{135}\text{Xe}$ , $E=9.6, 9.8$ MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500
$^{135}\text{Cs}$	2010GA21	NUCLEAR REACTIONS $^{237}\text{Np}(\gamma, \text{F})^{135}\text{Cs}$ , $^{238}\text{U}(\gamma, \text{F})^{140}\text{La}$ , $^{65}\text{Cu}(\gamma, \text{n})^{64}\text{Cu}$ , $E < 25$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced isomer yield ratios. Comparison with calculation. JOUR PANUE 73 1477
	2010TH02	RADIOACTIVITY $^{135}\text{I}$ , $^{135}\text{Xe}(\beta^-)$ [from $^{233}\text{U}(\gamma, \text{F})$ , $E=23.5$ MeV]; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced decay scheme, isomeric ratio of fission. JOUR JRNC 285 511
$^{135}\text{Ba}$	2008JAZU	NUCLEAR REACTIONS $^{130}\text{Te}(\text{}^9\text{Be}, \text{X})$ , $E=35-44$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{134,135,136}\text{Ba}$ , $^{132}\text{Xe}$ deduced $\sigma$ ; $^{132}\text{Xe}$ deduced levels, $J$ , $\pi$ ; $^{132}\text{Xe}$ calculated levels, $J$ , $\pi$ using $E(5)$ symmetry. Results on CD only. CONF E.Lansing (NS2008),P123,Jain
	2010KU15	NUCLEAR REACTIONS $^{130}\text{Te}(\text{}^9\text{Be}, 4\text{n})$ , $E=42.5$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, DCO, $\gamma(\text{lin pol})$ . $^{135}\text{Ba}$ ; deduced levels, $J$ , $\pi$ , multipolarity, bands, configurations, possible magnetic rotational band. Comparison with TAC calculations. JOUR PRVCA 81 067304
	2010TA12	NUCLEAR REACTIONS $\text{Ba}(\text{p}, \text{X})^{132}\text{La} / ^{135}\text{La} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{136}\text{Cs}$ , $E=30-70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869
$^{135}\text{La}$	2010SI04	NUCLEAR REACTIONS $^{124}\text{Sn}(\text{}^{16}\text{O}, \text{X})^{133}\text{Ce} / ^{134}\text{Ce} / ^{135}\text{Ce} / ^{133}\text{La} / ^{135}\text{La} / ^{131}\text{Ba} / ^{132}\text{Ba} / ^{133}\text{Ba} / ^{128,130,133}\text{Xe} / ^{131}\text{Cs} / ^{127}\text{I}$ , $E=6.3$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha\text{xn}$ , $\alpha\text{pxn}$ and $2\alpha\text{xn}$ reaction channels. JOUR PRVCA 81 027602

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**A=135 (continued)**

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|                   | 2010TA12 | NUCLEAR REACTIONS Ba(p, X) <sup>132</sup> La / <sup>135</sup> La / <sup>131</sup> Ba / <sup>133</sup> Ba / <sup>135</sup> Ba / <sup>129</sup> Cs / <sup>132</sup> Cs / <sup>134</sup> Cs / <sup>136</sup> Cs, E=30-70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869   |
| <sup>135</sup> Ce | 2010SI04 | NUCLEAR REACTIONS <sup>124</sup> Sn( <sup>16</sup> O, X) <sup>133</sup> Ce / <sup>134</sup> Ce / <sup>135</sup> Ce / <sup>133</sup> La / <sup>135</sup> La / <sup>131</sup> Ba / <sup>132</sup> Ba / <sup>133</sup> Ba / <sup>128,130,133</sup> Xe / <sup>131</sup> Cs / <sup>127</sup> I, E=6.3 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced spin distributions of evaporation residues formed in xn, pxn, $\alpha$ xn, $\alpha$ pxn and 2 $\alpha$ xn reaction channels. JOUR PRVCA 81 027602 |
| <sup>135</sup> Nd | 2008MUZV | NUCLEAR REACTIONS <sup>100</sup> Mo( <sup>40</sup> Ar, 5n), E=175 MeV; <sup>100</sup> Mo( <sup>40</sup> Ar, 4n), E not given; measured E $\gamma$ , I $\gamma$ ( $\theta$ ), $\gamma\gamma$ -coin; deduced E, J, $\pi$ , bands, B(M1), B(E2), yrast; calculated splitting of chiral bands using TAC (tilted-axis cranking) with RPA. Results on CD only. CONF E.Lansing (NS2008),P26,Mukhopadhyay  |

**A=136**

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| <sup>136</sup> Sn | 2008MAZL | RADIOACTIVITY <sup>136</sup> Sn, <sup>136</sup> Sb, <sup>136</sup> Te( $\beta^-$ ); measured $\beta$ -delayed neutron decay, E $\gamma$ , I $\gamma$ ; <sup>134,135</sup> Sb, <sup>136</sup> Te; deduced level energies, J, $\pi$ , B(E $\lambda$ ), T <sub>1/2</sub> . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach   |
| <sup>136</sup> Sb | 2008MAZL | RADIOACTIVITY <sup>136</sup> Sn, <sup>136</sup> Sb, <sup>136</sup> Te( $\beta^-$ ); measured $\beta$ -delayed neutron decay, E $\gamma$ , I $\gamma$ ; <sup>134,135</sup> Sb, <sup>136</sup> Te; deduced level energies, J, $\pi$ , B(E $\lambda$ ), T <sub>1/2</sub> . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach   |
|                   | 2008SIZS | RADIOACTIVITY <sup>136</sup> Sb( $\beta^-$ )[from <sup>241</sup> Pu(n, f), E=thermal]; measured delayed E $\gamma$ , I $\gamma$ , E(ce), x-rays; deduced E, J, $\pi$ , B(E2); <sup>105,107</sup> Mo, <sup>107</sup> Tc( $\beta^-$ )[from <sup>248</sup> Cm(SF)]; measured E $\gamma$ , I $\gamma$ , E(ce); deduced E, J, $\pi$ , isomer decay, bands; calculated E, J, $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71 |
| <sup>136</sup> Te | 2008MAZL | RADIOACTIVITY <sup>136</sup> Sn, <sup>136</sup> Sb, <sup>136</sup> Te( $\beta^-$ ); measured $\beta$ -delayed neutron decay, E $\gamma$ , I $\gamma$ ; <sup>134,135</sup> Sb, <sup>136</sup> Te; deduced level energies, J, $\pi$ , B(E $\lambda$ ), T <sub>1/2</sub> . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach   |
|                   | 2008SIZS | RADIOACTIVITY <sup>136</sup> Sb( $\beta^-$ )[from <sup>241</sup> Pu(n, f), E=thermal]; measured delayed E $\gamma$ , I $\gamma$ , E(ce), x-rays; deduced E, J, $\pi$ , B(E2); <sup>105,107</sup> Mo, <sup>107</sup> Tc( $\beta^-$ )[from <sup>248</sup> Cm(SF)]; measured E $\gamma$ , I $\gamma$ , E(ce); deduced E, J, $\pi$ , isomer decay, bands; calculated E, J, $\pi$ , isomeric transition using standard BCS. The Sb data compared to calculations of Corragio. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P71 |
| <sup>136</sup> I  | 2008MAZL | RADIOACTIVITY <sup>136</sup> Sn, <sup>136</sup> Sb, <sup>136</sup> Te( $\beta^-$ ); measured $\beta$ -delayed neutron decay, E $\gamma$ , I $\gamma$ ; <sup>134,135</sup> Sb, <sup>136</sup> Te; deduced level energies, J, $\pi$ , B(E $\lambda$ ), T <sub>1/2</sub> . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P263,Mach   |

KEYNUMBERS AND KEYWORDS

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**A=136 (continued)**

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| 2010LI03          | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{135}\text{Te}$ , $^{136}\text{I}$ , $^{137}\text{Xe}$ , $^{138}\text{Cs}$ ; deduced levels, J, $\pi$ . Comparison with shell model calculations. JOUR PRVCA 81 014316   |
| 2010VI01          | NUCLEAR REACTIONS $^{235}\text{U}$ , $^{239}\text{Pu}(\gamma, \text{F})^{90}\text{Rb}$ / $^{129}\text{Sb}$ / $^{130}\text{Sb}$ / $^{132}\text{Sb}$ / $^{131}\text{Te}$ / $^{133}\text{Te}$ / $^{134}\text{I}$ / $^{136}\text{I}$ / $^{135}\text{Xe}$ , $E=9.6, 9.8$ MeV; measured reaction products; deduced isomeric yields, angular momenta. JOUR BRSPE 74 500   |
| $^{136}\text{Xe}$ | 2008SAZL NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , ( $\alpha$ , $\alpha\gamma$ ), $E<100$ MeV; measured reaction products; $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}$ ; deduced E1 strength distribution, $B(E1)$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P345,Savran   |
|                   | 2009SAZW NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , $E\approx 2800-9000$ keV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ using S-DALINAC; deduced E, J, $\pi$ , decay width, $B(E1)$ ; calculated $B(E1)$ , fragmentation using QPM. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P486,Savran   |
| 2010MC04          | ATOMIC MASSES $^{136}\text{Xe}$ , $^{136}\text{Ba}$ ; measured mass difference using high-resolution, deflection-type mass spectrometer; deduced $Q_{2\beta}$ for $^{136}\text{Xe}$ decay. Comparison with previous studies and AME-2003. JOUR PRVCA 82 024603   |
| 2010MC04          | RADIOACTIVITY $^{136}\text{Xe}(2\beta^-)$ ; measured mass difference of $^{136}\text{Xe}$ and $^{136}\text{Ba}$ using high-resolution, deflection-type mass spectrometer; deduced Q value. Comparison with previous studies and AME-2003. JOUR PRVCA 82 024603   |
| 2010RE01          | NUCLEAR REACTIONS $^{232}\text{Th}(^6\text{Li}, \text{X})$ , $E=45$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, particle spectra, (particle) $\gamma$ -coin, (particle) $\gamma$ -correlations using STARS Si array at LBNL and Ge detectors. $^{88}\text{Br}$ , $^{93}\text{Rb}$ , $^{95,98,99}\text{Y}$ , $^{99}\text{Mo}$ , $^{100}\text{Tc}$ , $^{121,123}\text{In}$ , $^{119,120,121,122,123,124,125,126,127}\text{Sn}$ , $^{123,125,127,131}\text{Sb}$ , $^{131}\text{I}$ , $^{132}\text{Te}$ , $^{134,136}\text{Xe}$ ; measured isomer half-lives; deduced levels, J, $\pi$ . Level systematics of neighboring Sn, Sb and In nuclides. JOUR PRVCA 81 014301 |
| $^{136}\text{Cs}$ | 2010TA12 NUCLEAR REACTIONS $\text{Ba}(p, \text{X})^{132}\text{La}$ / $^{135}\text{La}$ / $^{131}\text{Ba}$ / $^{133}\text{Ba}$ / $^{135}\text{Ba}$ / $^{129}\text{Cs}$ / $^{132}\text{Cs}$ / $^{134}\text{Cs}$ / $^{136}\text{Cs}$ , $E=30-70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with other data and EMPIRE and ALICE-IPPE codes. JOUR ARISE 68 1869  |
| $^{136}\text{Ba}$ | 2008JAZU NUCLEAR REACTIONS $^{130}\text{Te}(^9\text{Be}, \text{X})$ , $E=35-44$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{134,135,136}\text{Ba}$ , $^{132}\text{Xe}$ deduced $\sigma$ ; $^{132}\text{Xe}$ deduced levels, J, $\pi$ ; $^{132}\text{Xe}$ calculated levels, J, $\pi$ using E(5) symmetry. Results on CD only. CONF E.Lansing (NS2008),P123,Jain   |
|                   | 2008MUZU NUCLEAR REACTIONS $^{136}\text{Ba}(n, n'\gamma)$ , $E=2.2-3.9$ MeV; measured $\sigma(\theta)$ ; deduced mixed-symmetry state at 2.129 MeV. Abstract only. CONF E.Lansing (NS2008),P146,Mukhopadhyay   |
|                   | 2009SCZZ NUCLEAR REACTIONS $^{136}\text{Ba}(n, n'\gamma)$ , $E=2.2-3.9$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced E, J, $\pi$ , $B(E2)$ , $B(M1)$ transition strengths, rotational bands, branching ratios, mixing ratio, multiphonon states, half-life. E and $B(M1)$ compared to near-by nuclei data from literature. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P253,Scheck  |

KEYNUMBERS AND KEYWORDS

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**A=136 (continued)**

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| 2010MC04          | ATOMIC MASSES $^{136}\text{Xe}$ , $^{136}\text{Ba}$ ; measured mass difference using high-resolution, deflection-type mass spectrometer; deduced $Q_{2\beta}$ for $^{136}\text{Xe}$ decay. Comparison with previous studies and AME-2003. JOUR PRVCA 82 024603  |
| 2010MC04          | RADIOACTIVITY $^{136}\text{Xe}(2\beta^-)$ ; measured mass difference of $^{136}\text{Xe}$ and $^{136}\text{Ba}$ using high-resolution, deflection-type mass spectrometer; deduced Q value. Comparison with previous studies and AME-2003. JOUR PRVCA 82 024603  |
| $^{136}\text{La}$ | 2010BH08 NUCLEAR REACTIONS $^{130}\text{Te}(^{11}\text{B}, 5n\gamma)^{136}\text{La}$ , E=52 MeV; $^{130}\text{Te}(^{12}\text{C}, xn)^{137}\text{Cs} / ^{138}\text{Cs}$ , E=63 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ , $\gamma$ - $\gamma$ - $\gamma$ -coin.; deduced level scheme, J, $\pi$ , bands, B(M1). Comparison with tilted axis cranking calculations. JOUR PRAMC 75 25 |
| $^{136}\text{Nd}$ | 2008MUZV NUCLEAR REACTIONS $^{100}\text{Mo}(^{40}\text{Ar}, 5n)$ , E=175 MeV; $^{100}\text{Mo}(^{40}\text{Ar}, 4n)$ , E not given; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced E, J, $\pi$ , bands, B(M1), B(E2), yrast; calculated splitting of chiral bands using TAC (tilted-axis cranking) with RPA. Results on CD only. CONF E.Lansing (NS2008),P26,Mukhopadhyay    |

**A=137**

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| $^{137}\text{Te}$ | 2009RZ02 NUCLEAR REACTIONS $^{235}\text{U}$ , $^{242}\text{Am}(n, F)^{137}\text{Te} / ^{142}\text{Cs} / ^{144}\text{Cs}$ , E=thermal; measured ionic charge distribution of fragments, $E\gamma$ , $I\gamma$ , ce, $\gamma(\text{ce})$ -, delayed $\gamma(\text{fragments})$ -, delayed (ce)(fragments)-coin using LOHENGRIN fragment separator. $^{142,144}\text{Cs}$ ; deduced levels and isomer half-lives. JOUR PRVCA 80 064317 |
| $^{137}\text{Xe}$ | 2010LI03 RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. $^{135}\text{Te}$ , $^{136}\text{I}$ , $^{137}\text{Xe}$ , $^{138}\text{Cs}$ ; deduced levels, J, $\pi$ . Comparison with shell model calculations. JOUR PRVCA 81 014316   |
|                   | 2010LI03 NUCLEAR MOMENTS $^{137}\text{Xe}$ ; measured g factor of a 15 / 2- state using integral perturbed angular correlation (IPAC) technique. JOUR PRVCA 81 014316   |
| $^{137}\text{Cs}$ | 2010BH08 NUCLEAR REACTIONS $^{130}\text{Te}(^{11}\text{B}, 5n\gamma)^{136}\text{La}$ , E=52 MeV; $^{130}\text{Te}(^{12}\text{C}, xn)^{137}\text{Cs} / ^{138}\text{Cs}$ , E=63 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ , $\gamma$ - $\gamma$ - $\gamma$ -coin.; deduced level scheme, J, $\pi$ , bands, B(M1). Comparison with tilted axis cranking calculations. JOUR PRAMC 75 25                                 |
|                   | 2010SE15 NUCLEAR REACTIONS $^{235,238}\text{U}$ , $^{239}\text{Pu}(n, F)^{99}\text{Mo} / ^{95}\text{Zr} / ^{137}\text{Cs} / ^{140}\text{Ba} / ^{141,143}\text{Ce} / ^{147}\text{Nd}$ , E=0.4-1.9 MeV; measured fission products; deduced fission product yields. Comparison with ENDF / B-VII.0 library, BIG TEN critical assembly. JOUR NDSBA 111 2891   |

## A=138

- <sup>138</sup>Sn 20100H02 NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF- $B\rho$  method. JOUR JUPSA 79 073201
- <sup>138</sup>Te 2010LI02 ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- <sup>138</sup>Xe 2008KRZV NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, n)<sup>55</sup>Ti, E=high; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; <sup>122,124,126</sup>Cd, <sup>138,140,142,144</sup>Xe( $\gamma$ ,  $\gamma'$ ); measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- 2009SH42 NUCLEAR REACTIONS <sup>12</sup>C(<sup>238</sup>U, X), E=1.45 GeV; measured  $E\gamma$ ,  $I\gamma$  using EXOGAM array, fission fragments using VAMOS detector. <sup>134</sup>Xe; deduced levels, J,  $\pi$ . <sup>100</sup>Zr, <sup>106,107,108,109</sup>Ru, <sup>133</sup>Xe, <sup>138</sup>Xe; measured  $E\gamma$ . Comparison with shell model calculations for Z>49, N<83 nuclei. JOUR PRVCA 80 051305
- <sup>138</sup>Cs 2009PA49 NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010BH08 NUCLEAR REACTIONS <sup>130</sup>Te(<sup>11</sup>B, 5n $\gamma$ )<sup>136</sup>La, E=52 MeV; <sup>130</sup>Te(<sup>12</sup>C, xn)<sup>137</sup>Cs / <sup>138</sup>Cs, E=63 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ ,  $\gamma$ - $\gamma$ - $\gamma$ -coin.; deduced level scheme, J,  $\pi$ , bands, B(M1). Comparison with tilted axis cranking calculations. JOUR PRAMC 75 25
- 2010LI03 RADIOACTIVITY <sup>252</sup>Cf(SF); measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>135</sup>Te, <sup>136</sup>I, <sup>137</sup>Xe, <sup>138</sup>Cs; deduced levels, J,  $\pi$ . Comparison with shell model calculations. JOUR PRVCA 81 014316
- <sup>138</sup>Ba 2008SAZL NUCLEAR REACTIONS <sup>136</sup>Xe, <sup>138</sup>Ba, <sup>140</sup>Ce, <sup>142</sup>Nd, <sup>144</sup>Sm( $\gamma$ ,  $\gamma'$ ), ( $\alpha$ ,  $\alpha\gamma$ ), E<100 MeV; measured reaction products; <sup>136</sup>Xe, <sup>138</sup>Ba, <sup>140</sup>Ce, <sup>142</sup>Nd, <sup>144</sup>Sm; deduced E1 strength distribution, B(E1). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P345,Savran
- 2009SAZW NUCLEAR REACTIONS <sup>136</sup>Xe, <sup>138</sup>Ba, <sup>140</sup>Ce, <sup>142</sup>Nd, <sup>144</sup>Sm( $\gamma$ ,  $\gamma'$ ), E $\approx$ 2800-9000 keV; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$  using S-DALINAC; deduced E, J,  $\pi$ , decay width, B(E1); calculated B(E1), fragmentation using QPM. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P486,Savran

KEYNUMBERS AND KEYWORDS

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**A=138 (continued)**

2010T001 NUCLEAR REACTIONS  $^{138}\text{Ba}(\gamma, \gamma)$ ,  $(\gamma, \gamma')$ ,  $E \approx$  below one-neutron separation energy; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ , energy levels, B(E1), B(M1). Comparison with QPM calculations. JOUR PRLTA 104 072501

**A=139**

$^{139}\text{Cs}$  2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ ,  $E=1$  GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

2010LI24 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{139,142}\text{Cs}$ ; deduced high-spin states, levels, J,  $\pi$ , bands, ICC,  $\delta$ .  $^{139}\text{Cs}$  calculated levels, J,  $\pi$ ,  $\delta$  using shell model. JOUR NUPAB 834 78c

$^{139}\text{La}$  2010MA40 NUCLEAR REACTIONS  $^{139}\text{La}(\gamma, \gamma')$ ,  $E=2-10$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced levels, integrated cross section, branching ratios, partial widths, level densities as function of spin, and  $\gamma$ -intensity distributions. Comparison with calculations based on quasiparticle-random-phase approximation using an instantaneous-shape sampling (ISS-QRPA). JOUR PRVCA 82 024314

$^{139}\text{Ce}$  2010SI02 NUCLEAR REACTIONS  $\text{Ce}(\text{d}, \text{X})^{139}\text{Ce} / ^{141}\text{Ce} / ^{143}\text{Ce} / ^{142}\text{Pr}$ ,  $E=5-18.5$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with TALYS calculations. JOUR RAACA 98 187

$^{139}\text{Nd}$  2008SUZQ NUCLEAR REACTIONS  $\text{Ce}(^3\text{He}, \text{xn})^{139}\text{Nd}$ ,  $E=36.9$  MeV;  $^{141}\text{Pr}(\text{p}, 3\text{n})$ ,  $E=20, 45$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$  to ground and isomeric state; calculated  $\sigma$  using STAPRE. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P467

2009XU08 NUCLEAR REACTIONS  $^{128}\text{Te}(^{16}\text{O}, 5\text{n})^{139}\text{Nd}$ ,  $E=90$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , collective bands. JOUR CPCHC 33 s01 185

$^{139}\text{Pm}$  2008DHZZ NUCLEAR REACTIONS  $^{116}\text{Cd}(^{27}\text{Al}, 4\text{n})$ ,  $E=120$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin; deduced  $^{139}\text{Pm}$  E, J,  $\pi$ , quadrupole moment. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P489

2010ZH12 NUCLEAR REACTIONS  $^{116}\text{Cd}(^{27}\text{Al}, 4\text{n})$ ,  $E=120$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin., DCO;  $^{139}\text{Pm}$ ; deduced levels, J,  $\pi$ , bands, and possible magnetic rotational bands. JOUR CPCHC 34 456

## A=140

- <sup>140</sup>Sb 20100H02 NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF- $B\rho$  method. JOUR JUPSA 79 073201
- <sup>140</sup>I 2010LI02 ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- <sup>140</sup>Xe 2008KRZV NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, n)<sup>55</sup>Ti, E=high; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; <sup>122,124,126</sup>Cd, <sup>138,140,142,144</sup>Xe( $\gamma$ ,  $\gamma'$ ); measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- <sup>140</sup>Cs 2009PA49 NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010LI10 RADIOACTIVITY <sup>252</sup>Cf(SF); measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>140</sup>Cs; deduced levels, J,  $\pi$ , configurations. <sup>107,108,109,110</sup>Tc; measured  $E\gamma$ . Comparison with level structure of <sup>138</sup>I and with systematics of N=85 isotones of <sup>137</sup>Te, <sup>138</sup>I, <sup>139</sup>Xe, <sup>140</sup>Cs, <sup>141</sup>Ba, <sup>145</sup>Nd, <sup>146</sup>Pm, <sup>147</sup>Sm, <sup>148</sup>Eu and <sup>149</sup>Gd. JOUR PRVCA 81 037302
- <sup>140</sup>Ba 2010AD13 NUCLEAR REACTIONS <sup>232</sup>Th(n,  $\gamma$ ), (n, 2n), (n, F)<sup>99</sup>Mo, <sup>235,238</sup>U(n,  $\gamma$ ), (n, F)<sup>99</sup>Mo / <sup>132</sup>Te / <sup>133</sup>I / <sup>135</sup>I / <sup>135</sup>Xe / <sup>140</sup>Ba / <sup>143</sup>Ce, E=thermal-1000 MeV [from <sup>208</sup>Pb(d, X), E=1.6 GeV spallation source]; measured  $E\gamma$ ,  $I\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
- 2010CH41 NUCLEAR REACTIONS <sup>239</sup>Pu(n, F)<sup>99</sup>Mo / <sup>95</sup>Zr / <sup>140</sup>Ba / <sup>144</sup>Ce / <sup>147</sup>Nd, E=0.2-2 MeV; measured fission products; deduced fission product yields and its energy dependence. Comparison with ENDF / B-VII.0 library, LANL-ILRR measurements. JOUR NDSBA 111 2923
- 2010SE15 NUCLEAR REACTIONS <sup>235,238</sup>U, <sup>239</sup>Pu(n, F)<sup>99</sup>Mo / <sup>95</sup>Zr / <sup>137</sup>Cs / <sup>140</sup>Ba / <sup>141,143</sup>Ce / <sup>147</sup>Nd, E=0.4-1.9 MeV; measured fission products; deduced fission product yields. Comparison with ENDF / B-VII.0 library, BIG TEN critical assembly. JOUR NDSBA 111 2891

KEYNUMBERS AND KEYWORDS

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A=140 (*continued*)

$^{140}\text{La}$	2008IGZX	NUCLEAR REACTIONS $^{139}\text{La}(n, \gamma)$ , $E \approx 10\text{-}100$ keV; $^{139}\text{La}(n, \gamma)$ , $E < 00\text{-}650$ keV; measured $E\gamma$ , $I\gamma$ ; deduced capture $\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P1299
	2008TAZG	NUCLEAR REACTIONS $^{90,91,92,93,94,96}\text{Zr}(n, \gamma)$ , $^{139}\text{La}(n, \gamma)$ , $E = 1$ eV-1 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced average $\sigma$ , capture kernels; calculated $^{90,91,92,94,96}\text{Zr}$ , $^{139}\text{La}$ average $\sigma$ ; using n-TOF and JENDL-3.3 data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1303
	2010CH01	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{139}\text{La}(n, \gamma)$ , $E = 0.0536$ eV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ENDF / B-VII.0 and JENDL-3.3 libraries. JOUR RAACA 98 1
	2010C002	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , $\text{Pb}$ , $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , $E = 0.001\text{-}1$ MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643
	2010DI02	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{94}\text{Zr}$ , $^{64}\text{Zn}$ , $^{45}\text{Sc}$ , $^{139}\text{La}(n, \gamma)$ , $E = \text{thermal}$ ; measured $E\gamma$ , $I\gamma$ ; deduced shape of neutron flux, covariances. JOUR ARISE 68 592
	2010GA21	NUCLEAR REACTIONS $^{237}\text{Np}(\gamma, F)^{135}\text{Cs}$ , $^{238}\text{U}(\gamma, F)^{140}\text{La}$ , $^{65}\text{Cu}(\gamma, n)^{64}\text{Cu}$ , $E < 25$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced isomer yield ratios. Comparison with calculation. JOUR PANUE 73 1477
$^{140}\text{Ce}$	2008SAZL	NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , $(\alpha, \alpha\gamma)$ , $E < 100$ MeV; measured reaction products; $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}$ ; deduced E1 strength distribution, $B(E1)$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P345,Savran
	2009ENZY	NUCLEAR REACTIONS $^{124}\text{Sn}$ , $^{140}\text{Ce}(\alpha, \alpha'\gamma)$ , $E = 136$ MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin.; deduced $\sigma$ , $B(E1)$ . Compared to $(\gamma, \gamma')$ reactions. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P357,Endres
	2009KI25	RADIOACTIVITY $^{122}\text{I}$ , $^{140}\text{Pr}$ , $^{142}\text{Pm}(\text{EC})$ ; measured $T_{1/2}$ of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c
	2009SAZW	NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , $E \approx 2800\text{-}9000$ keV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ using S-DALINAC; deduced $E$ , $J$ , $\pi$ , decay width, $B(E1)$ ; calculated $B(E1)$ , fragmentation using QPM. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P486,Savran
	2010KU02	RADIOACTIVITY $^{205}\text{Hg}$ , $^{207}\text{Tl}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, X)$ , $E = 750$ MeV / nucleon]; $^{140}\text{Pr}$ , $^{142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ [from $\text{Be}(^{152}\text{Sm}, X)$ , $E = 508$ MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525
$^{140}\text{Pr}$	2009KI25	RADIOACTIVITY $^{122}\text{I}$ , $^{140}\text{Pr}$ , $^{142}\text{Pm}(\text{EC})$ ; measured $T_{1/2}$ of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c



A=140 (*continued*)

- 2009WI18 RADIOACTIVITY  $^{140}\text{Pm}(\beta^+)$ ,  $(\beta^+\text{EC})$  [from  $^{140}\text{Sm}(\beta^+)$ ,  $(\beta^+\text{EC})$ , from  $^{114}\text{Cd}(^{30}\text{Si}, 4n)$ ,  $E=130$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Yrast ball.  $^{140}\text{Nd}$ ; deduced levels,  $J$ ,  $\pi$ , and mixing ratios. Low-lying mixed-symmetry states discussed. Comparisons with level systematics of  $^{136}\text{Ba}$  and  $^{138}\text{Ce}$ . JOUR PRVCA 80 054309
- 2009WIZV RADIOACTIVITY  $^{140}\text{Nd}(\text{EC})$ [from  $^{140}\text{Pm}$ [from  $^{140}\text{Sm}$ [from  $^{114}\text{Cd}(^{30}\text{Si}, X)^{140}\text{Sm}$ ,  $E=130$  MeV]]]; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ,  $\gamma\gamma$ -coin.; deduced multipole mixing ratios, M1 percentage. YRAST Ball array. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P268,Williams
- 2010KU02 RADIOACTIVITY  $^{205}\text{Hg}$ ,  $^{207}\text{Tl}(\beta^-)$  [from  $\text{Be}(^{208}\text{Pb}, X)$ ,  $E=750$  MeV / nucleon];  $^{140}\text{Pr}$ ,  $^{142}\text{Pm}$ ,  $^{122}\text{I}(\text{EC})$  [from  $\text{Be}(^{152}\text{Sm}, X)$ ,  $E=508$  MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates,  $Q$ -values, time-dependent decay constant. JOUR APOBB 41 525
- $^{140}\text{Nd}$  2008WEZW RADIOACTIVITY  $^{66}\text{Ge}$ ;  $^{68}\text{Ge}$ ;  $^{94}\text{Zr}$ ;  $^{120}\text{Te}$ ; measured decay products; deduced  $B(E2)$ ,  $T_{1/2}$ ;  $^{140}\text{Nd}$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ , mixed-symmetry states. Results on CD only. CONF E.Lansing (NS2008),P23,Werner
- 2009WI18 RADIOACTIVITY  $^{140}\text{Pm}(\beta^+)$ ,  $(\beta^+\text{EC})$  [from  $^{140}\text{Sm}(\beta^+)$ ,  $(\beta^+\text{EC})$ , from  $^{114}\text{Cd}(^{30}\text{Si}, 4n)$ ,  $E=130$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Yrast ball.  $^{140}\text{Nd}$ ; deduced levels,  $J$ ,  $\pi$ , and mixing ratios. Low-lying mixed-symmetry states discussed. Comparisons with level systematics of  $^{136}\text{Ba}$  and  $^{138}\text{Ce}$ . JOUR PRVCA 80 054309
- 2009WIZV RADIOACTIVITY  $^{140}\text{Nd}(\text{EC})$ [from  $^{140}\text{Pm}$ [from  $^{140}\text{Sm}$ [from  $^{114}\text{Cd}(^{30}\text{Si}, X)^{140}\text{Sm}$ ,  $E=130$  MeV]]]; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ,  $\gamma\gamma$ -coin.; deduced multipole mixing ratios, M1 percentage. YRAST Ball array. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P268,Williams
- 2010GL05 NUCLEAR REACTIONS  $^{140}\text{Ce}(^3\text{He}, 3n)$ ,  $E=19.8$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives by DSAM.  $^{140}\text{Nd}$ ; deduced levels,  $J$ ,  $\pi$ , transition probabilities, phonon-mixed symmetry states. JOUR PRVCA 82 037302
- 2010NA12 NUCLEAR REACTIONS  $^{144}\text{Sm}(\gamma, n)$ ,  $(\gamma, p)$ ,  $(\gamma, \alpha)$ ,  $E<20$  MeV bremsstrahlung; measured  $E\gamma$ ,  $I\gamma$ , yields,  $\sigma(E)$  using activation method. Comparison with Hauser-Feshbach statistical models calculations using NON-SMOKER code. JOUR PRVCA 81 055806
- $^{140}\text{Pm}$  2009WI18 RADIOACTIVITY  $^{140}\text{Pm}(\beta^+)$ ,  $(\beta^+\text{EC})$  [from  $^{140}\text{Sm}(\beta^+)$ ,  $(\beta^+\text{EC})$ , from  $^{114}\text{Cd}(^{30}\text{Si}, 4n)$ ,  $E=130$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Yrast ball.  $^{140}\text{Nd}$ ; deduced levels,  $J$ ,  $\pi$ , and mixing ratios. Low-lying mixed-symmetry states discussed. Comparisons with level systematics of  $^{136}\text{Ba}$  and  $^{138}\text{Ce}$ . JOUR PRVCA 80 054309
- 2010WA37 NUCLEAR REACTIONS  $^{126}\text{Te}(^{19}\text{F}, 5n)$ ,  $E=90$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.;  $^{140}\text{Pm}$  deduced energies, level scheme, yrast bands,  $J$ ,  $\pi$ , multipolarities. Comparison with TRS calculations. JOUR JPGPE 37 125107

KEYNUMBERS AND KEYWORDS

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**A=141**

- <sup>141</sup>I      2010LI02      ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- <sup>141</sup>Cs      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010LU02      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere. <sup>141,144</sup>Cs; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure, B(E1) / B(E2), dipole moment. Comparison with level structure of <sup>143</sup>Cs and with systematics of adjacent N=85-92 nuclei. <sup>105,106,107,108</sup>Tc; measured E $\gamma$ . JOUR NUPAB 838 1
- <sup>141</sup>Ce      2010SI02      NUCLEAR REACTIONS Ce(d, X)<sup>139</sup>Ce / <sup>141</sup>Ce / <sup>143</sup>Ce / <sup>142</sup>Pr, E=5-18.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with TALYS calculations. JOUR RAACA 98 187

**A=142**

- <sup>142</sup>Xe      2008KRZV      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ti, n)<sup>55</sup>Ti, E=high; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure; <sup>122,124,126</sup>Cd, <sup>138,140,142,144</sup>Xe( $\gamma$ ,  $\gamma'$ ); measured Coulomb excitation E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- <sup>142</sup>Cs      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2009RZ02      RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ,  $\gamma(t)$ , and isomer half-lives using EUROGAM2 array. <sup>142,144</sup>Cs; deduced levels, J,  $\pi$ , bands, isomers and configurations. Comparison with quasiparticle rotor model (QPRM) calculations. JOUR PRVCA 80 064317
- 2009RZ02      NUCLEAR REACTIONS <sup>235</sup>U, <sup>242</sup>Am(n, F)<sup>137</sup>Te / <sup>142</sup>Cs / <sup>144</sup>Cs, E=thermal; measured ionic charge distribution of fragments, E $\gamma$ , I $\gamma$ , ce,  $\gamma(ce)$ -, delayed  $\gamma(\text{fragments})$ -, delayed (ce)(fragments)-coin using LOHENGRIN fragment separator. <sup>142,144</sup>Cs; deduced levels and isomer half-lives. JOUR PRVCA 80 064317

KEYNUMBERS AND KEYWORDS

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**A=142 (continued)**

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|                   | 2010LI14 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ . $^{142}\text{Cs}$ ; deduced levels, J, $\pi$ , multipolarity, bands, B(E1), B(E2), electric dipole moments. $^{106,107}\text{Tc}$ ; measured $E\gamma$ . Systematics of electric dipole moments for Xe (N=85-88), Cs (N=86-88), Ba (N=85-90), La (N=88, 90), Ce (N=86, 88, 90), Nd (N=86, 88, 90), Sm (N=86, 88). JOUR PRVCA 81 057304 |
|                   | 2010LI24 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin. $^{139,142}\text{Cs}$ ; deduced high-spin states, levels, J, $\pi$ , bands, ICC, $\delta$ . $^{139}\text{Cs}$ calculated levels, J, $\pi$ , $\delta$ using shell model. JOUR NUPAB 834 78c  |
| $^{142}\text{Pr}$ | 2010SI02 | NUCLEAR REACTIONS $\text{Ce}(\text{d}, \text{X})^{139}\text{Ce} / ^{141}\text{Ce} / ^{143}\text{Ce} / ^{142}\text{Pr}$ , E=5-18.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with TALYS calculations. JOUR RAACA 98 187  |
| $^{142}\text{Nd}$ | 2008SAZL | NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , ( $\alpha$ , $\alpha\gamma$ ), E<100 MeV; measured reaction products; $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}$ ; deduced E1 strength distribution, B(E1). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P345,Savran  |
|                   | 2009KI25 | RADIOACTIVITY $^{122}\text{I}$ , $^{140}\text{Pr}$ , $^{142}\text{Pm}(\text{EC})$ ; measured $T_{1/2}$ of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c   |
|                   | 2009SAZW | NUCLEAR REACTIONS $^{136}\text{Xe}$ , $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \gamma')$ , E $\approx$ 2800-9000 keV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ using S-DALINAC; deduced E, J, $\pi$ , decay width, B(E1); calculated B(E1), fragmentation using QPM. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P486,Savran  |
|                   | 2010KU02 | RADIOACTIVITY $^{205}\text{Hg}$ , $^{207}\text{Tl}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, \text{X})$ , E=750 MeV / nucleon]; $^{140}\text{Pr}$ , $^{142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ [from $\text{Be}(^{152}\text{Sm}, \text{X})$ , E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525                                   |
| $^{142}\text{Pm}$ | 2009KI25 | RADIOACTIVITY $^{122}\text{I}$ , $^{140}\text{Pr}$ , $^{142}\text{Pm}(\text{EC})$ ; measured $T_{1/2}$ of hydrogen-like ions; deduced squared neutrino mass difference. JOUR NUPAB 827 510c   |
|                   | 2010KU02 | RADIOACTIVITY $^{205}\text{Hg}$ , $^{207}\text{Tl}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, \text{X})$ , E=750 MeV / nucleon]; $^{140}\text{Pr}$ , $^{142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ [from $\text{Be}(^{152}\text{Sm}, \text{X})$ , E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525                                   |
| $^{142}\text{Gd}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , ( $\beta^+\text{p}$ )[from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ , E=383 MeV; measured $E\gamma$ , $\text{p}\gamma^-$ , $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , ( $\beta^+\text{p}$ ); measured $\text{p}\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301                                      |

## A=143

- $^{143}\text{Te}$  20100H02 NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields.  $^{71}\text{Mn}$ ,  $^{73,74}\text{Fe}$ ,  $^{76}\text{Co}$ ,  $^{79}\text{Ni}$ ,  $^{81,82}\text{Cu}$ ,  $^{84,85}\text{Zn}$ ,  $^{87}\text{Ga}$ ,  $^{90}\text{Ge}$ ,  $^{95}\text{Se}$ ,  $^{98}\text{Br}$ ,  $^{101}\text{Kr}$ ,  $^{103}\text{Rb}$ ,  $^{106,107}\text{Sr}$ ,  $^{108,109}\text{Y}$ ,  $^{111,112}\text{Zr}$ ,  $^{114,115}\text{Nb}$ ,  $^{115,116,117}\text{Mo}$ ,  $^{119,120}\text{Tc}$ ,  $^{121,122,123,124}\text{Ru}$ ,  $^{123,124,125,126}\text{Rh}$ ,  $^{127,128}\text{Pd}$ ,  $^{133}\text{Cd}$ ,  $^{138}\text{Sn}$ ,  $^{140}\text{Sb}$ ,  $^{143}\text{Te}$ ,  $^{145}\text{I}$ ,  $^{148}\text{Xe}$ ,  $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta\text{E-TOF-B}\rho$  method. JOUR JUPSA 79 073201
- $^{143}\text{Xe}$  2010LI02 ATOMIC MASSES  $^{85,86}\text{As}$ ,  $^{89}\text{Se}$ ,  $^{123}\text{Ag}$ ,  $^{138}\text{Te}$ ,  $^{140,141}\text{I}$ ,  $^{143}\text{Xe}$ ,  $^{221,222}\text{At}$ ,  $^{223}\text{Rn}$ ,  $^{228}\text{Fr}$ ,  $^{231}\text{Ra}$ ; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
- $^{143}\text{Cs}$  2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- $^{143}\text{Ce}$  2010AD13 NUCLEAR REACTIONS  $^{232}\text{Th}(\text{n}, \gamma)$ ,  $(\text{n}, 2\text{n})$ ,  $(\text{n}, \text{F})^{99}\text{Mo}$ ,  $^{235,238}\text{U}(\text{n}, \gamma)$ ,  $(\text{n}, \text{F})^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ , E=thermal-1000 MeV [from  $^{208}\text{Pb}(\text{d}, \text{X})$ , E=1.6 GeV spallation source]; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
- 2010SI02 NUCLEAR REACTIONS  $\text{Ce}(\text{d}, \text{X})^{139}\text{Ce} / ^{141}\text{Ce} / ^{143}\text{Ce} / ^{142}\text{Pr}$ , E=5-18.5 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced  $\sigma$ . Comparison with TALYS calculations. JOUR RAACA 98 187
- $^{143}\text{Pm}$  2010NA12 NUCLEAR REACTIONS  $^{144}\text{Sm}(\gamma, \text{n})$ ,  $(\gamma, \text{p})$ ,  $(\gamma, \alpha)$ , E<20 MeV bremsstrahlung; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , yields,  $\sigma(\text{E})$  using activation method. Comparison with Hauser-Feshbach statistical models calculations using NON-SMOKER code. JOUR PRVCA 81 055806
- $^{143}\text{Sm}$  2010NA12 NUCLEAR REACTIONS  $^{144}\text{Sm}(\gamma, \text{n})$ ,  $(\gamma, \text{p})$ ,  $(\gamma, \alpha)$ , E<20 MeV bremsstrahlung; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , yields,  $\sigma(\text{E})$  using activation method. Comparison with Hauser-Feshbach statistical models calculations using NON-SMOKER code. JOUR PRVCA 81 055806
- $^{143}\text{Dy}$  2010MA20 RADIOACTIVITY  $^{145,147}\text{Er}(\text{ECp})$ ,  $(\beta^+\text{p})$ [from  $^{58}\text{Ni}(\text{}^{92}\text{Mo}, \text{xn}2\text{p})$ , E=383 MeV; measured  $\text{E}\gamma$ ,  $\text{p}\gamma^-$ ,  $\gamma\gamma$ -coin, half-lives.  $^{144,146}\text{Dy}$ ; deduced levels, J,  $\pi$ .  $^{143,145}\text{Dy}$ ,  $^{146}\text{Ho}(\text{ECp})$ ,  $(\beta^+\text{p})$ ; measured  $\text{p}\gamma$ -coin,  $\text{E}\gamma$ . JOUR PRVCA 81 047301

## A=144

- $^{144}\text{Xe}$  2008KRZV NUCLEAR REACTIONS  $^9\text{Be}(^{56}\text{Ti}, n)^{55}\text{Ti}$ , E=high; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, E(fragment); deduced momentum transfer, ground=state single-particle structure;  $^{122,124,126}\text{Cd}$ ,  $^{138,140,142,144}\text{Xe}(\gamma, \gamma')$ ; measured Coulomb excitation  $E_\gamma$ ,  $I_\gamma$ , (particle) $\gamma$ -coin; deduced B(E2). Compared to other data and systematics. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P96
- $^{144}\text{Cs}$  2008J0ZW RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ - $\gamma$ -coin.;  $^{144}\text{Cs}$ ; deduced energy levels. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P395,Jones
- 2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2009RZ02 RADIOACTIVITY  $^{248}\text{Cm}$ ,  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ,  $\gamma(t)$ , and isomer half-lives using EUROAM2 array.  $^{142,144}\text{Cs}$ ; deduced levels, J,  $\pi$ , bands, isomers and configurations. Comparison with quasiparticle rotor model (QPRM) calculations. JOUR PRVCA 80 064317
- 2009RZ02 NUCLEAR REACTIONS  $^{235}\text{U}$ ,  $^{242}\text{Am}(n, \text{F})^{137}\text{Te} / ^{142}\text{Cs} / ^{144}\text{Cs}$ , E=thermal; measured ionic charge distribution of fragments,  $E_\gamma$ ,  $I_\gamma$ , ce,  $\gamma(\text{ce})$ -, delayed  $\gamma(\text{fragments})$ -, delayed (ce)(fragments)-coin using LOHENGRIN fragment separator.  $^{142,144}\text{Cs}$ ; deduced levels and isomer half-lives. JOUR PRVCA 80 064317
- 2010LU02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere.  $^{141,144}\text{Cs}$ ; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure, B(E1) / B(E2), dipole moment. Comparison with level structure of  $^{143}\text{Cs}$  and with systematics of adjacent N=85-92 nuclei.  $^{105,106,107,108}\text{Tc}$ ; measured  $E_\gamma$ . JOUR NUPAB 838 1
- $^{144}\text{Ce}$  2010CH41 NUCLEAR REACTIONS  $^{239}\text{Pu}(n, \text{F})^{99}\text{Mo} / ^{95}\text{Zr} / ^{140}\text{Ba} / ^{144}\text{Ce} / ^{147}\text{Nd}$ , E=0.2-2 MeV; measured fission products; deduced fission product yields and its energy dependence. Comparison with ENDF / B-VII.0 library, LANL-ILRR measurements. JOUR NDSBA 111 2923
- $^{144}\text{Sm}$  2008SAZL NUCLEAR REACTIONS  $^{136}\text{Xe}$ ,  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}$ ,  $^{142}\text{Nd}$ ,  $^{144}\text{Sm}(\gamma, \gamma')$ , ( $\alpha, \alpha\gamma$ ), E<100 MeV; measured reaction products;  $^{136}\text{Xe}$ ,  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}$ ,  $^{142}\text{Nd}$ ,  $^{144}\text{Sm}$ ; deduced E1 strength distribution, B(E1). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P345,Savran
- 2009SAZW NUCLEAR REACTIONS  $^{136}\text{Xe}$ ,  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}$ ,  $^{142}\text{Nd}$ ,  $^{144}\text{Sm}(\gamma, \gamma')$ , E $\approx$ 2800-9000 keV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\theta(\gamma)$  using S-DALINAC; deduced E, J,  $\pi$ , decay width, B(E1); calculated B(E1), fragmentation using QPM. Compared to data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P486,Savran

KEYNUMBERS AND KEYWORDS

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**A=144 (continued)**

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| 2010FI01                   | NUCLEAR REACTIONS $^{144}\text{Sm}(^6\text{Li}, ^6\text{Li})$ , E=21.0, 22.1, 22.6, 23.0, 24.1, 26.0, 28.0, 30.1, 32.2, 35.1, 42.3 MeV; $^{144}\text{Sm}(^7\text{Li}, ^7\text{Li})$ , E=21.6, 22.1, 22.6, 23.0, 25.0, 27.0, 29.0, 30.0, 32.0, 35.0, 40.8 MeV; measured $\sigma$ , $\sigma(\theta)$ ; deduced optical potentials parameters, sensitivity radii, and energy dependence of the real and imaginary parts of the optical potential. Optical model analyses. JOUR PRVCA 81 024613   |
| $^{144}\text{Gd}$ 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ ], E=383 MeV; measured $E_\gamma$ , $\text{p}\gamma^-$ , $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $\text{p}\gamma$ -coin, $E_\gamma$ . JOUR PRVCA 81 047301   |
| $^{144}\text{Dy}$ 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ ], E=383 MeV; measured $E_\gamma$ , $\text{p}\gamma^-$ , $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $\text{p}\gamma$ -coin, $E_\gamma$ . JOUR PRVCA 81 047301   |
| 2010PR04                   | NUCLEAR REACTIONS $^{92}\text{Mo}(^{54}\text{Fe}, 2\text{p})^{144}\text{Dy}$ , E=226 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, DCO, half-lives by RDDS using JUROGAM array. $^{144}\text{Dy}$ ; deduced levels, J, $\pi$ , multipolarity, bands, B(M1), B(E2), B(M1) / B(E2), Q(t), $\beta_2$ , configurations, magnetic-dipole shears bands. Comparison with systematics of bands in $^{142}\text{Gd}$ , $^{143}\text{Tb}$ , $^{145,146}\text{Dy}$ and with cranked shell-model (CSM) calculations. JOUR PRVCA 81 054320   |
| $^{144}\text{Ho}$ 2010MA08 | NUCLEAR REACTIONS $^{92}\text{Mo}(^{54}\text{Fe}, \text{np})$ , E=226 MeV; measured $\gamma$ spectra, $E_\gamma$ , $I_\gamma$ , $\gamma\gamma^-$ , (particle) $\gamma$ -coin, $\gamma(\theta)$ , half-life and K-conversion-coefficients using JuroGam array and GREAT spectrometer. Recoil-decay (isomer) tagging method. $^{144}\text{Ho}$ ; deduced levels, J, $\pi$ , multipolarity, isomer, bands, configurations, staggering parameter and B(M1) / B(E2) ratios. Comparison with Woods Saxon cranked-shell model (CSM) calculations and with structures of $^{140}\text{Eu}$ and $^{142}\text{Tb}$ . Calculated potential energy surfaces (PES) and Routhians. JOUR PRVCA 81 024302 |
| 2010MA15                   | NUCLEAR REACTIONS $^{92}\text{Mo}(^{54}\text{Fe}, \text{np})$ , E=226 MeV; measured $E_\gamma$ , $I_\gamma$ , (recoil) $\gamma^-$ , $\gamma\gamma$ -coin, half-life, prompt and delayed $\gamma$ rays using JUROGAM array. $^{144}\text{Ho}$ ; deduced energy levels, J, $\pi$ , isomer, configurations. Recoil-isomer tagging method. JOUR PYLBB 683 17  |

**A=145**

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| $^{145}\text{I}$ 2010OH02 | NUCLEAR REACTIONS Be, Pb( $^{238}\text{U}$ , F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. $^{71}\text{Mn}$ , $^{73,74}\text{Fe}$ , $^{76}\text{Co}$ , $^{79}\text{Ni}$ , $^{81,82}\text{Cu}$ , $^{84,85}\text{Zn}$ , $^{87}\text{Ga}$ , $^{90}\text{Ge}$ , $^{95}\text{Se}$ , $^{98}\text{Br}$ , $^{101}\text{Kr}$ , $^{103}\text{Rb}$ , $^{106,107}\text{Sr}$ , $^{108,109}\text{Y}$ , $^{111,112}\text{Zr}$ , $^{114,115}\text{Nb}$ , $^{115,116,117}\text{Mo}$ , $^{119,120}\text{Tc}$ , $^{121,122,123,124}\text{Ru}$ , $^{123,124,125,126}\text{Rh}$ , $^{127,128}\text{Pd}$ , $^{133}\text{Cd}$ , $^{138}\text{Sn}$ , $^{140}\text{Sb}$ , $^{143}\text{Te}$ , $^{145}\text{I}$ , $^{148}\text{Xe}$ , $^{152}\text{Ba}$ ; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN, $\Delta\text{E}$ -TOF- $B\rho$ method. JOUR JUPSA 79 073201 |
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KEYNUMBERS AND KEYWORDS

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**A=145 (continued)**

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| $^{145}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010RZ01 | RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using EUROAM2 array. $^{145}\text{Cs}$ ; deduced levels, J, $\pi$ , multiplicities, bands, configurations, electric dipole moment $D_0$ . $^{101,102}\text{Nb}$ ; measured $E\gamma$ . Comparison with quasiparticle-rotor model calculations. Z=54-64, N=84-92; systematics of $D_0$ parameter for even nuclei of even neutron number. JOUR PRVCA 82 017301   |
| $^{145}\text{Tb}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ ], E=383 MeV; measured $E\gamma$ , $\text{p}\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $\text{p}\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301  |
|                   | 2010MA37 | RADIOACTIVITY $^{146}\text{Ho}(\beta^-)$ , $^{146}\text{Dy}(\text{p})$ [from $^{92}\text{Mo}(^{58}\text{Ni}, \text{n}3\text{p})$ ], E=383 MeV; measured proton spectra, $E\gamma$ , $I\gamma$ , $\text{p}\gamma$ -coin.; deduced decay scheme, $T_{1/2}$ , branching ratio, J, $\pi$ . JOUR CPCHC 34 1082   |
| $^{145}\text{Dy}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ ], E=383 MeV; measured $E\gamma$ , $\text{p}\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $\text{p}\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301  |
| $^{145}\text{Er}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ ], E=383 MeV; measured $E\gamma$ , $\text{p}\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, J, $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $\text{p}\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301  |

**A=146**

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| $^{146}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{146}\text{Nd}$ | 2010GL03 | NUCLEAR REACTIONS $^{149}\text{Sm}(\text{n}, \alpha)$ , E=6.0 MeV; measured $\sigma$ . Comparison with statistical-model calculations using TALYS code and with existing evaluations in various databases such as ENDF / B-VII. JOUR PRVCA 82 014601  |
| $^{146}\text{Gd}$ | 2010CA08 | NUCLEAR REACTIONS $^{144}\text{Sm}(\alpha, 2\text{n})$ , E=26.3 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin $\gamma(\theta)$ , and linear polarization of $\gamma$ rays. $^{146}\text{Gd}$ ; deduced levels, J, $\pi$ , multiplicity, and two-phonon octupole excitations. JOUR PRVCA 81 031301  |

KEYNUMBERS AND KEYWORDS

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**A=146 (continued)**

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|                   | 2010CAZZ | NUCLEAR REACTIONS $^{144}\text{Sm}(\alpha, 2n)$ , $E=26.3$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\gamma(\theta)$ , and $\gamma(\text{lin pol})$ . $^{146}\text{Gd}$ ; deduced levels, $J$ , $\pi$ , multipolarity, multiplet structures, and two-phonon octupole excitations. PREPRINT arXiv:1001.3279v1 [nucl-ex]   |
| $^{146}\text{Dy}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ , $E=383$ MeV; measured $E\gamma$ , $p\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, $J$ , $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $p\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301 |
|                   | 2010MA27 | RADIOACTIVITY $^{147}\text{Er}(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{X})$ , $E=383$ MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\gamma$ -particle coin.; $^{147}\text{Er}$ , $^{146}\text{Dy}$ deduced $T_{1/2}$ . JOUR CPLEE 27 062104   |
|                   | 2010MA37 | RADIOACTIVITY $^{146}\text{Ho}(\beta^-)$ , $^{146}\text{Dy}(\text{p})$ [from $^{92}\text{Mo}(^{58}\text{Ni}, \text{n}3\text{p})$ , $E=383$ MeV]; measured proton spectra, $E\gamma$ , $I\gamma$ , $p\gamma$ -coin.; deduced decay scheme, $T_{1/2}$ , branching ratio, $J$ , $\pi$ . JOUR CPCHC 34 1082  |
| $^{146}\text{Ho}$ | 2010MA20 | RADIOACTIVITY $^{145,147}\text{Er}(\text{ECp})$ , $(\beta^+\text{p})$ [from $^{58}\text{Ni}(^{92}\text{Mo}, \text{xn}2\text{p})$ , $E=383$ MeV; measured $E\gamma$ , $p\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{144,146}\text{Dy}$ ; deduced levels, $J$ , $\pi$ . $^{143,145}\text{Dy}$ , $^{146}\text{Ho}(\text{ECp})$ , $(\beta^+\text{p})$ ; measured $p\gamma$ -coin, $E\gamma$ . JOUR PRVCA 81 047301 |
|                   | 2010MA37 | RADIOACTIVITY $^{146}\text{Ho}(\beta^-)$ , $^{146}\text{Dy}(\text{p})$ [from $^{92}\text{Mo}(^{58}\text{Ni}, \text{n}3\text{p})$ , $E=383$ MeV]; measured proton spectra, $E\gamma$ , $I\gamma$ , $p\gamma$ -coin.; deduced decay scheme, $T_{1/2}$ , branching ratio, $J$ , $\pi$ . JOUR CPCHC 34 1082  |
| $^{146}\text{Er}$ | 2010MA37 | RADIOACTIVITY $^{146}\text{Ho}(\beta^-)$ , $^{146}\text{Dy}(\text{p})$ [from $^{92}\text{Mo}(^{58}\text{Ni}, \text{n}3\text{p})$ , $E=383$ MeV]; measured proton spectra, $E\gamma$ , $I\gamma$ , $p\gamma$ -coin.; deduced decay scheme, $T_{1/2}$ , branching ratio, $J$ , $\pi$ . JOUR CPCHC 34 1082  |

**A=147**

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|-------------------|----------|---|
| $^{147}\text{Cs}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , $E=1$ GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{147}\text{La}$ | 2008HAZO | RADIOACTIVITY $^{147,148,149}\text{La}(\beta^-)$ ; $^{151}\text{Ce}(\beta^-)$ ; $^{153}\text{Pr}(\beta^-)$ [from $^{235}\text{U}(\text{n}, \text{f})$ , from $^{235}\text{U}(\text{n}, \gamma)$ ]; measured $Ee$ , $Ie$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\beta\gamma$ -coin.; deduced endpoint energy, $Q_\beta$ using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131  |
| $^{147}\text{Ce}$ | 2008HAZO | RADIOACTIVITY $^{147,148,149}\text{La}(\beta^-)$ ; $^{151}\text{Ce}(\beta^-)$ ; $^{153}\text{Pr}(\beta^-)$ [from $^{235}\text{U}(\text{n}, \text{f})$ , from $^{235}\text{U}(\text{n}, \gamma)$ ]; measured $Ee$ , $Ie$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\beta\gamma$ -coin.; deduced endpoint energy, $Q_\beta$ using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131  |



KEYNUMBERS AND KEYWORDS

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**A=147 (continued)**

- <sup>147</sup>Nd    2010CH41    NUCLEAR REACTIONS <sup>239</sup>Pu(n, F)<sup>99</sup>Mo / <sup>95</sup>Zr / <sup>140</sup>Ba / <sup>144</sup>Ce / <sup>147</sup>Nd, E=0.2-2 MeV; measured fission products; deduced fission product yields and its energy dependence. Comparison with ENDF / B-VII.0 library, LANL-ILRR measurements. JOUR NDSBA 111 2923
- <sup>147</sup>Er    2010MA20    RADIOACTIVITY <sup>145,147</sup>Er(ECp), ( $\beta^+$ p)[from <sup>58</sup>Ni(<sup>92</sup>Mo, xn2p), E=383 MeV; measured E $\gamma$ , p $\gamma$ -,  $\gamma\gamma$ -coin, half-lives. <sup>144,146</sup>Dy; deduced levels, J,  $\pi$ . <sup>143,145</sup>Dy, <sup>146</sup>Ho(ECp), ( $\beta^+$ p); measured p $\gamma$ -coin, E $\gamma$ . JOUR PRVCA 81 047301
- 2010MA27    RADIOACTIVITY <sup>147</sup>Er( $\beta^+$ p) [from <sup>58</sup>Ni(<sup>92</sup>Mo, X), E=383 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\gamma$ -particle coin.; <sup>147</sup>Er, <sup>146</sup>Dy deduced T<sub>1/2</sub>. JOUR CPLEE 27 062104

**A=148**

- <sup>148</sup>Xe    2010OH02    NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>148</sup>Cs    2009PA49    NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- <sup>148</sup>La    2008HAZO    RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- <sup>148</sup>Ce    2008HAZO    RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- 2008RAZY    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; <sup>148</sup>Ce, <sup>108</sup>Ru; deduced angular correlation of  $\gamma$  cascades, mixing ratio. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P57,Ramayya

KEYNUMBERS AND KEYWORDS

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**A=148 (continued)**

$^{148}\text{Pr}$	2008KOZO	RADIOACTIVITY $^{148,151}\text{Pr}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $Ee$ , $Ie$ ;e- $\gamma$ -coin.; deduced level properties $E$ , $J$ , $\pi$ , isomeric transition, $^{148}\text{Pr}$ K-conversion coefficient, $^{151}\text{Pr}$ isomeric half-life; A=148-166[from $^{235}\text{U}(\text{n}, \text{f})$ , E=thermal]; measured $E\gamma$ , $I\gamma$ , $Ee$ , $Ie$ ;e- $\gamma$ -coin.; deduced level properties $E$ , $J$ , $\pi$ , isomeric transition. Compared to theoretical values. CONF Nice (Nucl Data for Sci and Technol) Proc,P115
$^{148}\text{Nd}$	2008KOZO	RADIOACTIVITY $^{148,151}\text{Pr}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $Ee$ , $Ie$ ;e- $\gamma$ -coin.; deduced level properties $E$ , $J$ , $\pi$ , isomeric transition, $^{148}\text{Pr}$ K-conversion coefficient, $^{151}\text{Pr}$ isomeric half-life; A=148-166[from $^{235}\text{U}(\text{n}, \text{f})$ , E=thermal]; measured $E\gamma$ , $I\gamma$ , $Ee$ , $Ie$ ;e- $\gamma$ -coin.; deduced level properties $E$ , $J$ , $\pi$ , isomeric transition. Compared to theoretical values. CONF Nice (Nucl Data for Sci and Technol) Proc,P115
$^{148}\text{Pm}$	2010ZI01	NUCLEAR REACTIONS $^{150}\text{Sm}(\mu, \text{X})^{148}\text{Pm} / ^{149}\text{Pm} / ^{150}\text{Pm} / ^{149}\text{Nd}$ , E not given; measured $E\gamma$ , $I\gamma$ ; deduced decay constant, $T_{1/2}$ . JOUR BRSPE 74 825
$^{148}\text{Sm}$	2009KOZU	NUCLEAR REACTIONS $^{95}\text{Mo}(\text{n}, \gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $E$ , $J$ , $\pi$ , pulse-height in resonance regions; $^{147}\text{Sm}(\text{n}, \gamma)$ , E=0-700 eV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $E$ , $J$ , $\pi$ , resonance spacing distributions, reduced neutron width; analyzed width distributions. Compared with Porter-Thomas, Mo measurements using (CIND)ORELA, Sm ones using DANCE at LANSCE. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P424,Koehler
	2010DA13	NUCLEAR REACTIONS $^{150}\text{Sm}(\text{n}, 2\text{n})$ , $(\text{n}, 3\text{n})$ , $(\text{n}, 2\text{n}\gamma)$ , $(\text{n}, 3\text{n}\gamma)$ , E<35 MeV; measured TOF, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with FKK GNASH calculations. JOUR NIMBE 268 114
$^{148}\text{Eu}$	2010IV02	NUCLEAR REACTIONS $^{147,149}\text{Sm}(\text{p}, \gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ ; deduced S-factors. Comparison with NONSMOKER calculations. JOUR RJPHE 55 1006
$^{148}\text{Ho}$	2010K012	NUCLEAR REACTIONS $^{112}\text{Sn}(^{40}\text{Ar}, 3\text{np})$ , $(^{40}\text{Ar}, 2\text{np})$ , E=202, 206, 232 MeV; $^{114}\text{Sn}(^{40}\text{Ar}, 4\text{np})$ , $(^{40}\text{Ar}, 5\text{np})$ , E=202, 206, 232 MeV; measured $E\gamma$ , $I\gamma$ , $ce$ , $\gamma(\theta)$ , $\gamma\gamma$ -, e $\gamma$ -coin, $\gamma\gamma(\text{t})$ , isomer half-lives using OSIRIS-II array. $^{148,149}\text{Ho}$ ; deduced levels, $J$ , $\pi$ , multipolarities, and configurations. Comparison with shell model calculations. JOUR PRVCA 81 044305

**A=149**

$^{149}\text{La}$	2008HAZO	RADIOACTIVITY $^{147,148,149}\text{La}(\beta^-)$ ; $^{151}\text{Ce}(\beta^-)$ ; $^{153}\text{Pr}(\beta^-)$ [from $^{235}\text{U}(\text{n}, \text{f})$ , from $^{235}\text{U}(\text{n}, \gamma)$ ]; measured $Ee$ , $Ie$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\beta\gamma$ -coin.; deduced endpoint energy, $Q_\beta$ using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
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**A=149 (continued)**

<sup>149</sup> Ce	2008HAZO	RADIOACTIVITY <sup>147,148,149</sup> La( $\beta^-$ ); <sup>151</sup> Ce( $\beta^-$ ); <sup>153</sup> Pr( $\beta^-$ ) [from <sup>235</sup> U(n, f), from <sup>235</sup> U(n, $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin., $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$ using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
<sup>149</sup> Pr	2010HW03	RADIOACTIVITY <sup>252</sup> Cf(SF); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma^-$ , (x ray)- $\gamma$ coin, half-lives by $\gamma(t)$ using Gammasphere array. <sup>93</sup> Kr, <sup>151,153</sup> Pr, <sup>157</sup> Sm; deduced levels, J, $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. <sup>96,97,98,99</sup> Y, <sup>149,150</sup> Pr; measured E $\gamma$ . JOUR PRVCA 82 034308
<sup>149</sup> Nd	2010RU09	RADIOACTIVITY <sup>149</sup> Nd( $\beta^-$ ) [from <sup>235</sup> U(n, F), E=thermal and subsequent decays]; measured E $\gamma$ , I $\gamma(t)$ , $\gamma\gamma$ -coin, $\beta\gamma$ -coin. <sup>149</sup> Nd; deduced levels, J, $\pi$ , isomeric transition, T <sub>1/2</sub> , band structure, B(E1), dipole moment; calculated deformation. JOUR ZAANE 45 1
	2010ZI01	NUCLEAR REACTIONS <sup>150</sup> Sm( $\mu$ , X) <sup>148</sup> Pm / <sup>149</sup> Pm / <sup>150</sup> Pm / <sup>149</sup> Nd, E not given; measured E $\gamma$ , I $\gamma$ ; deduced decay constant, T <sub>1/2</sub> . JOUR BRSPE 74 825
<sup>149</sup> Pm	2010RU09	RADIOACTIVITY <sup>149</sup> Nd( $\beta^-$ ) [from <sup>235</sup> U(n, F), E=thermal and subsequent decays]; measured E $\gamma$ , I $\gamma(t)$ , $\gamma\gamma$ -coin, $\beta\gamma$ -coin. <sup>149</sup> Nd; deduced levels, J, $\pi$ , isomeric transition, T <sub>1/2</sub> , band structure, B(E1), dipole moment; calculated deformation. JOUR ZAANE 45 1
	2010ZI01	NUCLEAR REACTIONS <sup>150</sup> Sm( $\mu$ , X) <sup>148</sup> Pm / <sup>149</sup> Pm / <sup>150</sup> Pm / <sup>149</sup> Nd, E not given; measured E $\gamma$ , I $\gamma$ ; deduced decay constant, T <sub>1/2</sub> . JOUR BRSPE 74 825
<sup>149</sup> Sm	2010DA13	NUCLEAR REACTIONS <sup>150</sup> Sm(n, 2n), (n, 3n), (n, 2n $\gamma$ ), (n, 3n $\gamma$ ), E<35 MeV; measured TOF, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with FKK GNASH calculations. JOUR NIMBE 268 114
	2010INZY	RADIOACTIVITY <sup>149</sup> Eu(EC); measured Auger spectra. Sm; deduced ten groups of KLL-Auger. Electrostatic electron spectrometer. CONF St.-Petersburg,P92,Inoyatov
	2010INZZ	RADIOACTIVITY <sup>149</sup> Eu(EC) [Eu-fraction from Er(p, X), E=500 MeV]; measured Ece, Ice of L <sub>(1-3)</sub> $\gamma^-$ , M <sub>(1-3)</sub> -lines. <sup>149</sup> Sm; deduced $\delta$ . Combined electrostatic electron spectrometer. CONF St.-Petersburg,P86,Inoyatov
	2010PEZZ	RADIOACTIVITY <sup>149</sup> Eu(EC); measured Ece, Ice. Sm; deduced $\Gamma$ of L <sub>(1-3)</sub> , M <sub>(1-3)</sub> , N <sub>(1,3)</sub> atomic levels. Combined electrostatic electron spectrometer, $\Delta E_{ce}=0.1$ eV. CONF St.-Petersburg,P88,Perevoshchikov
<sup>149</sup> Eu	2010INZY	RADIOACTIVITY <sup>149</sup> Eu(EC); measured Auger spectra. Sm; deduced ten groups of KLL-Auger. Electrostatic electron spectrometer. CONF St.-Petersburg,P92,Inoyatov
	2010INZZ	RADIOACTIVITY <sup>149</sup> Eu(EC) [Eu-fraction from Er(p, X), E=500 MeV]; measured Ece, Ice of L <sub>(1-3)</sub> $\gamma^-$ , M <sub>(1-3)</sub> -lines. <sup>149</sup> Sm; deduced $\delta$ . Combined electrostatic electron spectrometer. CONF St.-Petersburg,P86,Inoyatov
	2010PEZZ	RADIOACTIVITY <sup>149</sup> Eu(EC); measured Ece, Ice. Sm; deduced $\Gamma$ of L <sub>(1-3)</sub> , M <sub>(1-3)</sub> , N <sub>(1,3)</sub> atomic levels. Combined electrostatic electron spectrometer, $\Delta E_{ce}=0.1$ eV. CONF St.-Petersburg,P88,Perevoshchikov

KEYNUMBERS AND KEYWORDS

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**A=149 (continued)**

<sup>149</sup>Ho      2010K012      NUCLEAR REACTIONS <sup>112</sup>Sn(<sup>40</sup>Ar, 3np), (<sup>40</sup>Ar, 2np), E=202, 206, 232 MeV; <sup>114</sup>Sn(<sup>40</sup>Ar, 4np), (<sup>40</sup>Ar, 5np), E=202, 206, 232 MeV; measured E $\gamma$ , I $\gamma$ , ce,  $\gamma(\theta)$ ,  $\gamma\gamma$ -, e $\gamma$ -coin,  $\gamma\gamma(t)$ , isomer half-lives using OSIRIS-II array. <sup>148,149</sup>Ho; deduced levels, J,  $\pi$ , multipolarities, and configurations. Comparison with shell model calculations. JOUR PRVCA 81 044305

**A=150**

<sup>150</sup>Pr      2010HW03      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array. <sup>93</sup>Kr, <sup>151,153</sup>Pr, <sup>157</sup>Sm; deduced levels, J,  $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. <sup>96,97,98,99</sup>Y, <sup>149,150</sup>Pr; measured E $\gamma$ . JOUR PRVCA 82 034308

<sup>150</sup>Nd      2009DA25      RADIOACTIVITY <sup>48</sup>Ca, <sup>82</sup>Se, <sup>96</sup>Zr, <sup>100</sup>Mo, <sup>116</sup>Cd, <sup>130</sup>Te, <sup>150</sup>Nd( $2\beta^-$ ); measured T<sub>1/2</sub> for zero / two-neutrino  $2\beta^-$ -decay events; deduced effective neutrino mass. JOUR NUPAB 827 495c

                 2009KIZV      RADIOACTIVITY <sup>150</sup>Nd( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>. Kimballton Underground Research Facility. REPT TUNL-XLVIII,P28,Kidd

                 2010K028      ATOMIC MASSES <sup>150</sup>Nd, <sup>150</sup>Sm; measured cyclotron frequencies using JYFLTRAP Penning-trap mass spectrometer; deduced mass difference and Q value for double-beta decay. Comparison with AME 2003. JOUR PRVCA 82 022501

                 2010K028      RADIOACTIVITY <sup>150</sup>Nd( $2\beta^-$ ); deduced Q value from mass difference measurement of <sup>150</sup>Nd and <sup>150</sup>Sm using JYFLTRAP Penning-trap mass spectrometer. Comparison with AME 2003. JOUR PRVCA 82 022501

                 2010SI06      RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te( $2\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270

<sup>150</sup>Pm      2010ZI01      NUCLEAR REACTIONS <sup>150</sup>Sm( $\mu$ , X)<sup>148</sup>Pm / <sup>149</sup>Pm / <sup>150</sup>Pm / <sup>149</sup>Nd, E not given; measured E $\gamma$ , I $\gamma$ ; deduced decay constant, T<sub>1/2</sub>. JOUR BRSPE 74 825

<sup>150</sup>Sm      2009KIZV      RADIOACTIVITY <sup>150</sup>Nd( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced T<sub>1/2</sub>. Kimballton Underground Research Facility. REPT TUNL-XLVIII,P28,Kidd

                 2010K028      ATOMIC MASSES <sup>150</sup>Nd, <sup>150</sup>Sm; measured cyclotron frequencies using JYFLTRAP Penning-trap mass spectrometer; deduced mass difference and Q value for double-beta decay. Comparison with AME 2003. JOUR PRVCA 82 022501

                 2010K028      RADIOACTIVITY <sup>150</sup>Nd( $2\beta^-$ ); deduced Q value from mass difference measurement of <sup>150</sup>Nd and <sup>150</sup>Sm using JYFLTRAP Penning-trap mass spectrometer. Comparison with AME 2003. JOUR PRVCA 82 022501

                 2010SI06      RADIOACTIVITY <sup>100</sup>Mo, <sup>82</sup>Se, <sup>116</sup>Cd, <sup>150</sup>Nd, <sup>96</sup>Zr, <sup>48</sup>Ca, <sup>130</sup>Te( $2\beta^-$ ); measured Ee, Ie; deduced T<sub>1/2</sub>. JOUR PPNPD 64 270

<sup>150</sup>Eu      2010IV02      NUCLEAR REACTIONS <sup>147,149</sup>Sm(p,  $\gamma$ ), E not given; measured E $\gamma$ , I $\gamma$ ; deduced S-factors. Comparison with NONSMOKER calculations. JOUR RJPHE 55 1006

## A=151

- <sup>151</sup>Ce 2008HAZO RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- 2010SI03 RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays. <sup>151</sup>Ce, <sup>153</sup>Nd; deduced levels, J,  $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. <sup>151</sup>Ce, <sup>153</sup>Nd, <sup>155</sup>Sm, <sup>157</sup>Gd, <sup>159</sup>Dy; systematics of bandheads. JOUR PRVCA 81 024313
- <sup>151</sup>Pr 2008HAZO RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- 2008KOZO RADIOACTIVITY <sup>148,151</sup>Pr( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , Ee, Ie;e- $\gamma$ -coin.; deduced level properties E, J,  $\pi$ , isomeric transition, <sup>148</sup>Pr K-conversion coefficient, <sup>151</sup>Pr isomeric half-life; A=148-166[from <sup>235</sup>U(n, f), E=thermal]; measured E $\gamma$ , I $\gamma$ , Ee, Ie;e- $\gamma$ -coin.; deduced level properties E, J,  $\pi$ , isomeric transition. Compared to theoretical values. CONF Nice (Nucl Data for Sci and Technol) Proc,P115
- 2010HW03 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array. <sup>93</sup>Kr, <sup>151,153</sup>Pr, <sup>157</sup>Sm; deduced levels, J,  $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. <sup>96,97,98,99</sup>Y, <sup>149,150</sup>Pr; measured E $\gamma$ . JOUR PRVCA 82 034308
- <sup>151</sup>Nd 2008KOZO RADIOACTIVITY <sup>148,151</sup>Pr( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , Ee, Ie;e- $\gamma$ -coin.; deduced level properties E, J,  $\pi$ , isomeric transition, <sup>148</sup>Pr K-conversion coefficient, <sup>151</sup>Pr isomeric half-life; A=148-166[from <sup>235</sup>U(n, f), E=thermal]; measured E $\gamma$ , I $\gamma$ , Ee, Ie;e- $\gamma$ -coin.; deduced level properties E, J,  $\pi$ , isomeric transition. Compared to theoretical values. CONF Nice (Nucl Data for Sci and Technol) Proc,P115
- <sup>151</sup>Sm 2008DAZW NUCLEAR REACTIONS <sup>150</sup>Sm(n,  $\gamma$ ), E=1-35 MeV; measured E $\gamma$ , I $\gamma$  using GEANIE; deduced  $\sigma$ , spin distribution; calculated  $\sigma$ , spin distribution using GNASH and FKK. Compared to data. CONF Nice (Nucl Data for Sci and Technol) Proc,P231
- 2009HE22 RADIOACTIVITY <sup>151</sup>Sm( $\beta^-$ )[from <sup>150</sup>Sm(n,  $\gamma$ ), E=thermal]; measured E $\gamma$ , I $\gamma$ , and half-life by specific activity method. Comparison with previous half-life measurements. JOUR PRVCA 80 064305
- <sup>151</sup>Eu 2009HE22 RADIOACTIVITY <sup>151</sup>Sm( $\beta^-$ )[from <sup>150</sup>Sm(n,  $\gamma$ ), E=thermal]; measured E $\gamma$ , I $\gamma$ , and half-life by specific activity method. Comparison with previous half-life measurements. JOUR PRVCA 80 064305
- <sup>151</sup>Gd 2010LU01 NUCLEAR REACTIONS <sup>152,154,160</sup>Gd, <sup>93</sup>Nb(n, 2n), <sup>156,157,158</sup>Gd(n, p), <sup>27</sup>Al, <sup>158</sup>Gd(n,  $\alpha$ ), E=13.5-14.8 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127

KEYNUMBERS AND KEYWORDS

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**A=151 (continued)**

- <sup>151</sup>Tb      2008LEZG      NUCLEAR REACTIONS <sup>170</sup>Er(<sup>30</sup>Si, 4n), E=148 MeV; <sup>130</sup>Te(<sup>27</sup>Al, 6n), E=155 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced E, J,  $\pi$ , superdeformation, yrast, superdeformed band; calculated E1 transition strength, simulated superdeformed bands population, yrast. Results on CD only. CONF E.Lansing (NS2008),P38,Leoni
- 2008LEZL      NUCLEAR REACTIONS <sup>130</sup>Te(<sup>27</sup>Al, X)<sup>151</sup>Tb, E=155 MeV; <sup>170</sup>Er(<sup>30</sup>Si, 4n)<sup>196</sup>Pb, E=150 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced number of discrete excited bands. Comparison with cranked shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P403,Leoni

**A=152**

- <sup>152</sup>Ba      20100H02      NUCLEAR REACTIONS Be, Pb(<sup>238</sup>U, F), E=345 MeV / nucleon; measured yields of fission fragments. Z=20-56, A=52-152; measured yields. <sup>71</sup>Mn, <sup>73,74</sup>Fe, <sup>76</sup>Co, <sup>79</sup>Ni, <sup>81,82</sup>Cu, <sup>84,85</sup>Zn, <sup>87</sup>Ga, <sup>90</sup>Ge, <sup>95</sup>Se, <sup>98</sup>Br, <sup>101</sup>Kr, <sup>103</sup>Rb, <sup>106,107</sup>Sr, <sup>108,109</sup>Y, <sup>111,112</sup>Zr, <sup>114,115</sup>Nb, <sup>115,116,117</sup>Mo, <sup>119,120</sup>Tc, <sup>121,122,123,124</sup>Ru, <sup>123,124,125,126</sup>Rh, <sup>127,128</sup>Pd, <sup>133</sup>Cd, <sup>138</sup>Sn, <sup>140</sup>Sb, <sup>143</sup>Te, <sup>145</sup>I, <sup>148</sup>Xe, <sup>152</sup>Ba; measured yields and cross sections, identified new isotopes using RI beam factory at RIKEN,  $\Delta E$ -TOF-B $\rho$  method. JOUR JUPSA 79 073201
- <sup>152</sup>Sm      2009GAZW      NUCLEAR REACTIONS <sup>150</sup>Nd( $\alpha$ , 2n), E=22.8 MeV; measured non-yrast E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; <sup>208</sup>Pb(<sup>152</sup>Sm, <sup>152</sup>Sm'), E=652 MeV; measured Coulomb excitation E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; <sup>152</sup>Sm(n, n' $\gamma$ ), E=1.2-3.0 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>152</sup>Sm(n, n' $\gamma$ ), E=2.05, 2.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$ ; <sup>152</sup>Sm(n, n' $\gamma$ ), E=3.2 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ , d $\sigma(\theta)$ , E, J,  $\pi$ , B(E2), bands, decay schemes. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P391,Garrett
- 2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010JI07      NUCLEAR REACTIONS <sup>152,154</sup>Sm, <sup>184</sup>W, <sup>196</sup>Pt, <sup>208</sup>Pb(<sup>16</sup>O, <sup>16</sup>O'), E(cm)=35-70 MeV; measured  $\sigma(\theta=175^\circ)$ ; calculated  $\sigma$  using CC and single-channel formalisms; deduced nuclear potential diffuseness parameters. JOUR NUPAB 834 189c
- <sup>152</sup>Eu      2008PAZR      NUCLEAR REACTIONS <sup>151</sup>Eu(n,  $\gamma$ ), E=0.2 eV - 100 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ ; <sup>242</sup>Am(n,  $\gamma$ ), E $\approx$ 2-100 eV; measured E $\gamma$ , I $\gamma$ , E(fragment), I(fragment), (fragment)- $\gamma$  coin.; deduced  $\sigma$ . Compared to other data. DICEBOX, GEANT-4, DANCE. CONF Nice (Nucl Data for Sci and Technol) Proc,P491
- 2008ZAZY      RADIOACTIVITY <sup>60</sup>Co( $\beta^-$ ), <sup>152</sup>Eu( $\beta^-$ ), <sup>193</sup>Os( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$ ,  $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455

**A=152 (continued)**

- <sup>152</sup>Gd    2008ZAZY    RADIOACTIVITY <sup>60</sup>Co( $\beta^-$ ), <sup>152</sup>Eu( $\beta^-$ ), <sup>193</sup>Os( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$ ,  $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455
- 2010CH06    NUCLEAR REACTIONS <sup>124</sup>Sn(<sup>28</sup>Si, X)<sup>152</sup>Gd, E=185 MeV; measured E $\gamma$ , I $\gamma$ , evaporation residues; deduced GDR centroid energies and widths for compound nucleus, discrepancy with earlier measurements, damping processes for Giant Dipole Resonance width. JOUR JPGPE 37 055105
- 2010SH16    NUCLEAR REACTIONS <sup>152,154</sup>Sm( $\alpha$ , 4n), E=45 MeV; <sup>152</sup>Sm( $\alpha$ , 2n), E=25 MeV; <sup>154</sup>Sm( $\alpha$ , 3n), E=35 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, polarization. <sup>152,154,155</sup>Gd; deduced levels, J,  $\pi$ , rotational bands, bands. JOUR NUPAB 834 45c
- <sup>152</sup>Yb    2008ESZW    RADIOACTIVITY <sup>152</sup>Yb; measured E $\gamma$ , I $\gamma$ , X-rays;X-rays $\gamma$ -coin using TAS (Total Absorption Spectroscopy); deduced <sup>152</sup>Tm 482 keV level feeding. Attention: Incorrect scale in the figure (MeV instead of keV)! REPT ATOMKI 2008 Annual,P23,Estevez

**A=153**

- <sup>153</sup>Pr    2008HAZO    RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- 2010HW03    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array. <sup>93</sup>Kr, <sup>151,153</sup>Pr, <sup>157</sup>Sm; deduced levels, J,  $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. <sup>96,97,98,99</sup>Y, <sup>149,150</sup>Pr; measured E $\gamma$ . JOUR PRVCA 82 034308
- <sup>153</sup>Nd    2008HAZO    RADIOACTIVITY <sup>147,148,149</sup>La( $\beta^-$ );<sup>151</sup>Ce( $\beta^-$ );<sup>153</sup>Pr( $\beta^-$ ) [from <sup>235</sup>U(n, f), from <sup>235</sup>U(n,  $\gamma$ )]; measured Ee, Ie, E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.,  $\beta\gamma$ -coin.; deduced endpoint energy, Q $\beta$  using folding method. KUR-ISOL on-line mass separator. Compared to other data and to evaluated values. CONF Nice (Nucl Data for Sci and Technol) Proc,P131
- 2010SI03    NUCLEAR REACTIONS <sup>239</sup>Pu(n, F), <sup>241</sup>Am(n, F), E=thermal; measured E $\gamma$ , I $\gamma$ , ce,  $\gamma\gamma$ -, (x ray) $\gamma$ -, (ce) $\gamma$ -, (fragment) $\gamma$ -coin, delayed  $\gamma$ , and half-lives. <sup>153</sup>Nd, <sup>155</sup>Sm; deduced levels, J,  $\pi$ , conversion coefficients, multipolarities, bands, Nilsson configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. JOUR PRVCA 81 024313
- 2010SI03    RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays. <sup>151</sup>Ce, <sup>153</sup>Nd; deduced levels, J,  $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. <sup>151</sup>Ce, <sup>153</sup>Nd, <sup>155</sup>Sm, <sup>157</sup>Gd, <sup>159</sup>Dy; systematics of bandheads. JOUR PRVCA 81 024313

KEYNUMBERS AND KEYWORDS

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**A=153 (continued)**

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| $^{153}\text{Sm}$ | 2010BU06 | NUCLEAR REACTIONS $^{152}\text{Sm}$ , $^{165}\text{Ho}$ , $^{55}\text{Mn}$ , $^{98}\text{Mo}$ , $^{197}\text{Au}(n, \gamma)$ , E=epithermal; measured $E\gamma$ , $I\gamma$ ; deduced resonance energies. Comparison with theoretical calculations. JOUR NIMBE 268 2578   |
| $^{153}\text{Gd}$ | 2010LU01 | NUCLEAR REACTIONS $^{152,154,160}\text{Gd}$ , $^{93}\text{Nb}(n, 2n)$ , $^{156,157,158}\text{Gd}(n, p)$ , $^{27}\text{Al}$ , $^{158}\text{Gd}(n, \alpha)$ , E=13.5-14.8 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127   |
| $^{153}\text{Yb}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{153}\text{Lu}$ | 2008BIZT | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ [from $^{106}\text{Cd}(^{58}\text{Ni}, X)$ , E=cyclotron]; $^{157}\text{Ta}(\alpha)$ [from $^{157}\text{W}(\beta^-)$ [from $^{161}\text{Os}(\alpha)$ ]]; measured $E\alpha$ , $I\alpha(t)$ , ( $^{161}\text{Os}$ ) $\alpha$ -coin. $^{161}\text{Os}$ , $^{157}\text{W}$ deduced $T_{1/2}$ , reduced widths, Q-values. Results on CD only. CONF E.Lansing (NS2008),P81,Bianco  |

**A=154**

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| $^{154}\text{Sm}$ | 2009WIZU | NUCLEAR REACTIONS $^{154}\text{Sm}$ , $^{166}\text{Er}(^{16}\text{O}, ^{16}\text{O}')$ , E=55, 60, 65 MeV; measured conversion electrons $E_e$ , $I_e$ after Coulomb excitation; deduced E, J, $\pi$ , monopole strength, $B(E2)$ , $\beta$ -band, $\gamma$ -band; calculated E, J, $\pi$ , transition strengths. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P539,Wimmer |
|                   | 2010JI07 | NUCLEAR REACTIONS $^{152,154}\text{Sm}$ , $^{184}\text{W}$ , $^{196}\text{Pt}$ , $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O}')$ , E(cm)=35-70 MeV; measured $\sigma(\theta=175^\circ)$ ; calculated $\sigma$ using CC and single-channel formalisms; deduced nuclear potential diffuseness parameters. JOUR NUPAB 834 189c   |
| $^{154}\text{Gd}$ | 2010BA02 | NUCLEAR REACTIONS $^{152}\text{Sm}(\alpha, 2n)$ , $^{147}\text{Sm}(^{16}\text{O}, 3n)$ , E=25, 73 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced the lowest-energy negative-parity bands in $^{160}\text{Yb}$ and $^{154}\text{Gd}$ . Comparison with band-mixing calculations. JOUR PRLTA 104 022501  |
|                   | 2010BA25 | NUCLEAR REACTIONS $^{152}\text{Sm}(\alpha, 2n)$ , E=cyclotron; $^{147}\text{Sm}(^{16}\text{O}, 3n)$ , E=cyclotron; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{160}\text{Yb}$ ; deduced levels, J, $\pi$ . $^{154}\text{Gd}$ , $^{160}\text{Yb}$ ; deduced bands, aligned angular momenta. JOUR NUPAB 834 58c  |
|                   | 2010SC06 | NUCLEAR REACTIONS $^{154,156,158}\text{Gd}(p, p'\gamma)$ , E=22 MeV; measured $E\gamma$ , $I\gamma$ , proton spectra, $\gamma$ -ray emission probabilities using STARS / LiBerACE array. $^{155,157}\text{Gd}(n, \gamma)$ , E=0.01-4 MeV; deduced $\sigma$ by surrogate reaction method using Weisskopf-Ewing and ratio approximations. JOUR PRVCA 81 034608                     |
|                   | 2010SH16 | NUCLEAR REACTIONS $^{152,154}\text{Sm}(\alpha, 4n)$ , E=45 MeV; $^{152}\text{Sm}(\alpha, 2n)$ , E=25 MeV; $^{154}\text{Sm}(\alpha, 3n)$ , E=35 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, polarization. $^{152,154,155}\text{Gd}$ ; deduced levels, J, $\pi$ , rotational bands, bands. JOUR NUPAB 834 45c  |



**A=155**

- <sup>155</sup>Sm 2010LU01 NUCLEAR REACTIONS <sup>152,154,160</sup>Gd, <sup>93</sup>Nb(n, 2n), <sup>156,157,158</sup>Gd(n, p), <sup>27</sup>Al, <sup>158</sup>Gd(n, α), E=13.5-14.8 MeV; measured Eγ, Iγ; deduced σ. Compared with available experimental data. JOUR RAACA 98 127
- 2010SI03 NUCLEAR REACTIONS <sup>239</sup>Pu(n, F), <sup>241</sup>Am(n, F), E=thermal; measured Eγ, Iγ, ce, γγ-, (x ray)γ-, (ce)γ-, (fragment)γ-coin, delayed γ, and half-lives. <sup>153</sup>Nd, <sup>155</sup>Sm; deduced levels, J, π, conversion coefficients, multipolarities, bands, Nilsson configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. JOUR PRVCA 81 024313
- 2010SI03 RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured Eγ, Iγ, γγ-coin, and half-lives using Gammasphere and Eurogam-II arrays. <sup>151</sup>Ce, <sup>153</sup>Nd; deduced levels, J, π, bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. <sup>151</sup>Ce, <sup>153</sup>Nd, <sup>155</sup>Sm, <sup>157</sup>Gd, <sup>159</sup>Dy; systematics of bandheads. JOUR PRVCA 81 024313
- <sup>155</sup>Eu 2010DZ01 NUCLEAR REACTIONS <sup>175</sup>Lu(n, 2n), (n, p), (n, α), E=13.5-14.6 MeV; <sup>176</sup>Lu(n, α)E=13.5-14.6 MeV; <sup>159</sup>Tb(n, p), (n, α), (n, n'α), (n, 2n), E=13.5-14.6 MeV; <sup>181</sup>Ta(n, γ), E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured Eγ, Iγ, σ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610
- <sup>155</sup>Gd 2010AL15 NUCLEAR REACTIONS <sup>156</sup>Gd(p, d), E=25 MeV; measured Eγ, Iγ, Ed, Id, dγ-, dγγ-coin, γd(θ), σ. <sup>155</sup>Gd; deduced levels, J, π, Nilsson configurations, L transfers, C<sub>jl</sub><sup>2</sup> expansion coefficients, occupancies V<sup>2</sup>. DWBA analysis of σ(θ) data. JOUR PRVCA 81 064316
- 2010SH16 NUCLEAR REACTIONS <sup>152,154</sup>Sm(α, 4n), E=45 MeV; <sup>152</sup>Sm(α, 2n), E=25 MeV; <sup>154</sup>Sm(α, 3n), E=35 MeV; measured Eγ, Iγ, γγ-coin, polarization. <sup>152,154,155</sup>Gd; deduced levels, J, π, rotational bands, bands. JOUR NUPAB 834 45c
- <sup>155</sup>Yb 2009SA49 RADIOACTIVITY <sup>159</sup>Hf, <sup>163</sup>Ta, <sup>162,163,164</sup>W(α) [from <sup>106</sup>Cd(<sup>60</sup>Ni, X), E=270 MeV]; measured Eα. JOUR PRVCA 80 054316

**A=156**

- <sup>156</sup>Eu 2010DZ01 NUCLEAR REACTIONS <sup>175</sup>Lu(n, 2n), (n, p), (n, α), E=13.5-14.6 MeV; <sup>176</sup>Lu(n, α)E=13.5-14.6 MeV; <sup>159</sup>Tb(n, p), (n, α), (n, n'α), (n, 2n), E=13.5-14.6 MeV; <sup>181</sup>Ta(n, γ), E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured Eγ, Iγ, σ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610
- 2010LU01 NUCLEAR REACTIONS <sup>152,154,160</sup>Gd, <sup>93</sup>Nb(n, 2n), <sup>156,157,158</sup>Gd(n, p), <sup>27</sup>Al, <sup>158</sup>Gd(n, α), E=13.5-14.8 MeV; measured Eγ, Iγ; deduced σ. Compared with available experimental data. JOUR RAACA 98 127
- <sup>156</sup>Gd 2008NIZU NUCLEAR REACTIONS <sup>116,117,118,119</sup>Sn, <sup>155,156,157,158</sup>Gd(n, γ), E=10-100 keV, 550 keV; measured Eγ, Iγ; deduced σ, dσ. Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615

KEYNUMBERS AND KEYWORDS

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**A=156 (continued)**

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| 2010JE02          | NUCLEAR REACTIONS $^{155}\text{Gd}(n, \gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ ; $^{156}\text{Gd}$ ; deduced energy levels, J, $\pi$ , transition lifetime, B(E2), B(E1), quadrupole moments, odd-spin negative parity band. GAMS4 / 5 Bragg spectrometers. JOUR PRLTA 104 222502  |
| 2010SC06          | NUCLEAR REACTIONS $^{154,156,158}\text{Gd}(p, p'\gamma)$ , E=22 MeV; measured $E\gamma$ , $I\gamma$ , proton spectra, $\gamma$ -ray emission probabilities using STARS / LiBerACE array. $^{155,157}\text{Gd}(n, \gamma)$ , E=0.01-4 MeV; deduced $\sigma$ by surrogate reaction method using Weisskopf-Ewing and ratio approximations. JOUR PRVCA 81 034608   |
| $^{156}\text{Yb}$ | 2009HA42 RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2009HU19 NUCLEAR REACTIONS $^{144}\text{Sm}(^{16}\text{O}, 4n)^{156}\text{Yb}$ , E=102 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, yrast states, J, $\pi$ , energies. JOUR CPCHC 33 s01 148  |
| $^{156}\text{Lu}$ | 2009HA42 RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{156}\text{Hf}$ | 2009HA42 RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=157**

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| $^{157}\text{Sm}$ | 2010HW03 RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (x ray)- $\gamma$ coin, half-lives by $\gamma(t)$ using Gammasphere array. $^{93}\text{Kr}$ , $^{151,153}\text{Pr}$ , $^{157}\text{Sm}$ ; deduced levels, J, $\pi$ , bands, configurations, conversion coefficients, B(E1) / B(E2) ratios. $^{96,97,98,99}\text{Y}$ , $^{149,150}\text{Pr}$ ; measured $E\gamma$ . JOUR PRVCA 82 034308 |
| $^{157}\text{Eu}$ | 2010LU01 NUCLEAR REACTIONS $^{152,154,160}\text{Gd}$ , $^{93}\text{Nb}(n, 2n)$ , $^{156,157,158}\text{Gd}(n, p)$ , $^{27}\text{Al}$ , $^{158}\text{Gd}(n, \alpha)$ , E=13.5-14.8 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127   |
| $^{157}\text{Gd}$ | 2008NIZU NUCLEAR REACTIONS $^{116,117,118,119}\text{Sn}$ , $^{155,156,157,158}\text{Gd}(n, \gamma)$ , E=10-100 keV, 550 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615   |

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**A=157 (continued)**

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|                   | 2010SI03 | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ ; deduced levels, J, $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ , $^{155}\text{Sm}$ , $^{157}\text{Gd}$ , $^{159}\text{Dy}$ ; systematics of bandheads. JOUR PRVCA 81 024313  |
| $^{157}\text{Dy}$ | 2008DIZT | NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130,132}\text{Ba}$ , $^{156}\text{Dy}(\text{n}, \gamma)$ , $E\approx 25$ keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with MACS30 recommended values. CONF Nice (Nucl Data for Sci and Technol) Proc,P575  |
|                   | 2010DI01 | NUCLEAR REACTIONS $^{102}\text{Pd}$ , $^{120}\text{Te}$ , $^{130}\text{Ba}$ , $^{132}\text{Ba}$ , $^{156}\text{Dy}$ , $^{197}\text{Au}(\text{n}, \gamma)$ , $E=0-120$ keV; measured $E\gamma$ , $I\gamma$ , Maxwellian-averaged $\sigma$ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801  |
| $^{157}\text{Hf}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , $E=342, 348$ MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{157}\text{Ta}$ | 2008BIZT | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ [from $^{106}\text{Cd}({}^{58}\text{Ni}, \text{X})$ , $E=\text{cyclotron}$ ]; $^{157}\text{Ta}(\alpha)$ [from $^{157}\text{W}(\beta^-)$ [from $^{161}\text{Os}(\alpha)$ ]]; measured $E\alpha$ , $I\alpha(t)$ , $(^{161}\text{Os})\alpha$ -coin. $^{161}\text{Os}$ , $^{157}\text{W}$ deduced $T_{1/2}$ , reduced widths, Q-values. Results on CD only. CONF E.Lansing (NS2008),P81,Bianco   |
|                   | 2010BI03 | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ , $^{157}\text{W}(\beta^+)$ ; measured decay products; deduced $T_{1/2}$ , $\beta$ -branching. Comparison with shell model calculations. JOUR PYLBB 690 15   |
| $^{157}\text{W}$  | 2008BIZT | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ [from $^{106}\text{Cd}({}^{58}\text{Ni}, \text{X})$ , $E=\text{cyclotron}$ ]; $^{157}\text{Ta}(\alpha)$ [from $^{157}\text{W}(\beta^-)$ [from $^{161}\text{Os}(\alpha)$ ]]; measured $E\alpha$ , $I\alpha(t)$ , $(^{161}\text{Os})\alpha$ -coin. $^{161}\text{Os}$ , $^{157}\text{W}$ deduced $T_{1/2}$ , reduced widths, Q-values. Results on CD only. CONF E.Lansing (NS2008),P81,Bianco   |
|                   | 2010BI03 | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ , $^{157}\text{W}(\beta^+)$ ; measured decay products; deduced $T_{1/2}$ , $\beta$ -branching. Comparison with shell model calculations. JOUR PYLBB 690 15   |

**A=158**

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| $^{158}\text{Eu}$ | 2010LU01 | NUCLEAR REACTIONS $^{152,154,160}\text{Gd}$ , $^{93}\text{Nb}(\text{n}, 2\text{n})$ , $^{156,157,158}\text{Gd}(\text{n}, \text{p})$ , $^{27}\text{Al}$ , $^{158}\text{Gd}(\text{n}, \alpha)$ , $E=13.5-14.8$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127 |
| $^{158}\text{Gd}$ | 2008NIZU | NUCLEAR REACTIONS $^{116,117,118,119}\text{Sn}$ , $^{155,156,157,158}\text{Gd}(\text{n}, \gamma)$ , $E=10-100$ keV, $550$ keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615                   |

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**A=158 (continued)**

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|                   | 2010SC06 | NUCLEAR REACTIONS $^{154,156,158}\text{Gd}(p, p'\gamma)$ , $E=22$ MeV; measured $E\gamma$ , $I\gamma$ , proton spectra, $\gamma$ -ray emission probabilities using STARS / LiBerACE array. $^{155,157}\text{Gd}(n, \gamma)$ , $E=0.01$ -4 MeV; deduced $\sigma$ by surrogate reaction method using Weisskopf-Ewing and ratio approximations. JOUR PRVCA 81 034608   |
| $^{158}\text{Tb}$ | 2010DZ01 | NUCLEAR REACTIONS $^{175}\text{Lu}(n, 2n)$ , $(n, p)$ , $(n, \alpha)$ , $E=13.5$ -14.6 MeV; $^{176}\text{Lu}(n, \alpha)$ $E=13.5$ -14.6 MeV; $^{159}\text{Tb}(n, p)$ , $(n, \alpha)$ , $(n, n'\alpha)$ , $(n, 2n)$ , $E=13.5$ -14.6 MeV; $^{181}\text{Ta}(n, \gamma)$ , $E=0.0019$ , 0.0587, 0.1445, 2.850, 14.340 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610 |
| $^{158}\text{Hf}$ | 2009SA49 | RADIOACTIVITY $^{159}\text{Hf}$ , $^{163}\text{Ta}$ , $^{162,163,164}\text{W}(\alpha)$ [from $^{106}\text{Cd}(^{60}\text{Ni}, X)$ , $E=270$ MeV]; measured $E\alpha$ . JOUR PRVCA 80 054316   |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306  |

**A=159**

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| $^{159}\text{Gd}$ | 2008NIZU | NUCLEAR REACTIONS $^{116,117,118,119}\text{Sn}$ , $^{155,156,157,158}\text{Gd}(n, \gamma)$ , $E=10$ -100 keV, 550 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , $d\sigma$ . Compared to other data, JENDL-3.3, ENDF / B-VI, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P615  |
|                   | 2010DZ01 | NUCLEAR REACTIONS $^{175}\text{Lu}(n, 2n)$ , $(n, p)$ , $(n, \alpha)$ , $E=13.5$ -14.6 MeV; $^{176}\text{Lu}(n, \alpha)$ $E=13.5$ -14.6 MeV; $^{159}\text{Tb}(n, p)$ , $(n, \alpha)$ , $(n, n'\alpha)$ , $(n, 2n)$ , $E=13.5$ -14.6 MeV; $^{181}\text{Ta}(n, \gamma)$ , $E=0.0019$ , 0.0587, 0.1445, 2.850, 14.340 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610 |
|                   | 2010LU01 | NUCLEAR REACTIONS $^{152,154,160}\text{Gd}$ , $^{93}\text{Nb}(n, 2n)$ , $^{156,157,158}\text{Gd}(n, p)$ , $^{27}\text{Al}$ , $^{158}\text{Gd}(n, \alpha)$ , $E=13.5$ -14.8 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared with available experimental data. JOUR RAACA 98 127  |
| $^{159}\text{Dy}$ | 2010SI03 | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ ; deduced levels, $J$ , $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ , $^{155}\text{Sm}$ , $^{157}\text{Gd}$ , $^{159}\text{Dy}$ ; systematics of bandheads. JOUR PRVCA 81 024313              |
| $^{159}\text{Er}$ | 2009L09  | NUCLEAR REACTIONS $^{116}\text{Cd}(^{48}\text{Ca}, X)$ , $E=215$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ using Gammasphere array. $^{159,160}\text{Er}$ ; deduced levels, $J$ , $\pi$ , triaxial strongly deformed (TSD) bands, dynamical moment of inertia plots, and configurations. Calculated potential energy surfaces and single-particle proton and neutron energies (Routhians) with Cranked Nilsson-Strutinsky approach. JOUR PRVCA 80 064322   |
| $^{159}\text{Lu}$ | 2009SA49 | RADIOACTIVITY $^{159}\text{Hf}$ , $^{163}\text{Ta}$ , $^{162,163,164}\text{W}(\alpha)$ [from $^{106}\text{Cd}(^{60}\text{Ni}, X)$ , $E=270$ MeV]; measured $E\alpha$ . JOUR PRVCA 80 054316   |
|                   | 2009SH48 | NUCLEAR REACTIONS $^{144}\text{Sm}(^{19}\text{F}, 4n)^{159}\text{Lu}$ , $E=106$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma$ - $\gamma$ -coin.; deduced high-spin states, level scheme, $J$ , $\pi$ , energies, rotational bands. JOUR CPCHC 33 s01 164   |

KEYNUMBERS AND KEYWORDS

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**A=159 (continued)**

- <sup>159</sup>Hf    2009SA49    RADIOACTIVITY <sup>159</sup>Hf, <sup>163</sup>Ta, <sup>162,163,164</sup>W( $\alpha$ ) [from <sup>106</sup>Cd(<sup>60</sup>Ni, X), E=270 MeV]; measured E $\alpha$ . JOUR PRVCA 80 054316
- 2010SC02    RADIOACTIVITY <sup>162,163</sup>W, <sup>163,165</sup>Re, <sup>165,166,167</sup>Os, <sup>169,171</sup>Ir, <sup>171,172</sup>Pt, <sup>172</sup>Au( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced half-lives. <sup>171</sup>Pt( $\alpha$ ); measured branching ratio. JOUR PRVCA 81 014306
- <sup>159</sup>Ta    2010SC02    RADIOACTIVITY <sup>162,163</sup>W, <sup>163,165</sup>Re, <sup>165,166,167</sup>Os, <sup>169,171</sup>Ir, <sup>171,172</sup>Pt, <sup>172</sup>Au( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced half-lives. <sup>171</sup>Pt( $\alpha$ ); measured branching ratio. JOUR PRVCA 81 014306

**A=160**

- <sup>160</sup>Dy    2010B0ZZ    RADIOACTIVITY <sup>160</sup>Ho(EC); measured Ece, Ice. <sup>160</sup>Dy; deduced E0-level. Magnetic spectrograph. CONF  
St.-Petersburg,P93,Bogachenko
- 2010G009    NUCLEAR REACTIONS <sup>161,162,163</sup>Dy(<sup>3</sup>He, <sup>3</sup>He'), (<sup>3</sup>He,  $\alpha$ ), E=45 MeV; <sup>164</sup>Dy(<sup>3</sup>He, <sup>3</sup>He'), E=38 MeV; measured E $\gamma$ , I $\gamma$ . <sup>160,161,163</sup>Dy(n,  $\gamma$ ), E<600 keV; deduced  $\sigma$  using the external surrogate ratio method (SRM). JOUR PRVCA 81 054606
- <sup>160</sup>Ho    2010B0ZZ    RADIOACTIVITY <sup>160</sup>Ho(EC); measured Ece, Ice. <sup>160</sup>Dy; deduced E0-level. Magnetic spectrograph. CONF  
St.-Petersburg,P93,Bogachenko
- 2010VAZZ    RADIOACTIVITY <sup>160</sup>Er(EC), <sup>160</sup>Ho(IT); measured E $\gamma$ , I $\gamma$ , Ece, Ice, x-rays, T<sub>1/2</sub>. <sup>160</sup>Ho; deduced level, J,  $\pi$ , multipolarities. YASNAPP-2 facility, two-quasiparticle structure suggested. CONF  
St.-Petersburg,P89,Vaganov
- <sup>160</sup>Er    2009L09    NUCLEAR REACTIONS <sup>116</sup>Cd(<sup>48</sup>Ca, X), E=215 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$  using Gammasphere array. <sup>159,160</sup>Er; deduced levels, J,  $\pi$ , triaxial strongly deformed (TSD) bands, dynamical moment of inertia plots, and configurations. Calculated potential energy surfaces and single-particle proton and neutron energies (Routhians) with Cranked Nilsson-Strutinsky approach. JOUR PRVCA 80 064322
- 2010VAZZ    RADIOACTIVITY <sup>160</sup>Er(EC), <sup>160</sup>Ho(IT); measured E $\gamma$ , I $\gamma$ , Ece, Ice, x-rays, T<sub>1/2</sub>. <sup>160</sup>Ho; deduced level, J,  $\pi$ , multipolarities. YASNAPP-2 facility, two-quasiparticle structure suggested. CONF  
St.-Petersburg,P89,Vaganov
- <sup>160</sup>Yb    2010BA02    NUCLEAR REACTIONS <sup>152</sup>Sm( $\alpha$ , 2n), <sup>147</sup>Sm(<sup>16</sup>O, 3n), E=25, 73 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced the lowest-energy negative-parity bands in <sup>160</sup>Yb and <sup>154</sup>Gd. Comparison with band-mixing calculations. JOUR PRLTA 104 022501
- 2010BA25    NUCLEAR REACTIONS <sup>152</sup>Sm( $\alpha$ , 2n), E=cyclotron; <sup>147</sup>Sm(<sup>16</sup>O, 3n), E=cyclotron; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>160</sup>Yb; deduced levels, J,  $\pi$ . <sup>154</sup>Gd, <sup>160</sup>Yb; deduced bands, aligned angular momenta. JOUR NUPAB 834 58c

KEYNUMBERS AND KEYWORDS

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**A=160 (continued)**

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| $^{160}\text{Hf}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2009SA49 | RADIOACTIVITY $^{159}\text{Hf}$ , $^{163}\text{Ta}$ , $^{162,163,164}\text{W}(\alpha)$ [from $^{106}\text{Cd}({}^{60}\text{Ni}, \text{X})$ , E=270 MeV]; measured $E\alpha$ . JOUR PRVCA 80 054316   |
| $^{160}\text{Ta}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{160}\text{W}$  | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{160}\text{Re}$ | 2011DA01 | RADIOACTIVITY $^{160}\text{Re}(\text{IT})$ [from $^{106}\text{Cd}({}^{58}\text{Ni}, \text{X})$ , E=290, 300 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ and $\alpha\gamma$ -coin.; deduced a new high-spin isomeric state, $T_{1/2}$ . Comparison with shell model calculations. JOUR PYLBB 695 78   |

**A=161**

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| $^{161}\text{Dy}$ | 2010G009 | NUCLEAR REACTIONS $^{161,162,163}\text{Dy}({}^3\text{He}, {}^3\text{He}')$ , $({}^3\text{He}, \alpha)$ , E=45 MeV; $^{164}\text{Dy}({}^3\text{He}, {}^3\text{He}')$ , E=38 MeV; measured $E\gamma$ , $I\gamma$ . $^{160,161,163}\text{Dy}(\text{n}, \gamma)$ , E<600 keV; deduced $\sigma$ using the external surrogate ratio method (SRM). JOUR PRVCA 81 054606   |
| $^{161}\text{Ta}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306   |
| $^{161}\text{W}$  | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}({}^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

KEYNUMBERS AND KEYWORDS

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**A=161 (continued)**

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| 2010SC02          |          | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306   |
| $^{161}\text{Os}$ | 2008BIZT | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ [from $^{106}\text{Cd}(^{58}\text{Ni}, \text{X})$ , E=cyclotron]; $^{157}\text{Ta}(\alpha)$ [from $^{157}\text{W}(\beta^-)$ [from $^{161}\text{Os}(\alpha)$ ]]; measured $E\alpha$ , $I\alpha(t)$ , $(^{161}\text{Os})\alpha$ -coin. $^{161}\text{Os}$ , $^{157}\text{W}$ deduced $T_{1/2}$ , reduced widths, Q-values. Results on CD only. CONF E.Lansing (NS2008),P81,Bianco |
|                   | 2010BI03 | NUCLEAR REACTIONS $^{106}\text{Cd}(^{58}\text{Ni}, 3n)$ , E=290, 310 MeV; measured reaction products; deduced $\alpha$ spectra, $\alpha$ -branching, $T_{1/2}$ , fine structure, ground state J, $\pi$ . JOUR PYLBB 690 15   |
|                   | 2010BI03 | RADIOACTIVITY $^{161}\text{Os}(\alpha)$ , $^{157}\text{W}(\beta^+)$ ; measured decay products; deduced $T_{1/2}$ , $\beta$ -branching. Comparison with shell model calculations. JOUR PYLBB 690 15   |

**A=162**

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| $^{162}\text{Dy}$ | 2010G009 | NUCLEAR REACTIONS $^{161,162,163}\text{Dy}(^3\text{He}, ^3\text{He}')$ , $(^3\text{He}, \alpha)$ , E=45 MeV; $^{164}\text{Dy}(^3\text{He}, ^3\text{He}')$ , E=38 MeV; measured $E\gamma$ , $I\gamma$ . $^{160,161,163}\text{Dy}(n, \gamma)$ , E<600 keV; deduced $\sigma$ using the external surrogate ratio method (SRM). JOUR PRVCA 81 054606   |
|                   | 2010S003 | NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, J, $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{162}\text{Tm}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{162}\text{Hf}$ | 2009SA49 | NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, 3p)$ , E=270 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma(\text{recoil})$ -, $\gamma\alpha$ -coin, $\gamma\gamma(\theta)$ , DCO using JUROGAM array, RITU separator and GREAT spectrometer. $^{163}\text{Ta}$ ; deduced levels, J, $\pi$ , multipolarities, rotational bands, and configurations. Comparison with cranked shell model and total-Routhian surface calculations. $^{162,163,164}\text{W}$ , $^{162}\text{Hf}$ ; measured $E\gamma$ . JOUR PRVCA 80 054316   |
| $^{162}\text{W}$  | 2009SA49 | NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, 3p)$ , E=270 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma(\text{recoil})$ -, $\gamma\alpha$ -coin, $\gamma\gamma(\theta)$ , DCO using JUROGAM array, RITU separator and GREAT spectrometer. $^{163}\text{Ta}$ ; deduced levels, J, $\pi$ , multipolarities, rotational bands, and configurations. Comparison with cranked shell model and total-Routhian surface calculations. $^{162,163,164}\text{W}$ , $^{162}\text{Hf}$ ; measured $E\gamma$ . JOUR PRVCA 80 054316   |

KEYNUMBERS AND KEYWORDS

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**A=162 (continued)**

- 2009SA49 RADIOACTIVITY  $^{159}\text{Hf}$ ,  $^{163}\text{Ta}$ ,  $^{162,163,164}\text{W}(\alpha)$  [from  $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ ,  $E=270$  MeV]; measured  $E\alpha$ . JOUR PRVCA 80 054316
- 2010SC02 RADIOACTIVITY  $^{162,163}\text{W}$ ,  $^{163,165}\text{Re}$ ,  $^{165,166,167}\text{Os}$ ,  $^{169,171}\text{Ir}$ ,  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced half-lives.  $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306

**A=163**

- $^{163}\text{Dy}$  2010G009 NUCLEAR REACTIONS  $^{161,162,163}\text{Dy}(^3\text{He}, ^3\text{He}')$ ,  $(^3\text{He}, \alpha)$ ,  $E=45$  MeV;  $^{164}\text{Dy}(^3\text{He}, ^3\text{He}')$ ,  $E=38$  MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{160,161,163}\text{Dy}(n, \gamma)$ ,  $E<600$  keV; deduced  $\sigma$  using the external surrogate ratio method (SRM). JOUR PRVCA 81 054606
- 2010NY01 NUCLEAR REACTIONS  $^{164}\text{Dy}(^3\text{He}, ^3\text{He}')$ ,  $(^3\text{He}, \alpha)$ ,  $E=38$  MeV; measured continuum  $\gamma$  spectra, particle spectra, and (particle) $\gamma$ -coin; deduced level density, radiative strength functions, contributions from giant dipole resonances, and integrated B(M1) strength of pygmy resonances. JOUR PRVCA 81 024325
- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ ,  $E=460$  MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E\gamma$ .  $Z=64-72$ ,  $N=94-108$ ; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{163}\text{Ta}$  2009SA49 NUCLEAR REACTIONS  $^{106}\text{Cd}(^{60}\text{Ni}, 3p)$ ,  $E=270$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\gamma(\text{recoil})$ -,  $\gamma\alpha$ -coin,  $\gamma\gamma(\theta)$ , DCO using JUROGAM array, RITU separator and GREAT spectrometer.  $^{163}\text{Ta}$ ; deduced levels, J,  $\pi$ , multipolarities, rotational bands, and configurations. Comparison with cranked shell model and total-Routhian surface calculations.  $^{162,163,164}\text{W}$ ,  $^{162}\text{Hf}$ ; measured  $E\gamma$ . JOUR PRVCA 80 054316
- 2009SA49 RADIOACTIVITY  $^{159}\text{Hf}$ ,  $^{163}\text{Ta}$ ,  $^{162,163,164}\text{W}(\alpha)$  [from  $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ ,  $E=270$  MeV]; measured  $E\alpha$ . JOUR PRVCA 80 054316
- $^{163}\text{W}$  2008ERZX NUCLEAR REACTIONS  $^{106}\text{Cd}(^{60}\text{Ni}, \text{xn}2p)$ ,  $E=270$  MeV; measured A(particle), Z(particle), E(particle),  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{163}\text{W}$  deduced levels, J,  $\pi$ , high-spin states, yrast band. Results on CD only. CONF E.Lansing (NS2008),P101,Erturk
- 2009HA42 RADIOACTIVITY  $^{160,160m}\text{Ta}$ ,  $^{164,164m}\text{Re}$ ,  $^{168,168m}\text{Ir}$ ,  $^{172}\text{Au}(\alpha)$ [from  $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ ,  $E=342, 348$  MeV]; measured  $E\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives.  $^{157,160}\text{Hf}$ ,  $^{160,164}\text{W}$ ,  $^{164,165,167,168}\text{Os}$ ,  $^{168,169,171}\text{Ir}$ ,  $^{169,170,171,172}\text{Pt}$ ,  $^{164,165}\text{Re}$ ,  $^{171,173}\text{Au}$ ,  $^{172,173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs.  $^{160}\text{Ta}$ ,  $^{164}\text{Re}$ ,  $^{168}\text{Ir}$ ,  $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310



**A=163 (continued)**

- 2009SA49 NUCLEAR REACTIONS  $^{106}\text{Cd}(^{60}\text{Ni}, 3\text{p})$ , E=270 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\gamma(\text{recoil})$ -,  $\gamma\alpha$ -coin,  $\gamma\gamma(\theta)$ , DCO using JUROGAM array, RITU separator and GREAT spectrometer.  $^{163}\text{Ta}$ ; deduced levels, J,  $\pi$ , multipolarities, rotational bands, and configurations. Comparison with cranked shell model and total-Routhian surface calculations.  $^{162,163,164}\text{W}$ ,  $^{162}\text{Hf}$ ; measured  $E\gamma$ . JOUR PRVCA 80 054316
- 2009SA49 RADIOACTIVITY  $^{159}\text{Hf}$ ,  $^{163}\text{Ta}$ ,  $^{162,163,164}\text{W}(\alpha)$  [from  $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ , E=270 MeV]; measured  $E\alpha$ . JOUR PRVCA 80 054316
- 2010SC02 NUCLEAR REACTIONS  $^{106}\text{Cd}(^{60}\text{Ni}, \text{n}2\text{p})^{163}\text{W}$ , E=270 MeV;  $^{92}\text{Mo}(^{78}\text{Kr}, \text{n}\alpha 2\text{p})^{163}\text{W}$ , E=380 MeV;  $^{92}\text{Mo}(^{78}\text{Kr}, \text{n}2\text{p})^{167}\text{Os}$ , E=357, 365 MeV;  $^{96}\text{Ru}(^{78}\text{Kr}, \text{n}2\text{p})^{171}\text{Pt}$ , E=348 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using the JUROGAM array, conversion electrons,  $\sigma$ ; deduced multipolarities, internal conversion coefficients.  $^{163}\text{W}$ ,  $^{167}\text{Os}$ ,  $^{171}\text{Pt}$ ; deduced levels, J,  $\pi$ , half-lives. JOUR PRVCA 81 014306
- 2010SC02 RADIOACTIVITY  $^{162,163}\text{W}$ ,  $^{163,165}\text{Re}$ ,  $^{165,166,167}\text{Os}$ ,  $^{169,171}\text{Ir}$ ,  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced half-lives.  $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306
- 2010TH01 NUCLEAR REACTIONS  $^{106}\text{Cd}(^{60}\text{Ni}, \text{n}2\text{p})$ , E=270 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using the JUROGAM array, DCO ratios.  $^{163}\text{W}$ ; deduced levels, J,  $\pi$ , bands, multipolarities, configurations. Comparisons with cranked Woods-Saxon shell-model calculations. JOUR PRVCA 81 014307
- $^{163}\text{Re}$  2010SC02 RADIOACTIVITY  $^{162,163}\text{W}$ ,  $^{163,165}\text{Re}$ ,  $^{165,166,167}\text{Os}$ ,  $^{169,171}\text{Ir}$ ,  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced half-lives.  $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306

**A=164**

- $^{164}\text{Dy}$  2010G009 NUCLEAR REACTIONS  $^{161,162,163}\text{Dy}(^3\text{He}, ^3\text{He}')$ , ( $^3\text{He}, \alpha$ ), E=45 MeV;  $^{164}\text{Dy}(^3\text{He}, ^3\text{He}')$ , E=38 MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{160,161,163}\text{Dy}(\text{n}, \gamma)$ , E<600 keV; deduced  $\sigma$  using the external surrogate ratio method (SRM). JOUR PRVCA 81 054606
- 2010NY01 NUCLEAR REACTIONS  $^{164}\text{Dy}(^3\text{He}, ^3\text{He}')$ , ( $^3\text{He}, \alpha$ ), E=38 MeV; measured continuum  $\gamma$  spectra, particle spectra, and (particle) $\gamma$ -coin; deduced level density, radiative strength functions, contributions from giant dipole resonances, and integrated B(M1) strength of pygmy resonances. JOUR PRVCA 81 024325
- 2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310

KEYNUMBERS AND KEYWORDS

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**A=164 (continued)**

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| $^{164}\text{Tm}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{164}\text{W}$  | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2009SA49 | NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, 3p)$ , E=270 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma(\text{recoil})$ -, $\gamma\alpha$ -coin, $\gamma\gamma(\theta)$ , DCO using JUROGAM array, RITU separator and GREAT spectrometer. $^{163}\text{Ta}$ ; deduced levels, J, $\pi$ , multipolarities, rotational bands, and configurations. Comparison with cranked shell model and total-Routhian surface calculations. $^{162,163,164}\text{W}$ , $^{162}\text{Hf}$ ; measured $E\gamma$ . JOUR PRVCA 80 054316  |
|                   | 2009SA49 | RADIOACTIVITY $^{159}\text{Hf}$ , $^{163}\text{Ta}$ , $^{162,163,164}\text{W}(\alpha)$ [from $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ , E=270 MeV]; measured $E\alpha$ . JOUR PRVCA 80 054316   |
| $^{164}\text{Re}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
| $^{164}\text{Os}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=165**

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| $^{165}\text{Dy}$ | 2010S003 | NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, J, $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{165}\text{Er}$ | 2009WA23 | NUCLEAR REACTIONS $^{160}\text{Gd}(^9\text{Be}, 4n)$ , E=42, 45 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; $^{165}\text{Er}$ ; deduced levels, J, $\pi$ , bands, B(E1), octupole deformation. JOUR CPCHC 33 629  |

KEYNUMBERS AND KEYWORDS

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**A=165 (continued)**

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| $^{165}\text{Tm}$ | 2010TA03 | NUCLEAR REACTIONS $^{167}\text{Er}$ , $^{168}\text{Er}(p, n)$ , $^{167}\text{Er}(p, n)$ , $^{166}\text{Er}(p, 2n)$ , $\text{Ti}(p, X)^{48}\text{V}$ , $E < 15$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II, TALYS nuclear reaction model codes. JOUR ARISE 68 250  |
| $^{165}\text{Re}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , $E=342, 348$ MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306  |
| $^{165}\text{Os}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , $E=342, 348$ MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306  |

**A=166**

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|-------------------|----------|---|
| $^{166}\text{Dy}$ | 2010S003 | NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, X)^{168}\text{Dy}$ / $^{170}\text{Dy}$ , $E=460$ MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, $J$ , $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced $4+$ to $2+$ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . $Z=64-72$ , $N=94-108$ ; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{166}\text{Ho}$ | 2010BU06 | NUCLEAR REACTIONS $^{152}\text{Sm}$ , $^{165}\text{Ho}$ , $^{55}\text{Mn}$ , $^{98}\text{Mo}$ , $^{197}\text{Au}(n, \gamma)$ , $E=\text{epithermal}$ ; measured $E\gamma$ , $I\gamma$ ; deduced resonance energies. Comparison with theoretical calculations. JOUR NIMBE 268 2578   |
| $^{166}\text{Er}$ | 2009WIZU | NUCLEAR REACTIONS $^{154}\text{Sm}$ , $^{166}\text{Er}(^{16}\text{O}, ^{16}\text{O}')$ , $E=55, 60, 65$ MeV; measured conversion electrons $E_e$ , $I_e$ after Coulomb excitation; deduced $E$ , $J$ , $\pi$ , monopole strength, $B(E2)$ , $\beta$ -band, $\gamma$ -band; calculated $E$ , $J$ , $\pi$ , transition strengths. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P539,Wimmer  |
| $^{166}\text{Tm}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(IT)$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, $J$ , $\pi$ . JOUR NUPAB 834 32c  |

KEYNUMBERS AND KEYWORDS

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**A=166 (continued)**

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| $^{166}\text{Lu}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{166}\text{Os}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306   |

**A=167**

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| $^{167}\text{Dy}$ | 2010S003 | NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy}$ / $^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, J, $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{167}\text{Tm}$ | 2010TA03 | NUCLEAR REACTIONS $^{167}\text{Er}$ , $^{168}\text{Er}(p, n)$ , $^{167}\text{Er}(p, n)$ , $^{166}\text{Er}(p, 2n)$ , $\text{Ti}(p, \text{X})^{48}\text{V}$ , E<15 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II, TALYS nuclear reaction model codes. JOUR ARISE 68 250   |
| $^{167}\text{Re}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310  |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306  |
| $^{167}\text{Os}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310  |

KEYNUMBERS AND KEYWORDS

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**A=167 (continued)**

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| 2010SC02          | NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, n2p)^{163}\text{W}$ , E=270 MeV; $^{92}\text{Mo}(^{78}\text{Kr}, n\alpha2p)^{163}\text{W}$ , E=380 MeV; $^{92}\text{Mo}(^{78}\text{Kr}, n2p)^{167}\text{Os}$ , E=357, 365 MeV; $^{96}\text{Ru}(^{78}\text{Kr}, n2p)^{171}\text{Pt}$ , E=348 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using the JUROGAM array, conversion electrons, $\sigma$ ; deduced multipolarities, internal conversion coefficients. $^{163}\text{W}$ , $^{167}\text{Os}$ , $^{171}\text{Pt}$ ; deduced levels, J, $\pi$ , half-lives. JOUR PRVCA 81 014306  |
| 2010SC02          | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306   |
| $^{167}\text{Ir}$ | 2009HA42 RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=168**

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|-------------------|---|
| $^{168}\text{Dy}$ | 2010S003 NUCLEAR REACTIONS $^{170}\text{Er}(^{82}\text{Se}, X)^{168}\text{Dy}$ / $^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. $^{168}\text{Dy}$ ; deduced levels, J, $\pi$ , rotational bands, moments of inertia. $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition. $^{170}\text{Er}$ ; measured $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ , $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| $^{168}\text{Er}$ | 2010DR02 NUCLEAR REACTIONS $^{170}\text{Er}(^{136}\text{Xe}, X)^{168}\text{Er}$ / $^{170}\text{Er}$ / $^{172}\text{Er}$ , E=830 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ , $\gamma\gamma(t)$ , and isomer half-lives using Gammasphere array. $^{168,170,172}\text{Er}$ ; deduced levels, J, $\pi$ , rotational bands, multipolarities, B(E1), B(M1), B(E2), K-hindrance factors, configurations, quasiparticle structures, and $g_K$ - $g_R$ . JOUR PRVCA 81 054313  |
| $^{168}\text{Tm}$ | 2010TA03 NUCLEAR REACTIONS $^{167}\text{Er}$ , $^{168}\text{Er}(p, n)$ , $^{167}\text{Er}(p, n)$ , $^{166}\text{Er}(p, 2n)$ , $\text{Ti}(p, X)^{48}\text{V}$ , E<15 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II, TALYS nuclear reaction model codes. JOUR ARISE 68 250   |
| $^{168}\text{Lu}$ | 2010ZH26 RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Tb}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{168}\text{Hf}$ | 2008YAZN NUCLEAR REACTIONS $^{96}\text{Zr}(^{76}\text{Ge}, 4n)$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, thin, thick target; deduced E, J, $\pi$ , deformation, inertia moment, bands, superdeformation. Results on CD only. CONF E.Lansing (NS2008),P41,Yadav   |

## A=168 (continued)

- 2009PIZX NUCLEAR REACTIONS  $^{124}\text{Sn}(^{48}\text{Ti}, 4n)$ , E=190 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ; deduced quadrupole moments, half-life along ground-state band, E0, E2 strengths. Compared with calculations of Bonnet et al. using X(5) and CBS. Confined  $\beta$ -soft (CBS) rotor model. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P524,Pietralla
- 2009YA21 NUCLEAR REACTIONS  $^{96}\text{Zr}(^{76}\text{Ge}, 4n)$ , E=310 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ (DCO) using Gammasphere array.  $^{168}\text{Hf}$ ; deduced levels, J,  $\pi$ , bands, multipolarity, B(M1) / B(E2) ratios, configurations, and enhanced deformation band. Comparison with cranked shell-model calculations. JOUR PRVCA 80 064306
- $^{168}\text{Ta}$  2010WA36 NUCLEAR REACTIONS  $^{120}\text{Sn}(^{51}\text{V}, 3n)$ , E=235 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{168}\text{Ta}$ , deduced levels, J,  $\pi$ , B(M1) / B(E2) values, energy staggerings of signature partners, alignments, two-quasiparticle bands, configurations. Comparisons with cranked shell model calculations, and with band structures of  $^{162,164,166}\text{Tm}$ ,  $^{164,166,169}\text{Lu}$ ,  $^{167}\text{Hf}$  and  $^{166,167,170}\text{Ta}$ . JOUR PRVCA 82 034315
- $^{168}\text{Os}$  2009AN20 RADIOACTIVITY  $^{180,181}\text{Pb}(\alpha)$  [from  $^{144}\text{Sm}(^{40}\text{Ca}, xn)$ , E=196 MeV]; measured  $E\alpha$ ,  $I\alpha$ , (evaporation residues) $\alpha$ -,  $\alpha\gamma$ -coin,  $\alpha$ - $\alpha$  correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and  $\alpha$ -reduced widths.  $^{177}\text{Hg}$ ; deduced levels, J,  $\pi$ .  $^{172,173}\text{Pt}$ ,  $^{176,177}\text{Hg}(\alpha)$ ; measured  $E\alpha$ , half-life.  $^{178}\text{Hg}$ ,  $^{182}\text{Pb}$ ; measured  $E\alpha$ . JOUR PRVCA 80 054322
- 2009HA42 RADIOACTIVITY  $^{160,160m}\text{Ta}$ ,  $^{164,164m}\text{Re}$ ,  $^{168,168m}\text{Ir}$ ,  $^{172}\text{Au}(\alpha)$ [from  $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured  $E\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives.  $^{157,160}\text{Hf}$ ,  $^{160,164}\text{W}$ ,  $^{164,165,167,168}\text{Os}$ ,  $^{168,169,171}\text{Ir}$ ,  $^{169,170,171,172}\text{Pt}$ ,  $^{164,165}\text{Re}$ ,  $^{171,173}\text{Au}$ ,  $^{172,173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs.  $^{160}\text{Ta}$ ,  $^{164}\text{Re}$ ,  $^{168}\text{Ir}$ ,  $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310
- 2010SC02 RADIOACTIVITY  $^{162,163}\text{W}$ ,  $^{163,165}\text{Re}$ ,  $^{165,166,167}\text{Os}$ ,  $^{169,171}\text{Ir}$ ,  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced half-lives.  $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306
- $^{168}\text{Ir}$  2009HA42 RADIOACTIVITY  $^{160,160m}\text{Ta}$ ,  $^{164,164m}\text{Re}$ ,  $^{168,168m}\text{Ir}$ ,  $^{172}\text{Au}(\alpha)$ [from  $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured  $E\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives.  $^{157,160}\text{Hf}$ ,  $^{160,164}\text{W}$ ,  $^{164,165,167,168}\text{Os}$ ,  $^{168,169,171}\text{Ir}$ ,  $^{169,170,171,172}\text{Pt}$ ,  $^{164,165}\text{Re}$ ,  $^{171,173}\text{Au}$ ,  $^{172,173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs.  $^{160}\text{Ta}$ ,  $^{164}\text{Re}$ ,  $^{168}\text{Ir}$ ,  $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310
- 2010SC02 RADIOACTIVITY  $^{162,163}\text{W}$ ,  $^{163,165}\text{Re}$ ,  $^{165,166,167}\text{Os}$ ,  $^{169,171}\text{Ir}$ ,  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced half-lives.  $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306
- $^{168}\text{Pt}$  2009HA42 RADIOACTIVITY  $^{160,160m}\text{Ta}$ ,  $^{164,164m}\text{Re}$ ,  $^{168,168m}\text{Ir}$ ,  $^{172}\text{Au}(\alpha)$ [from  $^{96}\text{Ru}(^{78}\text{Kr}, X)$ , E=342, 348 MeV]; measured  $E\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives.  $^{157,160}\text{Hf}$ ,  $^{160,164}\text{W}$ ,  $^{164,165,167,168}\text{Os}$ ,  $^{168,169,171}\text{Ir}$ ,  $^{169,170,171,172}\text{Pt}$ ,  $^{164,165}\text{Re}$ ,  $^{171,173}\text{Au}$ ,  $^{172,173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs.  $^{160}\text{Ta}$ ,  $^{164}\text{Re}$ ,  $^{168}\text{Ir}$ ,  $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310

## A=169

- $^{169}\text{Dy}$  2010S003 NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, \text{X})^{168}\text{Dy} / ^{170}\text{Dy}$ , E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array.  $^{168}\text{Dy}$ ; deduced levels, J,  $\pi$ , rotational bands, moments of inertia.  $^{170}\text{Dy}$ ; deduced 4+ to 2+ transition.  $^{170}\text{Er}$ ; measured  $E\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations.  $^{81,82,83,84,85,86,87,88,89,90}\text{Kr}$ ,  $^{162,163,164,165,166,167,168,169,170,171}\text{Dy}$ ; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310
- $^{169}\text{Ho}$  2010DR05 NUCLEAR REACTIONS  $^{170}\text{Er}(^{136}\text{Xe}, \text{X})$ , E=830 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, delayed spectra, half-lives and branching ratios using Gammasphere array.  $^{169}\text{Ho}$ ,  $^{171}\text{Tm}$ ; deduced levels, J,  $\pi$ , isomer, transition strengths and hindrances,  $g_K$ - $g_R$  values, bands and quasiparticle configurations. JOUR PRVCA 82 034317
- $^{169}\text{Yb}$  2008KIZP NUCLEAR REACTIONS  $\text{Er}(\alpha, \text{x})^{169}\text{Yb}$ , E $\approx$ 0-36 MeV;  $\text{Yb}(\alpha, \text{x})^{169}\text{Yb}$ , E $\approx$ 18-38 MeV;  $\text{Yb}(\alpha, \text{x})^{177}\text{Lu}$ , E $\approx$ 8-38 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , yields; calculated  $\sigma$  using ALICE-IPPE. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1371
- 2010MA50 NUCLEAR REACTIONS  $^{168}\text{Yb}$ ,  $^{180}\text{W}$ ,  $^{184}\text{Os}$ ,  $^{190}\text{Pt}$ ,  $^{196}\text{Hg}(\text{n}, \gamma)$ , E=spectrum[neutrons from  $^7\text{Li}(\text{p}, \text{n})$ , E=1912 keV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$  using activation method; deduced capture cross sections for an average neutron energy of kT=25 keV. Comparison with previous measurements. Discussed impact on p-process network. JOUR PRVCA 82 035806
- 2011MA01 NUCLEAR REACTIONS  $\text{Yb}(\text{d}, \text{xn})^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ ,  $\text{Yb}(\text{d}, \text{xnp})^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , E<18.18 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced thin target yields, thick target yields,  $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
- $^{169}\text{Lu}$  2011MA01 NUCLEAR REACTIONS  $\text{Yb}(\text{d}, \text{xn})^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ ,  $\text{Yb}(\text{d}, \text{xnp})^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , E<18.18 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced thin target yields, thick target yields,  $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
- $^{169}\text{Os}$  2009AN20 RADIOACTIVITY  $^{180,181}\text{Pb}(\alpha)$  [from  $^{144}\text{Sm}(^{40}\text{Ca}, \text{xn})$ , E=196 MeV]; measured  $E\alpha$ ,  $I\alpha$ , (evaporation residues) $\alpha$ -,  $\alpha\gamma$ -coin,  $\alpha$ - $\alpha$  correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and  $\alpha$ -reduced widths.  $^{177}\text{Hg}$ ; deduced levels, J,  $\pi$ .  $^{172,173}\text{Pt}$ ,  $^{176,177}\text{Hg}(\alpha)$ ; measured  $E\alpha$ , half-life.  $^{178}\text{Hg}$ ,  $^{182}\text{Pb}$ ; measured  $E\alpha$ . JOUR PRVCA 80 054322
- $^{169}\text{Ir}$  2009HA42 RADIOACTIVITY  $^{160,160m}\text{Ta}$ ,  $^{164,164m}\text{Re}$ ,  $^{168,168m}\text{Ir}$ ,  $^{172}\text{Au}(\alpha)$ [from  $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured  $E\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives.  $^{157,160}\text{Hf}$ ,  $^{160,164}\text{W}$ ,  $^{164,165,167,168}\text{Os}$ ,  $^{168,169,171}\text{Ir}$ ,  $^{169,170,171,172}\text{Pt}$ ,  $^{164,165}\text{Re}$ ,  $^{171,173}\text{Au}$ ,  $^{172,173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs.  $^{160}\text{Ta}$ ,  $^{164}\text{Re}$ ,  $^{168}\text{Ir}$ ,  $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310

KEYNUMBERS AND KEYWORDS

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**A=169 (continued)**

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| 2010SC02          | RADIOACTIVITY <sup>162,163</sup> W, <sup>163,165</sup> Re, <sup>165,166,167</sup> Os, <sup>169,171</sup> Ir, <sup>171,172</sup> Pt, <sup>172</sup> Au( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced half-lives. <sup>171</sup> Pt( $\alpha$ ); measured branching ratio. JOUR PRVCA 81 014306  |
| <sup>169</sup> Pt | 2009HA42 RADIOACTIVITY <sup>160,160m</sup> Ta, <sup>164,164m</sup> Re, <sup>168,168m</sup> Ir, <sup>172</sup> Au( $\alpha$ )[from <sup>96</sup> Ru( <sup>78</sup> Kr, X), E=342, 348 MeV]; measured E $\alpha$ , $\alpha\gamma$ -correlations, and half-lives. <sup>157,160</sup> Hf, <sup>160,164</sup> W, <sup>164,165,167,168</sup> Os, <sup>168,169,171</sup> Ir, <sup>169,170,171,172</sup> Pt, <sup>164,165</sup> Re, <sup>171,173</sup> Au, <sup>172,173</sup> Hg( $\alpha$ ); measured E $\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. <sup>160</sup> Ta, <sup>164</sup> Re, <sup>168</sup> Ir, <sup>172</sup> Au; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=170**

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| <sup>170</sup> Dy | 2010S003 NUCLEAR REACTIONS <sup>170</sup> Er( <sup>82</sup> Se, X) <sup>168</sup> Dy / <sup>170</sup> Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup> Dy; deduced levels, J, $\pi$ , rotational bands, moments of inertia. <sup>170</sup> Dy; deduced 4+ to 2+ transition. <sup>170</sup> Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup> Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup> Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| <sup>170</sup> Er | 2010DR02 NUCLEAR REACTIONS <sup>170</sup> Er( <sup>136</sup> Xe, X) <sup>168</sup> Er / <sup>170</sup> Er / <sup>172</sup> Er, E=830 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ , $\gamma\gamma$ (t), and isomer half-lives using Gammasphere array. <sup>168,170,172</sup> Er; deduced levels, J, $\pi$ , rotational bands, multipolarities, B(E1), B(M1), B(E2), K-hindrance factors, configurations, quasiparticle structures, and $g_K$ - $g_R$ . JOUR PRVCA 81 054313   |
|                   | 2010S003 NUCLEAR REACTIONS <sup>170</sup> Er( <sup>82</sup> Se, X) <sup>168</sup> Dy / <sup>170</sup> Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup> Dy; deduced levels, J, $\pi$ , rotational bands, moments of inertia. <sup>170</sup> Dy; deduced 4+ to 2+ transition. <sup>170</sup> Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup> Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup> Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| <sup>170</sup> Yb | 2011MA01 RADIOACTIVITY <sup>170,171,172</sup> Lu(EC), <sup>176,177</sup> Lu, <sup>175,177</sup> Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other data. JOUR ARISE 69 37  |
| <sup>170</sup> Lu | 2010ZH26 RADIOACTIVITY <sup>162,164,166</sup> Tm, <sup>166,168,170,172</sup> Lu, <sup>170,172,174,176</sup> Ta, <sup>172,174,176,178,180</sup> Re, <sup>176,178,180,182</sup> Ir, <sup>182,184,186,188</sup> Au(IT); measured E $\gamma$ , I $\gamma$ ( $\theta$ ), $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup> Re; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |



KEYNUMBERS AND KEYWORDS

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**A=170 (continued)**

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|                   | 2011MA01 | NUCLEAR REACTIONS Yb(d, xn) <sup>169</sup> Lu / <sup>170</sup> Lu / <sup>171</sup> Lu / <sup>172</sup> Lu / <sup>173</sup> Lu / <sup>174</sup> Lu / <sup>176</sup> Lu / <sup>177</sup> Lu, Yb(d, xnp) <sup>169</sup> Yb / <sup>175</sup> Yb / <sup>177</sup> Yb, E<18.18 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37  |
|                   | 2011MA01 | RADIOACTIVITY <sup>170,171,172</sup> Lu(EC), <sup>176,177</sup> Lu, <sup>175,177</sup> Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other data. JOUR ARISE 69 37  |
| <sup>170</sup> Ta | 2010AG06 | NUCLEAR REACTIONS <sup>124</sup> Sn( <sup>51</sup> V, 5n), E=228 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ using Gammasphere array. <sup>170</sup> Ta; deduced levels, J, $\pi$ , rotational bands, configurations, Routhians, signature inversions, B(M1) / B(E2) ratios. JOUR PRVCA 81 064317  |
|                   | 2010ZH26 | RADIOACTIVITY <sup>162,164,166</sup> Tm, <sup>166,168,170,172</sup> Lu, <sup>170,172,174,176</sup> Ta, <sup>172,174,176,178,180</sup> Re, <sup>176,178,180,182</sup> Ir, <sup>182,184,186,188</sup> Au(IT); measured E $\gamma$ , I $\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup> Re; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| <sup>170</sup> Pt | 2009HA42 | RADIOACTIVITY <sup>160,160m</sup> Ta, <sup>164,164m</sup> Re, <sup>168,168m</sup> Ir, <sup>172</sup> Au( $\alpha$ )[from <sup>96</sup> Ru( <sup>78</sup> Kr, X), E=342, 348 MeV]; measured E $\alpha$ , $\alpha\gamma$ -correlations, and half-lives. <sup>157,160</sup> Hf, <sup>160,164</sup> W, <sup>164,165,167,168</sup> Os, <sup>168,169,171</sup> Ir, <sup>169,170,171,172</sup> Pt, <sup>164,165</sup> Re, <sup>171,173</sup> Au, <sup>172,173</sup> Hg( $\alpha$ ); measured E $\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. <sup>160</sup> Ta, <sup>164</sup> Re, <sup>168</sup> Ir, <sup>172</sup> Au; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=171**

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| <sup>171</sup> Dy | 2010S003 | NUCLEAR REACTIONS <sup>170</sup> Er( <sup>82</sup> Se, X) <sup>168</sup> Dy / <sup>170</sup> Dy, E=460 MeV; measured mass yields, distributions of product nuclei using PRISMA spectrometer, E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin using CLARA HPGe array. <sup>168</sup> Dy; deduced levels, J, $\pi$ , rotational bands, moments of inertia. <sup>170</sup> Dy; deduced 4+ to 2+ transition. <sup>170</sup> Er; measured E $\gamma$ . Z=64-72, N=94-108; systematics of levels and moments of inertia for even-even isotopes, and total Routhian surface calculations. <sup>81,82,83,84,85,86,87,88,89,90</sup> Kr, <sup>162,163,164,165,166,167,168,169,170,171</sup> Dy; measured yields of complementary beam-like and target-like fragments through 2pxn channels. JOUR PRVCA 81 034310 |
| <sup>171</sup> Er | 2008LEZO | NUCLEAR REACTIONS <sup>170</sup> Er, <sup>180</sup> Hf, <sup>242</sup> Pu, <sup>232</sup> Th(n, $\gamma$ ), E=reactor spectrum; measured E $\gamma$ , I $\gamma$ ; deduced <sup>171</sup> Er, <sup>181</sup> Hf, <sup>243</sup> Pu, <sup>233</sup> Pa integral $\sigma$ ; compared to JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P521   |
| <sup>171</sup> Tm | 2010DR05 | NUCLEAR REACTIONS <sup>170</sup> Er( <sup>136</sup> Xe, X), E=830 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, delayed spectra, half-lives and branching ratios using Gammasphere array. <sup>169</sup> Ho, <sup>171</sup> Tm; deduced levels, J, $\pi$ , isomer, transition strengths and hindrances, g <sub>K</sub> -g <sub>R</sub> values, bands and quasiparticle configurations. JOUR PRVCA 82 034317   |
| <sup>171</sup> Yb | 2011MA01 | RADIOACTIVITY <sup>170,171,172</sup> Lu(EC), <sup>176,177</sup> Lu, <sup>175,177</sup> Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other data. JOUR ARISE 69 37  |

KEYNUMBERS AND KEYWORDS

A=171 (*continued*)

- <sup>171</sup>Lu    2009SI34    NUCLEAR REACTIONS <sup>169</sup>Tm(<sup>12</sup>C, X)<sup>171</sup>Lu / <sup>173</sup>Ta / <sup>174</sup>Ta / <sup>175</sup>Ta / <sup>176</sup>W / <sup>176</sup>Re / <sup>177</sup>Re / <sup>178</sup>Re / <sup>180</sup>Ir / <sup>180</sup>Os / , E=5.6, 6.5 MeV / nucleon; measured  $\alpha$  spectra, E $\gamma$ , I $\gamma$ ,  $\gamma$ (particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for <sup>169</sup>Tm(<sup>16</sup>O, X) reaction. JOUR PRVCA 80 064603
- 2011MA01    NUCLEAR REACTIONS Yb(d, xn)<sup>169</sup>Lu / <sup>170</sup>Lu / <sup>171</sup>Lu / <sup>172</sup>Lu / <sup>173</sup>Lu / <sup>174</sup>Lu / <sup>176</sup>Lu / <sup>177</sup>Lu, Yb(d, xnp)<sup>169</sup>Yb / <sup>175</sup>Yb / <sup>177</sup>Yb, E<18.18 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields, thick target yields,  $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
- 2011MA01    RADIOACTIVITY <sup>170,171,172</sup>Lu(EC), <sup>176,177</sup>Lu, <sup>175,177</sup>Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T<sub>1/2</sub>. Comparison with other data. JOUR ARISE 69 37
- <sup>171</sup>Ir    2009HA42    RADIOACTIVITY <sup>160,160m</sup>Ta, <sup>164,164m</sup>Re, <sup>168,168m</sup>Ir, <sup>172</sup>Au( $\alpha$ )[from <sup>96</sup>Ru(<sup>78</sup>Kr, X), E=342, 348 MeV]; measured E $\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives. <sup>157,160</sup>Hf, <sup>160,164</sup>W, <sup>164,165,167,168</sup>Os, <sup>168,169,171</sup>Ir, <sup>169,170,171,172</sup>Pt, <sup>164,165</sup>Re, <sup>171,173</sup>Au, <sup>172,173</sup>Hg( $\alpha$ ); measured E $\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs. <sup>160</sup>Ta, <sup>164</sup>Re, <sup>168</sup>Ir, <sup>172</sup>Au; deduced levels and isomers. JOUR PRVCA 80 064310
- 2010AN01    RADIOACTIVITY <sup>179</sup>Tl, <sup>175</sup>Au, <sup>179</sup>Pb( $\alpha$ ) [from <sup>144</sup>Sm(<sup>40</sup>Ca, 5n), E=232 MeV]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>, J,  $\pi$ . JOUR JPGPE 37 035102
- 2010SC02    RADIOACTIVITY <sup>162,163</sup>W, <sup>163,165</sup>Re, <sup>165,166,167</sup>Os, <sup>169,171</sup>Ir, <sup>171,172</sup>Pt, <sup>172</sup>Au( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced half-lives. <sup>171</sup>Pt( $\alpha$ ); measured branching ratio. JOUR PRVCA 81 014306
- <sup>171</sup>Pt    2009HA42    RADIOACTIVITY <sup>160,160m</sup>Ta, <sup>164,164m</sup>Re, <sup>168,168m</sup>Ir, <sup>172</sup>Au( $\alpha$ )[from <sup>96</sup>Ru(<sup>78</sup>Kr, X), E=342, 348 MeV]; measured E $\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives. <sup>157,160</sup>Hf, <sup>160,164</sup>W, <sup>164,165,167,168</sup>Os, <sup>168,169,171</sup>Ir, <sup>169,170,171,172</sup>Pt, <sup>164,165</sup>Re, <sup>171,173</sup>Au, <sup>172,173</sup>Hg( $\alpha$ ); measured E $\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs. <sup>160</sup>Ta, <sup>164</sup>Re, <sup>168</sup>Ir, <sup>172</sup>Au; deduced levels and isomers. JOUR PRVCA 80 064310
- 2010SC02    NUCLEAR REACTIONS <sup>106</sup>Cd(<sup>60</sup>Ni, n2p)<sup>163</sup>W, E=270 MeV; <sup>92</sup>Mo(<sup>78</sup>Kr, n $\alpha$ 2p)<sup>163</sup>W, E=380 MeV; <sup>92</sup>Mo(<sup>78</sup>Kr, n2p)<sup>167</sup>Os, E=357, 365 MeV; <sup>96</sup>Ru(<sup>78</sup>Kr, n2p)<sup>171</sup>Pt, E=348 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using the JUROGAM array, conversion electrons,  $\sigma$ ; deduced multipolarities, internal conversion coefficients. <sup>163</sup>W, <sup>167</sup>Os, <sup>171</sup>Pt; deduced levels, J,  $\pi$ , half-lives. JOUR PRVCA 81 014306
- 2010SC02    RADIOACTIVITY <sup>162,163</sup>W, <sup>163,165</sup>Re, <sup>165,166,167</sup>Os, <sup>169,171</sup>Ir, <sup>171,172</sup>Pt, <sup>172</sup>Au( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced half-lives. <sup>171</sup>Pt( $\alpha$ ); measured branching ratio. JOUR PRVCA 81 014306
- <sup>171</sup>Au    2009HA42    RADIOACTIVITY <sup>160,160m</sup>Ta, <sup>164,164m</sup>Re, <sup>168,168m</sup>Ir, <sup>172</sup>Au( $\alpha$ )[from <sup>96</sup>Ru(<sup>78</sup>Kr, X), E=342, 348 MeV]; measured E $\alpha$ ,  $\alpha\gamma$ -correlations, and half-lives. <sup>157,160</sup>Hf, <sup>160,164</sup>W, <sup>164,165,167,168</sup>Os, <sup>168,169,171</sup>Ir, <sup>169,170,171,172</sup>Pt, <sup>164,165</sup>Re, <sup>171,173</sup>Au, <sup>172,173</sup>Hg( $\alpha$ ); measured E $\alpha$ ,  $\alpha\alpha$ -correlations of  $\alpha$ -decaying pairs. <sup>160</sup>Ta, <sup>164</sup>Re, <sup>168</sup>Ir, <sup>172</sup>Au; deduced levels and isomers. JOUR PRVCA 80 064310

A=172

$^{172}\text{Er}$	2010DR02	NUCLEAR REACTIONS $^{170}\text{Er}(^{136}\text{Xe}, \text{X})^{168}\text{Er} / ^{170}\text{Er} / ^{172}\text{Er}$ , E=830 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ , $\gamma\gamma(t)$ , and isomer half-lives using Gammasphere array. $^{168,170,172}\text{Er}$ ; deduced levels, J, $\pi$ , rotational bands, multipolarities, B(E1), B(M1), B(E2), K-hindrance factors, configurations, quasiparticle structures, and $g_K$ - $g_R$ . JOUR PRVCA 81 054313
$^{172}\text{Tm}$	2010DZ01	NUCLEAR REACTIONS $^{175}\text{Lu}(n, 2n)$ , $(n, p)$ , $(n, \alpha)$ , E=13.5-14.6 MeV; $^{176}\text{Lu}(n, \alpha)$ E=13.5-14.6 MeV; $^{159}\text{Tb}(n, p)$ , $(n, \alpha)$ , $(n, n'\alpha)$ , $(n, 2n)$ , E=13.5-14.6 MeV; $^{181}\text{Ta}(n, \gamma)$ , E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610
$^{172}\text{Yb}$	2008HAYY	NUCLEAR REACTIONS $^{171,173}\text{Yb}(d, p)$ , E=18.5 MeV; measured $E\gamma$ , $I\gamma(\theta)$ , Ep, Ip, p $\gamma$ -coin; deduced $\sigma(^{171}\text{Yb}) / \sigma(^{173}\text{Yb})$ . Surrogate reaction for $(n, x)$ . Results on CD only. CONF E.Lansing (NS2008),P60,Hatarik
	2009HAZW	NUCLEAR REACTIONS $^{171,173}\text{Yb}(d, p\gamma)$ , E=18.5 MeV; measured Ep, Ip, $E\gamma$ , $I\gamma$ , p $\gamma$ -coin.; deduced $4^+$ to $2^+$ $\gamma$ intensities as a function of equivalent neutron energy, surrogate $(n, \gamma)$ $\sigma$ . Compared to data of Wisshak et al. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P445,Hatarik
	2010HA03	NUCLEAR REACTIONS $^{171,173}\text{Yb}(d, p\gamma)$ , E=18.5 MeV; measured $E\gamma$ , $I\gamma$ , particle spectra, (particle) $\gamma$ -coin using STARS array for particles and HPGe detectors for $\gamma$ rays; deduced intensity ratios of $\gamma$ rays in $^{172}\text{Yb}$ and $^{174}\text{Yb}$ , cross sections, and comparison with DICEBOX simulations. $^{171,173}\text{Yb}(n, \gamma)$ , E=5-260 keV; comparison of neutron capture cross sections with those from $(d, p\gamma)$ reaction using external surrogate ratio method. JOUR PRVCA 81 011602
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{172}\text{Lu}$	2010ZH26	RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c
	2011MA01	NUCLEAR REACTIONS $\text{Yb}(d, xn)^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(d, xnp)^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , E<18.18 MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37

KEYNUMBERS AND KEYWORDS

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**A=172 (continued)**

$^{172}\text{Hf}$	2009BE42	NUCLEAR MOMENTS $^{172}\text{Hf}$ ; measured g factor of first 2+ state using integral perturbed angular correlation method. Comparisons with g factors of neighboring even-even Hf nuclei and with predictions of several nuclear models including interacting boson approximation (IBA-2). JOUR PRVCA 80 057303
	2009BE42	RADIOACTIVITY $^{172}\text{Ta}(\text{EC})$ , ( $\beta^+$ ) [from $^{165}\text{Ho}(^{12}\text{C}, 5\text{n})$ , E=85 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and cascade $I\gamma$ as a function of angle and magnetic field. JOUR PRVCA 80 057303
$^{172}\text{Ta}$	2009BE42	RADIOACTIVITY $^{172}\text{Ta}(\text{EC})$ , ( $\beta^+$ ) [from $^{165}\text{Ho}(^{12}\text{C}, 5\text{n})$ , E=85 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and cascade $I\gamma$ as a function of angle and magnetic field. JOUR PRVCA 80 057303
	2010ZH26	RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c
$^{172}\text{Re}$	2010ZH26	RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c
$^{172}\text{Pt}$	2009AN20	RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, \text{xn})$ , E=196 MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, J, $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322
	2009HA42	RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310
	2010JU02	RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2\text{n})$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , ( $\beta^+$ ); measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c
	2010RA12	RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179m}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303
	2010SC02	RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306
$^{172}\text{Au}$	2009HA42	RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310

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**A=172 (continued)**

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|                   | 2009HA42 | NUCLEAR REACTIONS $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})^{172}\text{Au} / ^{173}\text{Au}$ , E=342, 348 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma\alpha$ -, $\gamma\alpha$ (recoils)-coin and $\gamma(\theta)$ . $^{172}\text{Au}$ ; deduced levels and multipolarity. Routhian surface calculations for $^{172}\text{Au}$ . JOUR PRVCA 80 064310   |
|                   | 2010SC02 | RADIOACTIVITY $^{162,163}\text{W}$ , $^{163,165}\text{Re}$ , $^{165,166,167}\text{Os}$ , $^{169,171}\text{Ir}$ , $^{171,172}\text{Pt}$ , $^{172}\text{Au}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced half-lives. $^{171}\text{Pt}(\alpha)$ ; measured branching ratio. JOUR PRVCA 81 014306   |
| $^{172}\text{Hg}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=173**

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| $^{173}\text{Tm}$ | 2010DZ01 | NUCLEAR REACTIONS $^{175}\text{Lu}(n, 2n)$ , $(n, p)$ , $(n, \alpha)$ , E=13.5-14.6 MeV; $^{176}\text{Lu}(n, \alpha)$ E=13.5-14.6 MeV; $^{159}\text{Tb}(n, p)$ , $(n, \alpha)$ , $(n, n'\alpha)$ , $(n, 2n)$ , E=13.5-14.6 MeV; $^{181}\text{Ta}(n, \gamma)$ , E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610  |
| $^{173}\text{Lu}$ | 2011MA01 | NUCLEAR REACTIONS $\text{Yb}(d, xn)^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(d, xnp)^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , E<18.18 MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37   |
| $^{173}\text{Ta}$ | 2009SI34 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma$ (particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603  |
| $^{173}\text{Pt}$ | 2009AN20 | RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, xn)$ , E=196 MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, J, $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322  |
|                   | 2010RA12 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179m}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303   |
| $^{173}\text{Au}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

KEYNUMBERS AND KEYWORDS

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**A=173 (continued)**

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|                   | 2009HA42 | NUCLEAR REACTIONS $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})^{172}\text{Au} / ^{173}\text{Au}$ , E=342, 348 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma\alpha$ -, $\gamma\alpha$ (recoils)-coin and $\gamma(\theta)$ . $^{172}\text{Au}$ ; deduced levels and multipolarity. Routhian surface calculations for $^{172}\text{Au}$ . JOUR PRVCA 80 064310   |
| $^{173}\text{Hg}$ | 2009HA42 | RADIOACTIVITY $^{160,160m}\text{Ta}$ , $^{164,164m}\text{Re}$ , $^{168,168m}\text{Ir}$ , $^{172}\text{Au}(\alpha)$ [from $^{96}\text{Ru}(^{78}\text{Kr}, \text{X})$ , E=342, 348 MeV]; measured $E\alpha$ , $\alpha\gamma$ -correlations, and half-lives. $^{157,160}\text{Hf}$ , $^{160,164}\text{W}$ , $^{164,165,167,168}\text{Os}$ , $^{168,169,171}\text{Ir}$ , $^{169,170,171,172}\text{Pt}$ , $^{164,165}\text{Re}$ , $^{171,173}\text{Au}$ , $^{172,173}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $\alpha\alpha$ -correlations of $\alpha$ -decaying pairs. $^{160}\text{Ta}$ , $^{164}\text{Re}$ , $^{168}\text{Ir}$ , $^{172}\text{Au}$ ; deduced levels and isomers. JOUR PRVCA 80 064310 |

**A=174**

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| $^{174}\text{Yb}$ | 2008HAYY | NUCLEAR REACTIONS $^{171,173}\text{Yb}(\text{d}, \text{p})$ , E=18.5 MeV; measured $E\gamma$ , $I\gamma(\theta)$ , $E\text{p}$ , $I\text{p}$ , $\text{p}\gamma$ -coin; deduced $\sigma(^{171}\text{Yb}) / \sigma(^{173}\text{Yb})$ . Surrogate reaction for (n, x). Results on CD only. CONF E.Lansing (NS2008),P60,Hatarik  |
|                   | 2009HAZW | NUCLEAR REACTIONS $^{171,173}\text{Yb}(\text{d}, \text{p}\gamma)$ , E=18.5 MeV; measured $E\text{p}$ , $I\text{p}$ , $E\gamma$ , $I\gamma$ , $\text{p}\gamma$ -coin.; deduced $4^+$ to $2^+$ $\gamma$ intensities as a function of equivalent neutron energy, surrogate (n, $\gamma$ ) $\sigma$ . Compared to data of Wisshak et al. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P445,Hatarik   |
|                   | 2010HA03 | NUCLEAR REACTIONS $^{171,173}\text{Yb}(\text{d}, \text{p}\gamma)$ , E=18.5 MeV; measured $E\gamma$ , $I\gamma$ , particle spectra, (particle) $\gamma$ -coin using STARS array for particles and HPGe detectors for $\gamma$ rays; deduced intensity ratios of $\gamma$ rays in $^{172}\text{Yb}$ and $^{174}\text{Yb}$ , cross sections, and comparison with DICEBOX simulations. $^{171,173}\text{Yb}(\text{n}, \gamma)$ , E=5-260 keV; comparison of neutron capture cross sections with those from (d, $\text{p}\gamma$ ) reaction using external surrogate ratio method. JOUR PRVCA 81 011602 |
| $^{174}\text{Lu}$ | 2010DZ01 | NUCLEAR REACTIONS $^{175}\text{Lu}(\text{n}, 2\text{n})$ , (n, p), (n, $\alpha$ ), E=13.5-14.6 MeV; $^{176}\text{Lu}(\text{n}, \alpha)$ E=13.5-14.6 MeV; $^{159}\text{Tb}(\text{n}, \text{p})$ , (n, $\alpha$ ), (n, n' $\alpha$ ), (n, 2n), E=13.5-14.6 MeV; $^{181}\text{Ta}(\text{n}, \gamma)$ , E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610   |
|                   | 2011MA01 | NUCLEAR REACTIONS $\text{Yb}(\text{d}, \text{xn})^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(\text{d}, \text{xnp})^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , E<18.18 MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37   |
| $^{174}\text{Ta}$ | 2009SI34 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma$ (particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603  |

KEYNUMBERS AND KEYWORDS

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**A=174 (continued)**

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|                   | 2010ZH26 | RADIOACTIVITY <sup>162,164,166</sup> Tm, <sup>166,168,170,172</sup> Lu, <sup>170,172,174,176</sup> Ta, <sup>172,174,176,178,180</sup> Re, <sup>176,178,180,182</sup> Ir, <sup>182,184,186,188</sup> Au(IT); measured E $\gamma$ , I $\gamma$ ( $\theta$ ), $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup> Re; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c |
| <sup>174</sup> Re | 2010ZH26 | RADIOACTIVITY <sup>162,164,166</sup> Tm, <sup>166,168,170,172</sup> Lu, <sup>170,172,174,176</sup> Ta, <sup>172,174,176,178,180</sup> Re, <sup>176,178,180,182</sup> Ir, <sup>182,184,186,188</sup> Au(IT); measured E $\gamma$ , I $\gamma$ ( $\theta$ ), $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup> Re; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c |

**A=175**

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| <sup>175</sup> Yb | 2010DZ01 | NUCLEAR REACTIONS <sup>175</sup> Lu(n, 2n), (n, p), (n, $\alpha$ ), E=13.5-14.6 MeV; <sup>176</sup> Lu(n, $\alpha$ )E=13.5-14.6 MeV; <sup>159</sup> Tb(n, p), (n, $\alpha$ ), (n, n' $\alpha$ ), (n, 2n), E=13.5-14.6 MeV; <sup>181</sup> Ta(n, $\gamma$ ), E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured E $\gamma$ , I $\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610   |
|                   | 2011MA01 | NUCLEAR REACTIONS Yb(d, xn) <sup>169</sup> Lu / <sup>170</sup> Lu / <sup>171</sup> Lu / <sup>172</sup> Lu / <sup>173</sup> Lu / <sup>174</sup> Lu / <sup>176</sup> Lu / <sup>177</sup> Lu, Yb(d, xnp) <sup>169</sup> Yb / <sup>175</sup> Yb / <sup>177</sup> Yb, E<18.18 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37   |
|                   | 2011MA01 | RADIOACTIVITY <sup>170,171,172</sup> Lu(EC), <sup>176,177</sup> Lu, <sup>175,177</sup> Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other data. JOUR ARISE 69 37   |
| <sup>175</sup> Lu | 2011MA01 | RADIOACTIVITY <sup>170,171,172</sup> Lu(EC), <sup>176,177</sup> Lu, <sup>175,177</sup> Yb( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with other data. JOUR ARISE 69 37   |
| <sup>175</sup> Hf | 2009N012 | NUCLEAR REACTIONS <sup>174,176,177,178,179,180</sup> Hf(n, $\gamma$ ), E=0.002-50 keV; measured transmission and capture $\sigma$ at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106  |
| <sup>175</sup> Ta | 2009SI34 | NUCLEAR REACTIONS <sup>169</sup> Tm( <sup>12</sup> C, X) <sup>171</sup> Lu / <sup>173</sup> Ta / <sup>174</sup> Ta / <sup>175</sup> Ta / <sup>176</sup> W / <sup>176</sup> Re / <sup>177</sup> Re / <sup>178</sup> Re / <sup>180</sup> Ir / <sup>180</sup> Os / , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, E $\gamma$ , I $\gamma$ , $\gamma$ (particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for <sup>169</sup> Tm( <sup>16</sup> O, X) reaction. JOUR PRVCA 80 064603 |
| <sup>175</sup> Os | 2010WA02 | RADIOACTIVITY <sup>175,176</sup> Ir(EC) [from <sup>146</sup> Nd( <sup>35</sup> Cl, X), E=210 MeV / nucleon]; measured reaction products, x-rays, E $\gamma$ , I $\gamma$ ; deduced decay constants, T <sub>1/2</sub> , long-lived isomeric state in <sup>175</sup> Ir. JOUR CPLEE 27 022301  |

KEYNUMBERS AND KEYWORDS

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**A=175 (continued)**

$^{175}\text{Ir}$	2010WA02	RADIOACTIVITY $^{175,176}\text{Ir}(\text{EC})$ [from $^{146}\text{Nd}(^{35}\text{Cl}, \text{X})$ , $E=210$ MeV / nucleon]; measured reaction products, x-rays, $E\gamma$ , $I\gamma$ ; deduced decay constants, $T_{1/2}$ , long-lived isomeric state in $^{175}\text{Ir}$ . JOUR CPLEE 27 022301
$^{175}\text{Au}$	2010AN01	RADIOACTIVITY $^{179}\text{Tl}$ , $^{175}\text{Au}$ , $^{179}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, 5n)$ , $E=232$ MeV]; measured $E\alpha$ , $I\alpha$ ; deduced $T_{1/2}$ , $J$ , $\pi$ . JOUR JPGPE 37 035102
	2010RA12	RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179m}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303
$^{175}\text{Hg}$	2010AN01	RADIOACTIVITY $^{179}\text{Tl}$ , $^{175}\text{Au}$ , $^{179}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, 5n)$ , $E=232$ MeV]; measured $E\alpha$ , $I\alpha$ ; deduced $T_{1/2}$ , $J$ , $\pi$ . JOUR JPGPE 37 035102

**A=176**

$^{176}\text{Lu}$	2010DR01	NUCLEAR REACTIONS $^{176}\text{Lu}(^{136}\text{Xe}, ^{136}\text{Xe}'\gamma)$ , $E=6.0$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using the Gammasphere array. Beam-on and beam-off measurements. $^{176}\text{Lu}$ ; deduced levels, $J$ , $\pi$ , multipolarity, transition strengths, partial $\gamma$ -ray widths, connection between high-K and low-K bands, and astrophysical significance for the s-process nucleus. JOUR PRVCA 81 011301
	2011MA01	NUCLEAR REACTIONS $\text{Yb}(d, xn)^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(d, xnp)^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , $E<18.18$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{176}\text{Hf}$	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{176}\text{Ta}$	2010ZH26	RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, $J$ , $\pi$ . JOUR NUPAB 834 32c
$^{176}\text{W}$	2009SI34	NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , $E=5.6, 6.5$ MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma(\text{particle})$ -coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603



KEYNUMBERS AND KEYWORDS

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A=176 (*continued*)

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| $^{176}\text{Re}$ | 2009SI34 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma$ (particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603         |
|                   | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}$ (IT); measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c   |
| $^{176}\text{Os}$ | 2009HA46 | NUCLEAR REACTIONS $^{152}\text{Sm}(^{28}\text{Si}, 4n)^{176}\text{Os}$ , E=140 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced high-spin states, $T_{1/2}$ , lifetimes of the excited states in the yrast band, shape evolution. JOUR CPCHC 33 s01 151   |
|                   | 2010WA02 | RADIOACTIVITY $^{175,176}\text{Ir}$ (EC) [from $^{146}\text{Nd}(^{35}\text{Cl}, \text{X})$ , E=210 MeV / nucleon]; measured reaction products, x-rays, $E\gamma$ , $I\gamma$ ; deduced decay constants, $T_{1/2}$ , long-lived isomeric state in $^{175}\text{Ir}$ . JOUR CPLEE 27 022301   |
| $^{176}\text{Ir}$ | 2010WA02 | RADIOACTIVITY $^{175,176}\text{Ir}$ (EC) [from $^{146}\text{Nd}(^{35}\text{Cl}, \text{X})$ , E=210 MeV / nucleon]; measured reaction products, x-rays, $E\gamma$ , $I\gamma$ ; deduced decay constants, $T_{1/2}$ , long-lived isomeric state in $^{175}\text{Ir}$ . JOUR CPLEE 27 022301   |
|                   | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au}$ (IT); measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c   |
| $^{176}\text{Au}$ | 2010AN13 | RADIOACTIVITY $^{180}\text{Tl}(\alpha)$ , ( $\beta^+$ ), (EC) [from U(p, X), E=1.4 GeV]; measured fission fragments, $E\alpha$ , $I\alpha$ , X-rays. $^{180}\text{Hg}$ ; deduced asymmetric fission fragment distribution, branching ratio for $\beta$ -delayed fission. JOUR PRLTA 105 252502  |
| $^{176}\text{Hg}$ | 2009AN20 | RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, \text{xn})$ , E=196 MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, J, $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322 |
|                   | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , ( $\beta^+$ ); measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}$ (IT); measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c   |
|                   | 2010RA12 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179m}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303  |

## A=177

$^{177}\text{Yb}$	2011MA01	NUCLEAR REACTIONS $\text{Yb}(\text{d}, \text{xn})^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(\text{d}, \text{xn})^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , $E < 18.18$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{177}\text{Lu}$	2008BEZO	NUCLEAR REACTIONS $^{177}\text{Lu}(\text{n}, \text{n}')$ , $E = \text{reactor spectrum}$ ; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Target in isomeric state, superelastic scattering. CONF Nice (Nucl Data for Sci and Technol) Proc,P463
	2008KIZP	NUCLEAR REACTIONS $\text{Er}(\alpha, \text{x})^{169}\text{Yb}$ , $E \approx 0-36$ MeV; $\text{Yb}(\alpha, \text{x})^{169}\text{Yb}$ , $E \approx 18-38$ MeV; $\text{Yb}(\alpha, \text{x})^{177}\text{Lu}$ , $E \approx 8-38$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , yields; calculated $\sigma$ using ALICE-IPPE. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1371
	2011MA01	NUCLEAR REACTIONS $\text{Yb}(\text{d}, \text{xn})^{169}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu} / ^{174}\text{Lu} / ^{176}\text{Lu} / ^{177}\text{Lu}$ , $\text{Yb}(\text{d}, \text{xn})^{169}\text{Yb} / ^{175}\text{Yb} / ^{177}\text{Yb}$ , $E < 18.18$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced thin target yields, thick target yields, $\sigma$ . Comparison with experimental data. JOUR ARISE 69 37
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{177}\text{Hf}$	2009N012	NUCLEAR REACTIONS $^{174,176,177,178,179,180}\text{Hf}(\text{n}, \gamma)$ , $E = 0.002-50$ keV; measured transmission and capture $\sigma$ at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106
	2011MA01	RADIOACTIVITY $^{170,171,172}\text{Lu}(\text{EC})$ , $^{176,177}\text{Lu}$ , $^{175,177}\text{Yb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with other data. JOUR ARISE 69 37
$^{177}\text{Re}$	2009SI34	NUCLEAR REACTIONS $^{169}\text{Tm}(\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , $E = 5.6, 6.5$ MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma(\text{particle})\text{-coin}$ ; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603
$^{177}\text{Hg}$	2009AN20	RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(\text{Ca}, \text{xn})$ , $E = 196$ MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, $J$ , $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322
	2010RA12	RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179\text{m}}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303

## A=178

- <sup>178</sup>Lu      2008SEZT      NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, pα), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, pα), <sup>181</sup>Ta(n, α), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n, α), E=13.8-20.5 MeV; measured E<sub>γ</sub>, I<sub>γ</sub>; deduced σ. Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559
- 2010KR02      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>197</sup>Au, <sup>59</sup>Co, In, <sup>181</sup>Ta(n, γ), (n, α), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup>Au, <sup>24</sup>Na; measured E<sub>α</sub>, I<sub>α</sub>, E<sub>γ</sub>, I<sub>γ</sub>; deduced yields, σ. JOUR NIMAE 615 70
- <sup>178</sup>Hf      2009N012      NUCLEAR REACTIONS <sup>174,176,177,178,179,180</sup>Hf(n, γ), E=0.002-50 keV; measured transmission and capture σ at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106
- 2010G012      NUCLEAR REACTIONS <sup>178</sup>Hf(n, n<sub>γ</sub>), E not given; measured E<sub>γ</sub>, I<sub>γ</sub>, γ-γ-coin.; deduced angular distribution of g-rays, rotational bands, level scheme, J, π, deformation. JOUR PANUE 73 1101
- 2010GOZY      NUCLEAR REACTIONS <sup>178</sup>Hf(n, n'γ), E=fast; measured E<sub>γ</sub>, I<sub>γ</sub>(θ). <sup>178</sup>Hf; deduced levels, δ, possible configurations. CONF St.-Petersburg,P116,Govor
- <sup>178</sup>Re      2009SI34      NUCLEAR REACTIONS <sup>169</sup>Tm(<sup>12</sup>C, X)<sup>171</sup>Lu / <sup>173</sup>Ta / <sup>174</sup>Ta / <sup>175</sup>Ta / <sup>176</sup>W / <sup>176</sup>Re / <sup>177</sup>Re / <sup>178</sup>Re / <sup>180</sup>Ir / <sup>180</sup>Os / , E=5.6, 6.5 MeV / nucleon; measured α spectra, E<sub>γ</sub>, I<sub>γ</sub>, γ(particle)-coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for <sup>169</sup>Tm(<sup>16</sup>O, X) reaction. JOUR PRVCA 80 064603
- 2010ZH26      RADIOACTIVITY <sup>162,164,166</sup>Tm, <sup>166,168,170,172</sup>Lu, <sup>170,172,174,176</sup>Ta, <sup>172,174,176,178,180</sup>Re, <sup>176,178,180,182</sup>Ir, <sup>182,184,186,188</sup>Au(IT); measured E<sub>γ</sub>, I<sub>γ</sub>(θ), γγ-, (K X-ray)γγ-coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup>Re; deduced high spin levels, J, π. JOUR NUPAB 834 32c
- <sup>178</sup>Os      2009KU24      NUCLEAR REACTIONS <sup>165</sup>Ho(<sup>20</sup>Ne, p6n), E=150 MeV; measured E<sub>γ</sub>, I<sub>γ</sub>, γγ-coin, DCO, and linear polarizations. <sup>178</sup>Os; deduced levels, J, π, bands, multipolarities, and configurations. Comparison with projected angular momentum deformed Hartree-Fock and cranked Woods-Saxon model calculations. JOUR PRVCA 80 054319
- <sup>178</sup>Ir      2010ZH26      RADIOACTIVITY <sup>162,164,166</sup>Tm, <sup>166,168,170,172</sup>Lu, <sup>170,172,174,176</sup>Ta, <sup>172,174,176,178,180</sup>Re, <sup>176,178,180,182</sup>Ir, <sup>182,184,186,188</sup>Au(IT); measured E<sub>γ</sub>, I<sub>γ</sub>(θ), γγ-, (K X-ray)γγ-coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup>Re; deduced high spin levels, J, π. JOUR NUPAB 834 32c

KEYNUMBERS AND KEYWORDS

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**A=178 (continued)**

- <sup>178</sup>Hg      2009AN20      RADIOACTIVITY <sup>180,181</sup>Pb( $\alpha$ ) [from <sup>144</sup>Sm(<sup>40</sup>Ca, xn), E=196 MeV]; measured E $\alpha$ , I $\alpha$ , (evaporation residues) $\alpha$ -,  $\alpha\gamma$ -coin,  $\alpha$ - $\alpha$  correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and  $\alpha$ -reduced widths. <sup>177</sup>Hg; deduced levels, J,  $\pi$ . <sup>172,173</sup>Pt, <sup>176,177</sup>Hg( $\alpha$ ); measured E $\alpha$ , half-life. <sup>178</sup>Hg, <sup>182</sup>Pb; measured E $\alpha$ . JOUR PRVCA 80 054322
- 2010JU02      RADIOACTIVITY <sup>180</sup>Pb( $\alpha$ )[from <sup>92</sup>Mo(<sup>90</sup>Zr, 2n)]; <sup>176</sup>Hg( $\alpha$ )[from <sup>180</sup>Pb( $\alpha$ )]; measured E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin. <sup>180,182,184,186,188</sup>Pb( $\alpha$ ), ( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ ; deduced prolate bands aligned angular momentum. <sup>254</sup>No(IT); measured E $\gamma$ , I $\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c

**A=179**

- <sup>179</sup>Hf      2009N012      NUCLEAR REACTIONS <sup>174,176,177,178,179,180</sup>Hf(n,  $\gamma$ ), E=0.002-50 keV; measured transmission and capture  $\sigma$  at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106
- <sup>179</sup>Os      2008GOZM      NUCLEAR REACTIONS <sup>166</sup>Ho(<sup>20</sup>Ne, p6n), E=150 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, polarization; deduced levels, J,  $\pi$ , yrast band, rotational band; calculated levels, J,  $\pi$  using HF with angular projection. Abstract only. CONF E.Lansing (NS2008),P108,Govil
- <sup>179</sup>Au      2011VE01      RADIOACTIVITY <sup>183</sup>Tl( $\alpha$ ), <sup>179</sup>Au(IT) [from <sup>107</sup>Ag(<sup>78</sup>Kr, X)<sup>185</sup>Bi(2p)]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin., E $\alpha$ , I $\alpha$ ,  $\alpha$ - $\gamma$  coin.; deduced new isomer, T<sub>1/2</sub>, B(E1), level scheme, shape coexistence, intruder states. JOUR PYLBB 695 82
- <sup>179</sup>Tl      2010AN01      RADIOACTIVITY <sup>179</sup>Tl, <sup>175</sup>Au, <sup>179</sup>Pb( $\alpha$ ) [from <sup>144</sup>Sm(<sup>40</sup>Ca, 5n), E=232 MeV]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>, J,  $\pi$ . JOUR JPGPE 37 035102
- 2010RA12      RADIOACTIVITY <sup>180</sup>Pb( $\alpha$ ); measured E $\alpha$  and half-life. <sup>176,177</sup>Hg, <sup>179m</sup>Tl( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 82 011303
- <sup>179</sup>Pb      2010AN01      RADIOACTIVITY <sup>179</sup>Tl, <sup>175</sup>Au, <sup>179</sup>Pb( $\alpha$ ) [from <sup>144</sup>Sm(<sup>40</sup>Ca, 5n), E=232 MeV]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>, J,  $\pi$ . JOUR JPGPE 37 035102

**A=180**

- <sup>180</sup>Hf      2008SEZT      NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, p $\alpha$ ), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, p $\alpha$ ), <sup>181</sup>Ta(n,  $\alpha$ ), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n,  $\alpha$ ), E=13.8-20.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559

KEYNUMBERS AND KEYWORDS

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A=180 (*continued*)

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|                   | 2008TAZB | NUCLEAR REACTIONS $^{232}\text{Th}(^{180}\text{Hf}, \text{X})$ , E=1300 MeV; measured E(particle), I(particle), $E\gamma$ , $I\gamma$ . $^{180}\text{Hf}$ deduced levels, J, $\pi$ , bands. Abstract only. CONF E.Lansing (NS2008),P183,Tandel   |
|                   | 2009N012 | NUCLEAR REACTIONS $^{174,176,177,178,179,180}\text{Hf}(n, \gamma)$ , E=0.002-50 keV; measured transmission and capture $\sigma$ at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106  |
| $^{180}\text{Ta}$ | 20080CZZ | NUCLEAR REACTIONS $^{27}\text{Al}(d, x)^{24}\text{Na}$ , $^{51}\text{V}(d, 4n)$ , $\text{Fe}(d, x)^{54}\text{Mn}$ , $\text{Fe}(d, x)^{56}\text{Co}$ , $\text{Ni}(d, x)^{57}\text{Co}$ , $\text{Cu}(d, x)^{63}\text{Zn}$ , $\text{Ta}(d, x)^{180}\text{Ta}$ , $\text{W}(d, x)^{182}\text{Re}$ , $^{197}\text{Au}(d, x)^{194}\text{Au}$ , E=25, 35, 41, 50 MeV; $\text{Cr}(d, x)^{48}\text{V}$ , $\text{Cr}(d, x)^{52}\text{Mn}$ , $^{55}\text{Mn}(d, x)^{54}\text{Mn}$ , $\text{Ni}(d, x)^{56}\text{Co}$ , E=39.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011                                   |
|                   | 2008SEZT | NUCLEAR REACTIONS $^{50}\text{Cr}(n, x)^{48}\text{V}$ , $^{58}\text{Ni}(n, p\alpha)$ , $^{58}\text{Ni}(n, x)^{56}\text{Co}$ , $^{63}\text{Cu}(n, p\alpha)$ , $^{181}\text{Ta}(n, \alpha)$ , $^{181}\text{Ta}(n, p)$ , $^{181}\text{Ta}(n, x)^{180}\text{Hf}$ , $^{181}\text{Ta}(n, 2n)$ , $^{182,183,184,185}\text{W}(n, p)$ , $^{183}\text{W}(n, x)^{182}\text{Ta}$ , $^{184}\text{W}(n, x)^{183}\text{Ta}$ , $^{186}\text{W}(n, x)^{185}\text{Ta}$ , $^{186}\text{W}(n, 2n)$ , $^{184,186}\text{W}(n, \alpha)$ , E=13.8-20.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559 |
| $^{180}\text{Re}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{180}\text{Os}$ | 2009SI34 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma(\text{particle})$ -coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603   |
| $^{180}\text{Ir}$ | 2009SI34 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{12}\text{C}, \text{X})^{171}\text{Lu} / ^{173}\text{Ta} / ^{174}\text{Ta} / ^{175}\text{Ta} / ^{176}\text{W} / ^{176}\text{Re} / ^{177}\text{Re} / ^{178}\text{Re} / ^{180}\text{Ir} / ^{180}\text{Os} /$ , E=5.6, 6.5 MeV / nucleon; measured $\alpha$ spectra, $E\gamma$ , $I\gamma$ , $\gamma(\text{particle})$ -coin; deduced yields, spin distributions, and role of angular momentum on yields in incomplete fusion. Comparison with data for $^{169}\text{Tm}(^{16}\text{O}, \text{X})$ reaction. JOUR PRVCA 80 064603   |
|                   | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{180}\text{Hg}$ | 2010AN13 | RADIOACTIVITY $^{180}\text{Tl}(\alpha)$ , ( $\beta^+$ ), (EC) [from U(p, X), E=1.4 GeV]; measured fission fragments, $E\alpha$ , $I\alpha$ , X-rays. $^{180}\text{Hg}$ ; deduced asymmetric fission fragment distribution, branching ratio for $\beta$ -delayed fission. JOUR PRLTA 105 252502   |

KEYNUMBERS AND KEYWORDS

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**A=180 (continued)**

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|                   | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
| $^{180}\text{Tl}$ | 2010AN13 | RADIOACTIVITY $^{180}\text{Tl}(\alpha)$ , $(\beta^+)$ , (EC) [from U(p, X), E=1.4 GeV]; measured fission fragments, $E\alpha$ , $I\alpha$ , X-rays. $^{180}\text{Hg}$ ; deduced asymmetric fission fragment distribution, branching ratio for $\beta$ -delayed fission. JOUR PRLTA 105 252502  |
|                   | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
| $^{180}\text{Pb}$ | 2009AN20 | RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, xn)$ , E=196 MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, J, $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322 |
|                   | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
|                   | 2010RA12 | NUCLEAR REACTIONS $^{92}\text{Mo}(^{90}\text{Zr}, 2n)^{180}\text{Pb}$ , E=400 MeV; measured $E\gamma$ , $I\gamma$ , (recoil) $\gamma$ -, (recoil) $\alpha\gamma$ coin using the JUROGAM II array and recoil-decay tagging (RDT) technique. $^{180}\text{Pb}$ ; deduced levels, J, $\pi$ , band. Comparison with beyond-mean-field theoretical calculations. Z=82, A=180-208; systematics of spherical, prolate and oblate structures. JOUR PRVCA 82 011303   |
|                   | 2010RA12 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ ; measured $E\alpha$ and half-life. $^{176,177}\text{Hg}$ , $^{179m}\text{Tl}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 011303   |

**A=181**

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| $^{181}\text{Hf}$ | 2008LEZO | NUCLEAR REACTIONS $^{170}\text{Er}$ , $^{180}\text{Hf}$ , $^{242}\text{Pu}$ , $^{232}\text{Th}(n, \gamma)$ , E=reactor spectrum; measured $E\gamma$ , $I\gamma$ ; deduced $^{171}\text{Er}$ , $^{181}\text{Hf}$ , $^{243}\text{Pu}$ , $^{233}\text{Pa}$ integral $\sigma$ ; compared to JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P521  |
|                   | 2008SEZT | NUCLEAR REACTIONS $^{50}\text{Cr}(n, x)^{48}\text{V}$ , $^{58}\text{Ni}(n, p\alpha)$ , $^{58}\text{Ni}(n, x)^{56}\text{Co}$ , $^{63}\text{Cu}(n, p\alpha)$ , $^{181}\text{Ta}(n, \alpha)$ , $^{181}\text{Ta}(n, p)$ , $^{181}\text{Ta}(n, x)^{180}\text{Hf}$ , $^{181}\text{Ta}(n, 2n)$ , $^{182,183,184,185}\text{W}(n, p)$ , $^{183}\text{W}(n, x)^{182}\text{Ta}$ , $^{184}\text{W}(n, x)^{183}\text{Ta}$ , $^{186}\text{W}(n, x)^{185}\text{Ta}$ , $^{186}\text{W}(n, 2n)$ , $^{184,186}\text{W}(n, \alpha)$ , E=13.8-20.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559 |

KEYNUMBERS AND KEYWORDS

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**A=181 (continued)**

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|                   | 2009N012 | NUCLEAR REACTIONS <sup>174,176,177,178,179,180</sup> Hf(n, $\gamma$ ), E=0.002-50 keV; measured transmission and capture $\sigma$ at the GELINA white neutron source facility; deduced resonance parameters using Reich-Moore interpretation and the REFIT code. Comparison with data. JOUR NUPAB 831 106   |
| <sup>181</sup> W  | 2008HUZU | NUCLEAR REACTIONS <sup>181</sup> W( <sup>17</sup> O, <sup>17</sup> O'), E(cm)=26-36 MeV; measured $\sigma(\theta=166.07^\circ)$ ; calculated $\sigma(\theta=166.07^\circ)$ using FRESCO. Results on CD only. CONF E.Lansing (NS2008),P115,Huiza   |
|                   | 2010MA50 | NUCLEAR REACTIONS <sup>168</sup> Yb, <sup>180</sup> W, <sup>184</sup> Os, <sup>190</sup> Pt, <sup>196</sup> Hg(n, $\gamma$ ), E=spectrum[neutrons from <sup>7</sup> Li(p, n), E=1912 keV]; measured E $\gamma$ , I $\gamma$ , $\sigma$ using activation method; deduced capture cross sections for an average neutron energy of kT=25 keV. Comparison with previous measurements. Discussed impact on p-process network. JOUR PRVCA 82 035806   |
|                   | 2011B001 | RADIOACTIVITY <sup>181,182,183,184</sup> Re(EC); <sup>186</sup> Re(EC), ( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with nuclear databases. JOUR RAACA 99 1   |
| <sup>181</sup> Re | 2011B001 | NUCLEAR REACTIONS W(p, xn) <sup>181</sup> Re / <sup>182</sup> Re / <sup>183</sup> Re / <sup>184</sup> Re / <sup>186</sup> Re, E=9.5 MeV; <sup>186</sup> W(p, n), E=14, 17, 22 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick-target yields, $\sigma$ . Comparison with EMPIRE II model code. JOUR RAACA 99 1   |
|                   | 2011B001 | RADIOACTIVITY <sup>181,182,183,184</sup> Re(EC); <sup>186</sup> Re(EC), ( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with nuclear databases. JOUR RAACA 99 1   |
| <sup>181</sup> Pb | 2009AN20 | RADIOACTIVITY <sup>180,181</sup> Pb( $\alpha$ ) [from <sup>144</sup> Sm( <sup>40</sup> Ca, xn), E=196 MeV]; measured E $\alpha$ , I $\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. <sup>177</sup> Hg; deduced levels, J, $\pi$ . <sup>172,173</sup> Pt, <sup>176,177</sup> Hg( $\alpha$ ); measured E $\alpha$ , half-life. <sup>178</sup> Hg, <sup>182</sup> Pb; measured E $\alpha$ . JOUR PRVCA 80 054322 |

**A=182**

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| <sup>182</sup> Ta | 2008SEZT | NUCLEAR REACTIONS <sup>50</sup> Cr(n, x) <sup>48</sup> V, <sup>58</sup> Ni(n, p $\alpha$ ), <sup>58</sup> Ni(n, x) <sup>56</sup> Co, <sup>63</sup> Cu(n, p $\alpha$ ), <sup>181</sup> Ta(n, $\alpha$ ), <sup>181</sup> Ta(n, p), <sup>181</sup> Ta(n, x) <sup>180</sup> Hf, <sup>181</sup> Ta(n, 2n), <sup>182,183,184,185</sup> W(n, p), <sup>183</sup> W(n, x) <sup>182</sup> Ta, <sup>184</sup> W(n, x) <sup>183</sup> Ta, <sup>186</sup> W(n, x) <sup>185</sup> Ta, <sup>186</sup> W(n, 2n), <sup>184,186</sup> W(n, $\alpha$ ), E=13.8-20.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559 |
|                   | 2010DZ01 | NUCLEAR REACTIONS <sup>175</sup> Lu(n, 2n), (n, p), (n, $\alpha$ ), E=13.5-14.6 MeV; <sup>176</sup> Lu(n, $\alpha$ )E=13.5-14.6 MeV; <sup>159</sup> Tb(n, p), (n, $\alpha$ ), (n, n' $\alpha$ ), (n, 2n), E=13.5-14.6 MeV; <sup>181</sup> Ta(n, $\gamma$ ), E=0.0019, 0.0587, 0.1445, 2.850, 14.340 MeV; measured E $\gamma$ , I $\gamma$ , $\sigma$ by activation technique, and isomeric ratios. Natural Lu, Tb and Ta targets. Comparison with values from TALYS-1.0 code. JOUR PRVCA 81 014610   |

KEYNUMBERS AND KEYWORDS

A=182 (*continued*)

- 2010KR02 NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{197}\text{Au}$ ,  $^{59}\text{Co}$ , In,  $^{181}\text{Ta}(n, \gamma)$ ,  $(n, \alpha)$ ,  $(n, xn)$ , E=1 GeV;  $^{191,192,193,194,196,198}\text{Au}$ ,  $^{24}\text{Na}$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70
- $^{182}\text{W}$  2011B001 RADIOACTIVITY  $^{181,182,183,184}\text{Re}(\text{EC})$ ;  $^{186}\text{Re}(\text{EC})$ ,  $(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . Comparison with nuclear databases. JOUR RAACA 99 1
- $^{182}\text{Re}$  20080CZZ NUCLEAR REACTIONS  $^{27}\text{Al}(d, x)^{24}\text{Na}$ ,  $^{51}\text{V}(d, 4n)$ ,  $\text{Fe}(d, x)^{54}\text{Mn}$ ,  $\text{Fe}(d, x)^{56}\text{Co}$ ,  $\text{Ni}(d, x)^{57}\text{Co}$ ,  $\text{Cu}(d, x)^{63}\text{Zn}$ ,  $\text{Ta}(d, x)^{180}\text{Ta}$ ,  $\text{W}(d, x)^{182}\text{Re}$ ,  $^{197}\text{Au}(d, x)^{194}\text{Au}$ , E=25, 35, 41, 50 MeV;  $\text{Cr}(d, x)^{48}\text{V}$ ,  $\text{Cr}(d, x)^{52}\text{Mn}$ ,  $^{55}\text{Mn}(d, x)^{54}\text{Mn}$ ,  $\text{Ni}(d, x)^{56}\text{Co}$ , E=39.5 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ; calculated  $\sigma$  using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011
- 2011B001 NUCLEAR REACTIONS  $\text{W}(p, xn)^{181}\text{Re} / ^{182}\text{Re} / ^{183}\text{Re} / ^{184}\text{Re} / ^{186}\text{Re}$ , E=9.5 MeV;  $^{186}\text{W}(p, n)$ , E=14, 17, 22 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced thick-target yields,  $\sigma$ . Comparison with EMPIRE II model code. JOUR RAACA 99 1
- 2011B001 RADIOACTIVITY  $^{181,182,183,184}\text{Re}(\text{EC})$ ;  $^{186}\text{Re}(\text{EC})$ ,  $(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . Comparison with nuclear databases. JOUR RAACA 99 1
- $^{182}\text{Os}$  2008MUZT NUCLEAR REACTIONS  $^{170}\text{Er}(^{13}\text{C}, \text{X})$ , E=70, 80 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\alpha\gamma$ -coin; deduced levels, J.  $^{180}\text{W}(^{20}\text{Ne}, \text{X})^{182}\text{Os}$ ,  $^{180}\text{W}(^{20}\text{Ne}, \text{X})^{186}\text{Pt}$ ,  $^{180}\text{W}(^{20}\text{Ne}, \text{X})^{193}\text{Pb}$ ,  $^{180}\text{W}(^{20}\text{Ne}, \text{X})^{196}\text{Po}$ , E not given; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, (particle) $\gamma$ -coin. Results on CD only. CONF E.Lansing (NS2008),P147,Mullins
- $^{182}\text{Ir}$  2010ZH26 RADIOACTIVITY  $^{162,164,166}\text{Tm}$ ,  $^{166,168,170,172}\text{Lu}$ ,  $^{170,172,174,176}\text{Ta}$ ,  $^{172,174,176,178,180}\text{Re}$ ,  $^{176,178,180,182}\text{Ir}$ ,  $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics.  $^{172}\text{Re}$ ; deduced high spin levels, J,  $\pi$ . JOUR NUPAB 834 32c
- $^{182}\text{Au}$  2010ZH26 RADIOACTIVITY  $^{162,164,166}\text{Tm}$ ,  $^{166,168,170,172}\text{Lu}$ ,  $^{170,172,174,176}\text{Ta}$ ,  $^{172,174,176,178,180}\text{Re}$ ,  $^{176,178,180,182}\text{Ir}$ ,  $^{182,184,186,188}\text{Au}(\text{IT})$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics.  $^{172}\text{Re}$ ; deduced high spin levels, J,  $\pi$ . JOUR NUPAB 834 32c
- $^{182}\text{Hg}$  2009PEZY NUCLEAR REACTIONS  $^{96}\text{Mo}(^{88}\text{Sr}, 2n)$ , E=351 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced decay curves of yrast transitions, quadrupole moments;  $^{107}\text{Ag}(^{184}\text{Hg}, ^{184}\text{Hg}')$ , E=2.85 MeV / nucleon;  $^{120}\text{Sn}(^{184}\text{Hg}, ^{184}\text{Hg}')$ , E=2.85 MeV / nucleon;  $^{107}\text{Ag}(^{186}\text{Hg}, ^{186}\text{Hg}')$ , E=2.85 MeV / nucleon;  $^{120}\text{Sn}(^{186}\text{Hg}, ^{186}\text{Hg}')$ , E=2.85 MeV / nucleon;  $^{107}\text{Ag}(^{188}\text{Hg}, ^{188}\text{Hg}')$ , E=2.85 MeV / nucleon;  $^{120}\text{Sn}(^{188}\text{Hg}, ^{188}\text{Hg}')$ , E=2.85 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin. Plunger device with JUROGAM + RITU + GREAT, matrix E2 elements to be extracted. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P414,Petts
- 2010JU02 RADIOACTIVITY  $^{180}\text{Pb}(\alpha)$ [from  $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ];  $^{176}\text{Hg}(\alpha)$ [from  $^{180}\text{Pb}(\alpha)$ ]; measured  $E\gamma$ ,  $I\gamma$ ,  $\alpha\gamma$ -coin.  $^{180,182,184,186,188}\text{Pb}(\alpha)$ ,  $(\beta^+)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced prolate bands aligned angular momentum.  $^{254}\text{No}(\text{IT})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c



KEYNUMBERS AND KEYWORDS

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**A=182 (continued)**

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| 2010SC03          |          | NUCLEAR REACTIONS $^{96}\text{Mo}(^{88}\text{Sr}, 2n)$ , $E=310$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, level half-lives by recoil distance Doppler-shift (RDDS) method using JUROGAM array. $^{182}\text{Hg}$ ; deduced levels, J, $\pi$ , transition probabilities, transition quadrupole moments, quadrupole deformation parameters, transition dipole moments, and octupole collectivity. Systematics of odd-spin yrast states and low-lying positive parity states in even $A=176$ -206 Hg isotopes. JOUR PRVCA 81 014310            |
| $^{182}\text{Tl}$ | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
| $^{182}\text{Pb}$ | 2009AN20 | RADIOACTIVITY $^{180,181}\text{Pb}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, xn)$ , $E=196$ MeV]; measured $E\alpha$ , $I\alpha$ , (evaporation residues) $\alpha$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations, and half-lives using SHIP at GSI facility; deduced branching ratios and $\alpha$ -reduced widths. $^{177}\text{Hg}$ ; deduced levels, J, $\pi$ . $^{172,173}\text{Pt}$ , $^{176,177}\text{Hg}(\alpha)$ ; measured $E\alpha$ , half-life. $^{178}\text{Hg}$ , $^{182}\text{Pb}$ ; measured $E\alpha$ . JOUR PRVCA 80 054322 |
|                   | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |

**A=183**

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| $^{183}\text{Hf}$ | 2008SEZT | NUCLEAR REACTIONS $^{50}\text{Cr}(n, x)^{48}\text{V}$ , $^{58}\text{Ni}(n, p\alpha)$ , $^{58}\text{Ni}(n, x)^{56}\text{Co}$ , $^{63}\text{Cu}(n, p\alpha)$ , $^{181}\text{Ta}(n, \alpha)$ , $^{181}\text{Ta}(n, p)$ , $^{181}\text{Ta}(n, x)^{180}\text{Hf}$ , $^{181}\text{Ta}(n, 2n)$ , $^{182,183,184,185}\text{W}(n, p)$ , $^{183}\text{W}(n, x)^{182}\text{Ta}$ , $^{184}\text{W}(n, x)^{183}\text{Ta}$ , $^{186}\text{W}(n, x)^{185}\text{Ta}$ , $^{186}\text{W}(n, 2n)$ , $^{184,186}\text{W}(n, \alpha)$ , $E=13.8$ -20.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559 |
|                   | 2010RE07 | NUCLEAR REACTIONS $^9\text{Be}(^{197}\text{Au}, X)^{183}\text{Hf}$ / $^{184}\text{Hf}$ / $^{186}\text{Hf}$ / $^{186}\text{Ta}$ / $^{187}\text{Ta}$ , $E=478$ -492 MeV / nucleon; measured Schottky frequency spectra of ions stored in an ESR storage ring; deduced $T_{1/2}$ , J, $\pi$ , isomer region near $N=116$ . JOUR PRLTA 105 172501   |
| $^{183}\text{Ta}$ | 2008SEZT | NUCLEAR REACTIONS $^{50}\text{Cr}(n, x)^{48}\text{V}$ , $^{58}\text{Ni}(n, p\alpha)$ , $^{58}\text{Ni}(n, x)^{56}\text{Co}$ , $^{63}\text{Cu}(n, p\alpha)$ , $^{181}\text{Ta}(n, \alpha)$ , $^{181}\text{Ta}(n, p)$ , $^{181}\text{Ta}(n, x)^{180}\text{Hf}$ , $^{181}\text{Ta}(n, 2n)$ , $^{182,183,184,185}\text{W}(n, p)$ , $^{183}\text{W}(n, x)^{182}\text{Ta}$ , $^{184}\text{W}(n, x)^{183}\text{Ta}$ , $^{186}\text{W}(n, x)^{185}\text{Ta}$ , $^{186}\text{W}(n, 2n)$ , $^{184,186}\text{W}(n, \alpha)$ , $E=13.8$ -20.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559 |

KEYNUMBERS AND KEYWORDS

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**A=183 (continued)**

$^{183}\text{W}$	2011B001	RADIOACTIVITY $^{181,182,183,184}\text{Re}(\text{EC})$ ; $^{186}\text{Re}(\text{EC})$ , ( $\beta^-$ ); measured $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ . Comparison with nuclear databases. JOUR RAACA 99 1
$^{183}\text{Re}$	2011B001	NUCLEAR REACTIONS $\text{W}(\text{p}, \text{xn})^{181}\text{Re} / ^{182}\text{Re} / ^{183}\text{Re} / ^{184}\text{Re} / ^{186}\text{Re}$ , $E=9.5$ MeV; $^{186}\text{W}(\text{p}, \text{n})$ , $E=14, 17, 22$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced thick-target yields, $\sigma$ . Comparison with EMPIRE II model code. JOUR RAACA 99 1
	2011B001	RADIOACTIVITY $^{181,182,183,184}\text{Re}(\text{EC})$ ; $^{186}\text{Re}(\text{EC})$ , ( $\beta^-$ ); measured $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ . Comparison with nuclear databases. JOUR RAACA 99 1
$^{183}\text{Tl}$	2011VE01	RADIOACTIVITY $^{183}\text{Tl}(\alpha)$ , $^{179}\text{Au}(\text{IT})$ [from $^{107}\text{Ag}(^{78}\text{Kr}, \text{X})^{185}\text{Bi}(2\text{p})$ ]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin., $E_\alpha$ , $I_\alpha$ , $\alpha$ - $\gamma$ coin.; deduced new isomer, $T_{1/2}$ , $B(\text{E}1)$ , level scheme, shape coexistence, intruder states. JOUR PYLBB 695 82

**A=184**

$^{184}\text{Hf}$	2010RE07	NUCLEAR REACTIONS $^9\text{Be}(^{197}\text{Au}, \text{X})^{183}\text{Hf} / ^{184}\text{Hf} / ^{186}\text{Hf} / ^{186}\text{Ta} / ^{187}\text{Ta}$ , $E=478$ - $492$ MeV / nucleon; measured Schottky frequency spectra of ions stored in an ESR storage ring; deduced $T_{1/2}$ , $J$ , $\pi$ , isomer region near $N=116$ . JOUR PRLTA 105 172501
$^{184}\text{Ta}$	2008SEZT	NUCLEAR REACTIONS $^{50}\text{Cr}(\text{n}, \text{x})^{48}\text{V}$ , $^{58}\text{Ni}(\text{n}, \text{p}\alpha)$ , $^{58}\text{Ni}(\text{n}, \text{x})^{56}\text{Co}$ , $^{63}\text{Cu}(\text{n}, \text{p}\alpha)$ , $^{181}\text{Ta}(\text{n}, \alpha)$ , $^{181}\text{Ta}(\text{n}, \text{p})$ , $^{181}\text{Ta}(\text{n}, \text{x})^{180}\text{Hf}$ , $^{181}\text{Ta}(\text{n}, 2\text{n})$ , $^{182,183,184,185}\text{W}(\text{n}, \text{p})$ , $^{183}\text{W}(\text{n}, \text{x})^{182}\text{Ta}$ , $^{184}\text{W}(\text{n}, \text{x})^{183}\text{Ta}$ , $^{186}\text{W}(\text{n}, \text{x})^{185}\text{Ta}$ , $^{186}\text{W}(\text{n}, 2\text{n})$ , $^{184,186}\text{W}(\text{n}, \alpha)$ , $E=13.8$ - $20.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559
$^{184}\text{W}$	2008HAZP	RADIOACTIVITY $^{184}\text{Re}(\beta^+)$ [from $^{185}\text{Re}$ ]; measured $E_\gamma$ , $I_\gamma(t)$ ; deduced $^{184}\text{Re}$ half-life, isomeric transition half-life. CONF Nice (Nucl Data for Sci and Technol) Proc,P73
	2010JI07	NUCLEAR REACTIONS $^{152,154}\text{Sm}$ , $^{184}\text{W}$ , $^{196}\text{Pt}$ , $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O}')$ , $E(\text{cm})=35$ - $70$ MeV; measured $\sigma(\theta=175^\circ)$ ; calculated $\sigma$ using CC and single-channel formalisms; deduced nuclear potential diffuseness parameters. JOUR NUPAB 834 189c
	2011B001	RADIOACTIVITY $^{181,182,183,184}\text{Re}(\text{EC})$ ; $^{186}\text{Re}(\text{EC})$ , ( $\beta^-$ ); measured $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ . Comparison with nuclear databases. JOUR RAACA 99 1
$^{184}\text{Re}$	2008HAZP	NUCLEAR REACTIONS $^{185}\text{Re}(\gamma, \text{n})$ , $E=3.3$ - $16.7$ MeV; measured $^{184}\text{Re}$ $E_\gamma$ , $I_\gamma(t)$ ; calculated $^{184}\text{Re}$ ground-state $\sigma$ , isomeric $\sigma$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P73
	2008HAZP	RADIOACTIVITY $^{184}\text{Re}(\beta^+)$ [from $^{185}\text{Re}$ ]; measured $E_\gamma$ , $I_\gamma(t)$ ; deduced $^{184}\text{Re}$ half-life, isomeric transition half-life. CONF Nice (Nucl Data for Sci and Technol) Proc,P73

KEYNUMBERS AND KEYWORDS

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**A=184 (continued)**

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| 2011B001          | NUCLEAR REACTIONS W(p, xn) <sup>181</sup> Re / <sup>182</sup> Re / <sup>183</sup> Re / <sup>184</sup> Re / <sup>186</sup> Re, E=9.5 MeV; <sup>186</sup> W(p, n), E=14, 17, 22 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick-target yields, $\sigma$ . Comparison with EMPIRE II model code. JOUR RAACA 99 1   |
| 2011B001          | RADIOACTIVITY <sup>181,182,183,184</sup> Re(EC); <sup>186</sup> Re(EC), ( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with nuclear databases. JOUR RAACA 99 1   |
| <sup>184</sup> Ir | 2009YA25 NUCLEAR REACTIONS <sup>197</sup> Au( <sup>12</sup> C, X) <sup>184</sup> Ir / <sup>185</sup> Ir / <sup>186</sup> Ir / <sup>187</sup> Ir / <sup>189</sup> Ir / <sup>190</sup> Ir / <sup>192</sup> Ir / <sup>194</sup> Ir / <sup>195</sup> Ir / <sup>196</sup> Ir, E=47 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196  |
| <sup>184</sup> Au | 2010ZH26 RADIOACTIVITY <sup>162,164,166</sup> Tm, <sup>166,168,170,172</sup> Lu, <sup>170,172,174,176</sup> Ta, <sup>172,174,176,178,180</sup> Re, <sup>176,178,180,182</sup> Ir, <sup>182,184,186,188</sup> Au(IT); measured E $\gamma$ , I $\gamma$ ( $\theta$ ), $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. <sup>172</sup> Re; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c   |
| <sup>184</sup> Hg | 2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup> Kr, <sup>111</sup> Cd, <sup>121,124,126</sup> I, <sup>120,121,122,123,125,127,129,131,133</sup> Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup> Hg, <sup>204,205,206,207,208,209,210</sup> At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069 |
| 2010JU02          | RADIOACTIVITY <sup>180</sup> Pb( $\alpha$ )[from <sup>92</sup> Mo( <sup>90</sup> Zr, 2n)]; <sup>176</sup> Hg( $\alpha$ )[from <sup>180</sup> Pb( $\alpha$ )]; measured E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin. <sup>180,182,184,186,188</sup> Pb( $\alpha$ ), ( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ ; deduced prolate bands aligned angular momentum. <sup>254</sup> No(IT); measured E $\gamma$ , I $\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
| <sup>184</sup> Tl | 2010JU02 RADIOACTIVITY <sup>180</sup> Pb( $\alpha$ )[from <sup>92</sup> Mo( <sup>90</sup> Zr, 2n)]; <sup>176</sup> Hg( $\alpha$ )[from <sup>180</sup> Pb( $\alpha$ )]; measured E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin. <sup>180,182,184,186,188</sup> Pb( $\alpha$ ), ( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ ; deduced prolate bands aligned angular momentum. <sup>254</sup> No(IT); measured E $\gamma$ , I $\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c   |
| <sup>184</sup> Pb | 2010JU02 RADIOACTIVITY <sup>180</sup> Pb( $\alpha$ )[from <sup>92</sup> Mo( <sup>90</sup> Zr, 2n)]; <sup>176</sup> Hg( $\alpha$ )[from <sup>180</sup> Pb( $\alpha$ )]; measured E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin. <sup>180,182,184,186,188</sup> Pb( $\alpha$ ), ( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ ; deduced prolate bands aligned angular momentum. <sup>254</sup> No(IT); measured E $\gamma$ , I $\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c   |

## A=185

- <sup>185</sup>Ta 2008SEZT NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, pα), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, pα), <sup>181</sup>Ta(n, α), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n, α), E=13.8-20.5 MeV; measured Eγ, Iγ; deduced σ. Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559
- <sup>185</sup>W 2008SEZT NUCLEAR REACTIONS <sup>50</sup>Cr(n, x)<sup>48</sup>V, <sup>58</sup>Ni(n, pα), <sup>58</sup>Ni(n, x)<sup>56</sup>Co, <sup>63</sup>Cu(n, pα), <sup>181</sup>Ta(n, α), <sup>181</sup>Ta(n, p), <sup>181</sup>Ta(n, x)<sup>180</sup>Hf, <sup>181</sup>Ta(n, 2n), <sup>182,183,184,185</sup>W(n, p), <sup>183</sup>W(n, x)<sup>182</sup>Ta, <sup>184</sup>W(n, x)<sup>183</sup>Ta, <sup>186</sup>W(n, x)<sup>185</sup>Ta, <sup>186</sup>W(n, 2n), <sup>184,186</sup>W(n, α), E=13.8-20.5 MeV; measured Eγ, Iγ; deduced σ. Compared to published data, TALYS and EMPIRE calculations, EAF-2003, EAF-2005, EAF-2007, ADL-3T, JEFF-3.1, JENDL-3.3, JENDL-ACT, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P559
- <sup>185</sup>Os 2010MA50 NUCLEAR REACTIONS <sup>168</sup>Yb, <sup>180</sup>W, <sup>184</sup>Os, <sup>190</sup>Pt, <sup>196</sup>Hg(n, γ), E=spectrum[neutrons from <sup>7</sup>Li(p, n), E=1912 keV]; measured Eγ, Iγ, σ using activation method; deduced capture cross sections for an average neutron energy of kT=25 keV. Comparison with previous measurements. Discussed impact on p-process network. JOUR PRVCA 82 035806
- <sup>185</sup>Ir 2009YA25 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>12</sup>C, X)<sup>184</sup>Ir / <sup>185</sup>Ir / <sup>186</sup>Ir / <sup>187</sup>Ir / <sup>189</sup>Ir / <sup>190</sup>Ir / <sup>192</sup>Ir / <sup>194</sup>Ir / <sup>195</sup>Ir / <sup>196</sup>Ir, E=47 MeV / nucleon; measured Eγ, Iγ; deduced σ. JOUR CPCHC 33 s01 196

## A=186

- <sup>186</sup>Hf 2009AL30 NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed γ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- 2010RE07 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>197</sup>Au, X)<sup>183</sup>Hf / <sup>184</sup>Hf / <sup>186</sup>Hf / <sup>186</sup>Ta / <sup>187</sup>Ta, E=478-492 MeV / nucleon; measured Schottky frequency spectra of ions stored in an ESR storage ring; deduced T<sub>1/2</sub>, J, π, isomer region near N=116. JOUR PRLTA 105 172501
- <sup>186</sup>Ta 2010RE07 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>197</sup>Au, X)<sup>183</sup>Hf / <sup>184</sup>Hf / <sup>186</sup>Hf / <sup>186</sup>Ta / <sup>187</sup>Ta, E=478-492 MeV / nucleon; measured Schottky frequency spectra of ions stored in an ESR storage ring; deduced T<sub>1/2</sub>, J, π, isomer region near N=116. JOUR PRLTA 105 172501
- <sup>186</sup>W 2011B001 RADIOACTIVITY <sup>181,182,183,184</sup>Re(EC); <sup>186</sup>Re(EC), (β<sup>-</sup>); measured Eγ, Iγ; deduced T<sub>1/2</sub>. Comparison with nuclear databases. JOUR RAACA 99 1

KEYNUMBERS AND KEYWORDS

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**A=186 (continued)**

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| <sup>186</sup> Re | 2008MEZV | NUCLEAR REACTIONS <sup>209</sup> Bi( $\alpha$ , x), E=28.8, 32.8 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ; <sup>186</sup> W(p, n), E=7-15 MeV; deduced $\sigma$ ; calculated $\sigma$ ; Zn(d, x) <sup>61</sup> Cu, E $\approx$ 3-19 MeV; Zn(d, x) <sup>64</sup> Cu, E $\approx$ 3-19 MeV; Zn(d, x) <sup>66</sup> Ga, E $\approx$ 3-19 MeV; Zn(d, x) <sup>67</sup> Ga, E $\approx$ 3-19 MeV; Zn(d, x) <sup>65</sup> Zn, E $\approx$ 3-19 MeV; Zn(d, x) <sup>69</sup> Zn, E $\approx$ 3-19 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thin target yields; <sup>103</sup> Rh(d, 2n), E $\approx$ 3-20 MeV; <sup>232</sup> Th(p, 3n), E $\approx$ 13-31 MeV; calculated $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403 |
|                   | 2009KEZZ | NUCLEAR REACTIONS <sup>187</sup> Re(n, 2n $\gamma$ ) <sup>186m</sup> Re, E=12 MeV; measured E $\gamma$ , I $\gamma$ 12 up to months after irradiation. Aim is to reduce uncertainties in <sup>186</sup> Re / <sup>187</sup> Os cosmochronometer; further experiments and analyses to follow. REPT TUNL-XLVIII,P48,Kelley   |
|                   | 2011B001 | NUCLEAR REACTIONS W(p, xn) <sup>181</sup> Re / <sup>182</sup> Re / <sup>183</sup> Re / <sup>184</sup> Re / <sup>186</sup> Re, E=9.5 MeV; <sup>186</sup> W(p, n), E=14, 17, 22 MeV; measured E $\gamma$ , I $\gamma$ ; deduced thick-target yields, $\sigma$ . Comparison with EMPIRE II model code. JOUR RAACA 99 1  |
|                   | 2011B001 | RADIOACTIVITY <sup>181,182,183,184</sup> Re(EC); <sup>186</sup> Re(EC), ( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with nuclear databases. JOUR RAACA 99 1  |
| <sup>186</sup> Os | 2008PHZW | NUCLEAR REACTIONS <sup>185,187</sup> Re( <sup>3</sup> He, d), E=30 MeV; measured A(particle), Z(particle), E(particle), I(particle, $\theta$ ); deduced levels, J, $\pi$ , $\sigma(\theta)$ . Calculated $\sigma(\theta)$ using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P160,Phillips  |
|                   | 2009PHZY | NUCLEAR REACTIONS <sup>185,187</sup> Re( <sup>3</sup> He, d), E=30 MeV; measured E(particle), I(particle), $\theta$ (particle); deduced d $\sigma(\theta)$ , rotational bands; calculated d $\sigma(\theta)$ , rotational bands using DWBA. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P342,Phillips   |
|                   | 2010PH01 | NUCLEAR REACTIONS <sup>185,187</sup> Re( <sup>3</sup> He, d), E=30 MeV; measured E(d), I(d), $\sigma$ , $\sigma(\theta)$ ; DWBA analysis of $\sigma(\theta)$ data. <sup>186,188</sup> Os; deduced levels, J, $\pi$ , L-transfers, spectroscopic factors, bands and amplitudes of two-quasiparticle components. Comparison with quasiparticle-phonon model (QPM) predictions. JOUR PRVCA 82 034321  |
|                   | 2011B001 | RADIOACTIVITY <sup>181,182,183,184</sup> Re(EC); <sup>186</sup> Re(EC), ( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> . Comparison with nuclear databases. JOUR RAACA 99 1  |
| <sup>186</sup> Ir | 2009YA25 | NUCLEAR REACTIONS <sup>197</sup> Au( <sup>12</sup> C, X) <sup>184</sup> Ir / <sup>185</sup> Ir / <sup>186</sup> Ir / <sup>187</sup> Ir / <sup>189</sup> Ir / <sup>190</sup> Ir / <sup>192</sup> Ir / <sup>194</sup> Ir / <sup>195</sup> Ir / <sup>196</sup> Ir, E=47 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196  |
|                   | 2010SI10 | NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>16</sup> O, X) <sup>186</sup> Ir / <sup>190</sup> Au / <sup>191</sup> Au / <sup>192</sup> Au / <sup>191</sup> Hg / <sup>192</sup> Hg / <sup>193</sup> Hg / <sup>192</sup> Tl / <sup>193</sup> Tl / <sup>194</sup> Tl, E=81, 90, 96 MeV; measured E $\gamma$ , I $\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607  |
| <sup>186</sup> Pt | 2008MUZT | NUCLEAR REACTIONS <sup>170</sup> Er( <sup>13</sup> C, X), E=70, 80 MeV; measured E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin; deduced levels, J. <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>182</sup> Os, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>186</sup> Pt, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>193</sup> Pb, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>196</sup> Po, E not given; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin. Results on CD only. CONF E.Lansing (NS2008),P147,Mullins  |

KEYNUMBERS AND KEYWORDS

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**A=186 (continued)**

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| $^{186}\text{Au}$ | 2010ZH26 | RADIOACTIVITY $^{162,164,166}\text{Tm}$ , $^{166,168,170,172}\text{Lu}$ , $^{170,172,174,176}\text{Ta}$ , $^{172,174,176,178,180}\text{Re}$ , $^{176,178,180,182}\text{Ir}$ , $^{182,184,186,188}\text{Au(IT)}$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics. $^{172}\text{Re}$ ; deduced high spin levels, J, $\pi$ . JOUR NUPAB 834 32c  |
| $^{186}\text{Hg}$ | 2008TAZI | NUCLEAR REACTIONS $\text{Pb(p, x)}$ , E=1, 1.4 GeV; $\text{Bi(p, x)}$ , E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069 |
| $^{186}\text{Tl}$ | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , ( $\beta^+$ ); measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No(IT)}$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |
| $^{186}\text{Pb}$ | 2010JU02 | RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , ( $\beta^+$ ); measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No(IT)}$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c  |

**A=187**

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| $^{187}\text{Hf}$ | 2009AL30 | NUCLEAR REACTIONS $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf}$ / $^{187}\text{Hf}$ / $^{188}\text{Hf}$ / $^{189}\text{Hf}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ / $^{190}\text{Ta}$ / $^{191}\text{Ta}$ / $^{192}\text{Ta}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{192}\text{W}$ / $^{193}\text{W}$ / $^{194}\text{W}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{195}\text{Re}$ / $^{196}\text{Re}$ , E=1 GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308 |
| $^{187}\text{Ta}$ | 2010RE07 | NUCLEAR REACTIONS $^9\text{Be}(^{197}\text{Au}, X)^{183}\text{Hf}$ / $^{184}\text{Hf}$ / $^{186}\text{Hf}$ / $^{186}\text{Ta}$ / $^{187}\text{Ta}$ , E=478-492 MeV / nucleon; measured Schottky frequency spectra of ions stored in an ESR storage ring; deduced $T_{1/2}$ , J, $\pi$ , isomer region near N=116. JOUR PRLTA 105 172501   |
| $^{187}\text{W}$  | 2010EL02 | NUCLEAR REACTIONS $^{98}\text{Mo}$ , $^{186}\text{W}$ , $^{197}\text{Au}(n, \gamma)$ , E=thermal; measured $E\gamma$ , $I\gamma$ ; deduced neutron flux, $\sigma$ , resonance integrals. Comparison with available data. JOUR JRNCD 284 321   |
| $^{187}\text{Os}$ | 2008MOZR | NUCLEAR REACTIONS $^{187}\text{Os}(n, n')$ , E=30 keV; measured $E_n$ , $I_n$ ; deduced $\sigma$ ; calculated $\sigma$ . Compared to other data below 70 keV. CONF Nice (Nucl Data for Sci and Technol) Proc,P1307  |
|                   | 2010C002 | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , $\text{Pb}$ , $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643   |

KEYNUMBERS AND KEYWORDS

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**A=187** (*continued*)

- 2010FU04 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra,  $\sigma$  at CERN n\_TOF facility; deduced resonance energies and parameters, strength functions, radiative and neutron widths, resonance kernels, stellar enhancement factors, and average level spacings. R-matrix analysis of neutron resonance spectra. Hauser-Feshbach statistical model. Comparison with previous data. Discussed s-process component of  $^{187}\text{Os}$  abundance and impact on the time duration of galactic nucleosynthesis via the Re / Os cosmochronometer. JOUR PRVCA 82 015804
- 2010M015 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra and  $\sigma$  at CERN n\_TOF facility; deduced resonances and Maxwellian averaged cross sections (MACS). R-matrix analysis of neutron resonance spectra. Relevance to radiogenic component of the abundance of  $^{187}\text{Os}$  and Re / Os cosmochronometer. Comparison with previous data. JOUR PRVCA 82 015802
- 2010M016 NUCLEAR REACTIONS  $^{187,188}\text{Os}(n, n')$ ,  $E=30$  keV; measured neutron time-of-flight spectra at CERN n\_TOF facility; deduced  $\sigma$ . Comparison with previous data and with coupled-channel (CC) calculations. Relevance to  $^{187}\text{Os}$  and Re / Os cosmochronometer. JOUR PRVCA 82 015803
- $^{187}\text{Ir}$  2009YA25 NUCLEAR REACTIONS  $^{197}\text{Au}(^{12}\text{C}, X)^{184}\text{Ir} / ^{185}\text{Ir} / ^{186}\text{Ir} / ^{187}\text{Ir} / ^{189}\text{Ir} / ^{190}\text{Ir} / ^{192}\text{Ir} / ^{194}\text{Ir} / ^{195}\text{Ir} / ^{196}\text{Ir}$ ,  $E=47$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR CPCHC 33 s01 196
- 2010M009 NUCLEAR REACTIONS  $^{186}\text{W}(^7\text{Li}, 6n)^{187}\text{Ir}$ ,  $E=59$  MeV; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -,  $\gamma\gamma$ -coin, DCO, delayed  $\gamma$  rays, half-lives using GASP array.  $^{187}\text{Ir}$ ; deduced levels, J,  $\pi$ , rotational bands, multiquasiparticle high-K states, configurations. Comparison with systematics of bands in  $^{181,183,185}\text{Ir}$ ,  $^{182,184,186}\text{Os}$ . JOUR PRVCA 81 054304
- 2010SZ03 NUCLEAR REACTIONS  $^{192}\text{Os}(p, n)$ ,  $(p, 3n)$ ,  $(p, 4n)$ ,  $(p, 5n)$ ,  $(p, 6n)$ ,  $\text{Cu}(p, n)^{65}\text{Zn}$ ,  $\text{Al}(p, X)^{24}\text{Na}$ ,  $\text{Cu}(p, X)^{62}\text{Zn}$   $E < 66$  MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306

**A=188**

- $^{188}\text{Hf}$  2009AL30 NUCLEAR REACTIONS  $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ ,  $E=1$  GeV / nucleon; measured yields.  $^{187}\text{Hf}$ ,  $^{188,189,190}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- $^{188}\text{Ta}$  2009AL30 NUCLEAR REACTIONS  $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ ,  $E=1$  GeV / nucleon; measured yields.  $^{187}\text{Hf}$ ,  $^{188,189,190}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

A=188 (*continued*)

- 2009AL30 RADIOACTIVITY  $^{188,190,192}\text{Ta}(\beta^-)$ [from  $\text{Be}(^{208}\text{Pb}, \text{X})$ ,  $E=1$  GeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$  correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array.  $^{188,190,192}\text{W}$ ; deduced levels,  $J$ ,  $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for  $^{190}\text{W}$ .  $Z=56-80$ ,  $N=84-122$ ; discussed systematics of first  $2+$  and  $4+$  states,  $B(E2)$ , and  $\gamma$  deformation parameter in even-even nuclei. JOUR PRVCA 80 064308
- $^{188}\text{W}$  2009AL30 RADIOACTIVITY  $^{188,190,192}\text{Ta}(\beta^-)$ [from  $\text{Be}(^{208}\text{Pb}, \text{X})$ ,  $E=1$  GeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$  correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array.  $^{188,190,192}\text{W}$ ; deduced levels,  $J$ ,  $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for  $^{190}\text{W}$ .  $Z=56-80$ ,  $N=84-122$ ; discussed systematics of first  $2+$  and  $4+$  states,  $B(E2)$ , and  $\gamma$  deformation parameter in even-even nuclei. JOUR PRVCA 80 064308
- $^{188}\text{Re}$  2009BAZS NUCLEAR REACTIONS  $^{187}\text{Re}(n, \gamma)$ ,  $E=\text{reactor spectrum}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $E$ ,  $J$ ,  $\pi$ , low-energy bands, rotational bands; calculated  $E$ ,  $J$ ,  $\pi$  using rotor plus two quasiparticles. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P609,Balodis
- $^{188}\text{Os}$  2008PHZW NUCLEAR REACTIONS  $^{185,187}\text{Re}(^3\text{He}, d)$ ,  $E=30$  MeV; measured  $A(\text{particle})$ ,  $Z(\text{particle})$ ,  $E(\text{particle})$ ,  $I(\text{particle}, \theta)$ ; deduced levels,  $J$ ,  $\pi$ ,  $\sigma(\theta)$ . Calculated  $\sigma(\theta)$  using DWUCK4. Results on CD only. CONF E.Lansing (NS2008),P160,Phillips
- 2009PHZY NUCLEAR REACTIONS  $^{185,187}\text{Re}(^3\text{He}, d)$ ,  $E=30$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $\theta(\text{particle})$ ; deduced  $d\sigma(\theta)$ , rotational bands; calculated  $d\sigma(\theta)$ , rotational bands using DWBA. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P342,Phillips
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ ,  $E=0.001-1$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010FU04 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra,  $\sigma$  at CERN n\_TOF facility; deduced resonance energies and parameters, strength functions, radiative and neutron widths, resonance kernels, stellar enhancement factors, and average level spacings. R-matrix analysis of neutron resonance spectra. Hauser-Feshbach statistical model. Comparison with previous data. Discussed s-process component of  $^{187}\text{Os}$  abundance and impact on the time duration of galactic nucleosynthesis via the Re / Os cosmochronometer. JOUR PRVCA 82 015804
- 2010M015 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra and  $\sigma$  at CERN n\_TOF facility; deduced resonances and Maxwellian averaged cross sections (MACS). R-matrix analysis of neutron resonance spectra. Relevance to radiogenic component of the abundance of  $^{187}\text{Os}$  and Re / Os cosmochronometer. Comparison with previous data. JOUR PRVCA 82 015802



A=188 (*continued*)

- 2010M016 NUCLEAR REACTIONS  $^{187,188}\text{Os}(n, n')$ , E=30 keV; measured neutron time-of-flight spectra at CERN n\_TOF facility; deduced  $\sigma$ . Comparison with previous data and with coupled-channel (CC) calculations. Relevance to  $^{187}\text{Os}$  and Re / Os cosmochronometer. JOUR PRVCA 82 015803
- 2010PH01 NUCLEAR REACTIONS  $^{185,187}\text{Re}(^3\text{He}, d)$ , E=30 MeV; measured E(d), I(d),  $\sigma$ ,  $\sigma(\theta)$ ; DWBA analysis of  $\sigma(\theta)$  data.  $^{186,188}\text{Os}$ ; deduced levels, J,  $\pi$ , L-transfers, spectroscopic factors, bands and amplitudes of two-quasiparticle components. Comparison with quasiparticle-phonon model (QPM) predictions. JOUR PRVCA 82 034321
- $^{188}\text{Ir}$  2008COZX NUCLEAR REACTIONS  $^{191}\text{Ir}(n, \gamma)$ , E $\approx$ 0-20 MeV;  $^{191}\text{Ir}(n, n')$ , E $\approx$ 0-20 MeV;  $^{191}\text{Ir}(n, 2n)$ , E $\approx$ 5-25 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ ,  $^{190,191}\text{Ir}$  isomeric transition, role of metastable states; calculated  $\sigma$ ,  $\sigma$ (isomeric transition) using FKK-GNASH and exciton model;  $^{191}\text{Ir}(n, 2n)$ ,  $^{191}\text{Ir}(n, 3n)$ ,  $^{191}\text{Ir}(n, 4n)$ , E $\approx$ 5-35 MeV; calculated  $\sigma$ . Compared to data and evaluations. GEANIE facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P247
- 2010SZ03 NUCLEAR REACTIONS  $^{192}\text{Os}(p, n)$ , (p, 3n), (p, 4n), (p, 5n), (p, 6n), Cu(p, n) $^{65}\text{Zn}$ , Al(p, X) $^{24}\text{Na}$ , Cu(p, X) $^{62}\text{Zn}$  E < 66 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306
- $^{188}\text{Au}$  2010ZH26 RADIOACTIVITY  $^{162,164,166}\text{Tm}$ ,  $^{166,168,170,172}\text{Lu}$ ,  $^{170,172,174,176}\text{Ta}$ ,  $^{172,174,176,178,180}\text{Re}$ ,  $^{176,178,180,182}\text{Ir}$ ,  $^{182,184,186,188}\text{Au(IT)}$ ; measured E $\gamma$ , I $\gamma(\theta)$ ,  $\gamma\gamma$ -, (K X-ray) $\gamma$ -coin using in-beam spectroscopy; deduced bands, signature splittings, systematics.  $^{172}\text{Re}$ ; deduced high spin levels, J,  $\pi$ . JOUR NUPAB 834 32c
- $^{188}\text{Hg}$  2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- $^{188}\text{Tl}$  2010JU02 RADIOACTIVITY  $^{180}\text{Pb}(\alpha)$ [from  $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ];  $^{176}\text{Hg}(\alpha)$ [from  $^{180}\text{Pb}(\alpha)$ ]; measured E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin.  $^{180,182,184,186,188}\text{Pb}(\alpha)$ , ( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ ; deduced prolate bands aligned angular momentum.  $^{254}\text{No(IT)}$ ; measured E $\gamma$ , I $\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c
- $^{188}\text{Pb}$  2010I001 NUCLEAR MOMENTS  $^{188}\text{Pb}$ ; measured g factors using time-differential perturbed angular distribution method. Systematics of g factors for 12+ and 13 / 2+ states in Pb nuclei from A=183-207. Rotational model interpretation. JOUR PRVCA 81 024323
- 2010I001 NUCLEAR REACTIONS  $^{164}\text{Er}(^{28}\text{Si}, 4n)^{188}\text{Pb}$ , E=143 MeV; measured E $\gamma$ , I $\gamma$ , half-life and g factors. JOUR PRVCA 81 024323

KEYNUMBERS AND KEYWORDS

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**A=188 (continued)**

2010JU02 RADIOACTIVITY  $^{180}\text{Pb}(\alpha)$ [from  $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ];  $^{176}\text{Hg}(\alpha)$ [from  $^{180}\text{Pb}(\alpha)$ ]; measured  $E\gamma$ ,  $I\gamma$ ,  $\alpha\gamma$ -coin.  $^{180,182,184,186,188}\text{Pb}(\alpha)$ ,  $(\beta^+)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced prolate bands aligned angular momentum.  $^{254}\text{No}(\text{IT})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c

**A=189**

$^{189}\text{Hf}$  2009AL30 NUCLEAR REACTIONS  $\text{Be}(^{208}\text{Pb}, \text{X})^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ ,  $E=1$  GeV / nucleon; measured yields.  $^{187}\text{Hf}$ ,  $^{188,189,190}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

$^{189}\text{Ta}$  2009AL30 NUCLEAR REACTIONS  $\text{Be}(^{208}\text{Pb}, \text{X})^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ ,  $E=1$  GeV / nucleon; measured yields.  $^{187}\text{Hf}$ ,  $^{188,189,190}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

$^{189}\text{W}$  2009YU11 RADIOACTIVITY  $^{189}\text{W}(\beta^-)$  [from  $^{192}\text{Os}(n, \alpha)^{189}\text{Re}$ ,  $E=14$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $X\text{-}\gamma$ -coin.,  $\gamma\text{-}\gamma$ -coin.; deduced decay scheme,  $J$ ,  $\pi$ , energies. JOUR CPCHC 33 s01 191

$^{189}\text{Re}$  2009YU11 RADIOACTIVITY  $^{189}\text{W}(\beta^-)$  [from  $^{192}\text{Os}(n, \alpha)^{189}\text{Re}$ ,  $E=14$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $X\text{-}\gamma$ -coin.,  $\gamma\text{-}\gamma$ -coin.; deduced decay scheme,  $J$ ,  $\pi$ , energies. JOUR CPCHC 33 s01 191

$^{189}\text{Os}$  2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ ,  $E=0.001\text{-}1$  MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

2010FU04 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra,  $\sigma$  at CERN n\_TOF facility; deduced resonance energies and parameters, strength functions, radiative and neutron widths, resonance kernels, stellar enhancement factors, and average level spacings. R-matrix analysis of neutron resonance spectra. Hauser-Feshbach statistical model. Comparison with previous data. Discussed s-process component of  $^{187}\text{Os}$  abundance and impact on the time duration of galactic nucleosynthesis via the Re / Os cosmochronometer. JOUR PRVCA 82 015804

2010M015 NUCLEAR REACTIONS  $^{186,187,188}\text{Os}(n, \gamma)$ ,  $E=1$  eV-1 MeV; measured neutron time-of-flight spectra and  $\sigma$  at CERN n\_TOF facility; deduced resonances and Maxwellian averaged cross sections (MACS). R-matrix analysis of neutron resonance spectra. Relevance to radiogenic component of the abundance of  $^{187}\text{Os}$  and Re / Os cosmochronometer. Comparison with previous data. JOUR PRVCA 82 015802

KEYNUMBERS AND KEYWORDS

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**A=189 (continued)**

$^{189}\text{Ir}$	2008COZX	NUCLEAR REACTIONS $^{191}\text{Ir}(n, \gamma)$ , $E \approx 0\text{-}20$ MeV; $^{191}\text{Ir}(n, n')$ , $E \approx 0\text{-}20$ MeV; $^{191}\text{Ir}(n, 2n)$ , $E \approx 5\text{-}25$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ , $^{190,191}\text{Ir}$ isomeric transition, role of metastable states; calculated $\sigma$ , $\sigma$ (isomeric transition) using FKK-GNASH and exciton model; $^{191}\text{Ir}(n, 2n)$ , $^{191}\text{Ir}(n, 3n)$ , $^{191}\text{Ir}(n, 4n)$ , $E \approx 5\text{-}35$ MeV; calculated $\sigma$ . Compared to data and evaluations. GEANIE facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P247
	2009YA25	NUCLEAR REACTIONS $^{197}\text{Au}(^{12}\text{C}, X)^{184}\text{Ir} / ^{185}\text{Ir} / ^{186}\text{Ir} / ^{187}\text{Ir} / ^{189}\text{Ir} / ^{190}\text{Ir} / ^{192}\text{Ir} / ^{194}\text{Ir} / ^{195}\text{Ir} / ^{196}\text{Ir}$ , $E=47$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196
	2010SZ03	NUCLEAR REACTIONS $^{192}\text{Os}(p, n)$ , $(p, 3n)$ , $(p, 4n)$ , $(p, 5n)$ , $(p, 6n)$ , $\text{Cu}(p, n)^{65}\text{Zn}$ , $\text{Al}(p, X)^{24}\text{Na}$ , $\text{Cu}(p, X)^{62}\text{Zn}$ $E < 66$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306
$^{189}\text{Pt}$	2009HU17	NUCLEAR REACTIONS $^{176}\text{Yb}(^{18}\text{O}, 5n)$ , $E=88, 95$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced level energies, $J$ , $\pi$ , bands, deformation. Triaxial particle-rotor model. JOUR CPCHC 33 743

**A=190**

$^{190}\text{Ta}$	2008GOZP	RADIOACTIVITY $^{54}\text{Ni}(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced $^{54}\text{Ni}$ $T_{1/2}$ , GT distribution strength; $^{62}\text{Ge}$ ; $^{113}\text{In}$ ; $^{190}\text{Ta}$ ; measured decay products. Results on CD only. CONF E.Lansing (NS2008),P9,Gorska
	2009AL30	NUCLEAR REACTIONS $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ , $E=1$ GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
	2009AL30	RADIOACTIVITY $^{188,190,192}\text{Ta}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\beta\gamma$ correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array. $^{188,190,192}\text{W}$ ; deduced levels, $J$ , $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for $^{190}\text{W}$ . $Z=56\text{-}80$ , $N=84\text{-}122$ ; discussed systematics of first $2+$ and $4+$ states, $B(E2)$ , and $\gamma$ deformation parameter in even-even nuclei. JOUR PRVCA 80 064308
$^{190}\text{W}$	2009AL30	NUCLEAR REACTIONS $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ , $E=1$ GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

KEYNUMBERS AND KEYWORDS

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A=190 (*continued*)

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| 2009AL30                   | RADIOACTIVITY $^{188,190,192}\text{Ta}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, \text{X})$ , $E=1$ GeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, $\beta\gamma$ correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array. $^{188,190,192}\text{W}$ ; deduced levels, $J$ , $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for $^{190}\text{W}$ . $Z=56-80$ , $N=84-122$ ; discussed systematics of first $2+$ and $4+$ states, $B(E2)$ , and $\gamma$ deformation parameter in even-even nuclei. JOUR PRVCA 80 064308                |
| $^{190}\text{Ir}$ 2008COZX | NUCLEAR REACTIONS $^{191}\text{Ir}(n, \gamma)$ , $E\approx 0-20$ MeV; $^{191}\text{Ir}(n, n')$ , $E\approx 0-20$ MeV; $^{191}\text{Ir}(n, 2n)$ , $E\approx 5-25$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ , $^{190,191}\text{Ir}$ isomeric transition, role of metastable states; calculated $\sigma$ , $\sigma$ (isomeric transition) using FKK-GNASH and exciton model; $^{191}\text{Ir}(n, 2n)$ , $^{191}\text{Ir}(n, 3n)$ , $^{191}\text{Ir}(n, 4n)$ , $E\approx 5-35$ MeV; calculated $\sigma$ . Compared to data and evaluations. GEANIE facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P247 |
| 2008VLZZ                   | NUCLEAR REACTIONS $^{72,74}\text{Ge}(n, \alpha)$ , $E=9.6, 10.6, 11.1, 11.4$ MeV; $^{76}\text{Ge}(n, 2n)$ , $E=9.6, 10.6, 11.1, 11.4$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ isomer, $\sigma$ ground state; calculated $\sigma$ isomer, $\sigma$ ground state using EMPIRE; $^{191}\text{Ir}(n, 2n)$ , $E=10.0, 10.5, 11.0, 11.3$ MeV; measured $E_\gamma$ , $I_\gamma(t)$ ; deduced $\sigma$ isomer, $\sigma$ ground state; calculated $\sigma$ isomer, $\sigma$ ground state using STAPRE-F. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P471  |
| 2009YA25                   | NUCLEAR REACTIONS $^{197}\text{Au}(^{12}\text{C}, \text{X})^{184}\text{Ir} / ^{185}\text{Ir} / ^{186}\text{Ir} / ^{187}\text{Ir} / ^{189}\text{Ir} / ^{190}\text{Ir} / ^{192}\text{Ir} / ^{194}\text{Ir} / ^{195}\text{Ir} / ^{196}\text{Ir}$ , $E=47$ MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196   |
| 2010SZ03                   | NUCLEAR REACTIONS $^{192}\text{Os}(p, n)$ , $(p, 3n)$ , $(p, 4n)$ , $(p, 5n)$ , $(p, 6n)$ , $\text{Cu}(p, n)^{65}\text{Zn}$ , $\text{Al}(p, \text{X})^{24}\text{Na}$ , $\text{Cu}(p, \text{X})^{62}\text{Zn}$ $E < 66$ MeV; measured reaction products, $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306   |
| $^{190}\text{Pt}$ 2008MA58 | NUCLEAR REACTIONS $^{176}\text{Yb}(^{18}\text{O}, 4n)$ , $E=88, 95$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, DCO. $^{190}\text{Pt}$ ; deduced levels, $J$ , $\pi$ , bands, configurations. JOUR CPCHC 32 31  |
| $^{190}\text{Au}$ 2010SI10 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, \text{X})^{186}\text{Ir} / ^{190}\text{Au} / ^{191}\text{Au} / ^{192}\text{Au} / ^{191}\text{Hg} / ^{192}\text{Hg} / ^{193}\text{Hg} / ^{192}\text{Tl} / ^{193}\text{Tl} / ^{194}\text{Tl}$ , $E=81, 90, 96$ MeV; measured $E_\gamma$ , $I_\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607   |
| $^{190}\text{Hg}$ 2008TAZI | NUCLEAR REACTIONS $\text{Pb}(p, x)$ , $E=1, 1.4$ GeV; $\text{Bi}(p, x)$ , $E=1, 1.4$ GeV; measured $E_\gamma$ , $I_\gamma$ , $A$ (particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069                           |
| 2010WI02                   | NUCLEAR REACTIONS $^{160}\text{Gd}(^{34}\text{S}, 4n)$ , $E=156$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin.; $^{190}\text{Hg}$ deduced energy and $J$ of superdeformed and normal states, two-proton separation energies, critical tests of nuclear models. JOUR PRLTA 104 162501  |

KEYNUMBERS AND KEYWORDS

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**A=190 (continued)**

<sup>190</sup>Pb      2008NIZR      NUCLEAR REACTIONS <sup>166</sup>Er(<sup>28</sup>Si, 4n), E=140 MeV; measured E $\gamma$ , I $\gamma$ , E(cc), I(cc); deduced isomer decay, T<sub>1/2</sub>. Results on CD only. CONF E.Lansing (NS2008),P153,Nieminen

**A=191**

<sup>191</sup>Ta      2009AL30      NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

<sup>191</sup>W      2009AL30      NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308

<sup>191</sup>Ir      2008COZX      NUCLEAR REACTIONS <sup>191</sup>Ir(n,  $\gamma$ ), E $\approx$ 0-20 MeV; <sup>191</sup>Ir(n, n'), E $\approx$ 0-20 MeV; <sup>191</sup>Ir(n, 2n), E $\approx$ 5-25 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ , <sup>190,191</sup>Ir isomeric transition, role of metastable states; calculated  $\sigma$ ,  $\sigma$ (isomeric transition) using FKK-GNASH and exciton model; <sup>191</sup>Ir(n, 2n), <sup>191</sup>Ir(n, 3n), <sup>191</sup>Ir(n, 4n), E $\approx$ 5-35 MeV; calculated  $\sigma$ . Compared to data and evaluations. GEANIE facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P247

<sup>191</sup>Pt      2010MA50      NUCLEAR REACTIONS <sup>168</sup>Yb, <sup>180</sup>W, <sup>184</sup>Os, <sup>190</sup>Pt, <sup>196</sup>Hg(n,  $\gamma$ ), E=spectrum[neutrons from <sup>7</sup>Li(p, n), E=1912 keV]; measured E $\gamma$ , I $\gamma$ ,  $\sigma$  using activation method; deduced capture cross sections for an average neutron energy of kT=25 keV. Comparison with previous measurements. Discussed impact on p-process network. JOUR PRVCA 82 035806

<sup>191</sup>Au      2010KR02      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>197</sup>Au, <sup>59</sup>Co, In, <sup>181</sup>Ta(n,  $\gamma$ ), (n,  $\alpha$ ), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup>Au, <sup>24</sup>Na; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70

            2010SI10      NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>16</sup>O, X)<sup>186</sup>Ir / <sup>190</sup>Au / <sup>191</sup>Au / <sup>192</sup>Au / <sup>191</sup>Hg / <sup>192</sup>Hg / <sup>193</sup>Hg / <sup>192</sup>Tl / <sup>193</sup>Tl / <sup>194</sup>Tl, E=81, 90, 96 MeV; measured E $\gamma$ , I $\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607

<sup>191</sup>Hg      2010SI10      NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>16</sup>O, X)<sup>186</sup>Ir / <sup>190</sup>Au / <sup>191</sup>Au / <sup>192</sup>Au / <sup>191</sup>Hg / <sup>192</sup>Hg / <sup>193</sup>Hg / <sup>192</sup>Tl / <sup>193</sup>Tl / <sup>194</sup>Tl, E=81, 90, 96 MeV; measured E $\gamma$ , I $\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607

<sup>191</sup>Pb      2010C013      RADIOACTIVITY <sup>191,193</sup>Bi(EC), <sup>195</sup>Po( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced branching ratios,  $\alpha$ -decay fine structures,  $\gamma$ -ray energies and intensities, J,  $\pi$ , ICC. JOUR JPGPE 37 125103

<sup>191</sup>Bi      2010C013      RADIOACTIVITY <sup>191,193</sup>Bi(EC), <sup>195</sup>Po( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced branching ratios,  $\alpha$ -decay fine structures,  $\gamma$ -ray energies and intensities, J,  $\pi$ , ICC. JOUR JPGPE 37 125103

## A=192

- <sup>192</sup>Ta      2009AL30      NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- 2009AL30      RADIOACTIVITY <sup>188,190,192</sup>Ta( $\beta^-$ )[from Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$  correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array. <sup>188,190,192</sup>W; deduced levels, J,  $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for <sup>190</sup>W. Z=56-80, N=84-122; discussed systematics of first 2+ and 4+ states, B(E2), and  $\gamma$  deformation parameter in even-even nuclei. JOUR PRVCA 80 064308
- <sup>192</sup>W      2009AL30      NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- 2009AL30      RADIOACTIVITY <sup>188,190,192</sup>Ta( $\beta^-$ )[from Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\beta\gamma$  correlations, and half-lives using GSI Fragment separator, MUSIC ionization chamber; and RISING array. <sup>188,190,192</sup>W; deduced levels, J,  $\pi$ , logft. Comparison with interacting boson approximation (IBA-1) calculations for <sup>190</sup>W. Z=56-80, N=84-122; discussed systematics of first 2+ and 4+ states, B(E2), and  $\gamma$  deformation parameter in even-even nuclei. JOUR PRVCA 80 064308
- <sup>192</sup>Re      2009AL30      NUCLEAR REACTIONS Be(<sup>208</sup>Pb, X)<sup>186</sup>Hf / <sup>187</sup>Hf / <sup>188</sup>Hf / <sup>189</sup>Hf / <sup>188</sup>Ta / <sup>189</sup>Ta / <sup>190</sup>Ta / <sup>191</sup>Ta / <sup>192</sup>Ta / <sup>190</sup>W / <sup>191</sup>W / <sup>192</sup>W / <sup>193</sup>W / <sup>194</sup>W / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re, E=1 GeV / nucleon; measured yields. <sup>187</sup>Hf, <sup>188,189,190</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- <sup>192</sup>Ir      2008COZX      NUCLEAR REACTIONS <sup>191</sup>Ir(n,  $\gamma$ ), E $\approx$ 0-20 MeV; <sup>191</sup>Ir(n, n'), E $\approx$ 0-20 MeV; <sup>191</sup>Ir(n, 2n), E $\approx$ 5-25 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ , <sup>190,191</sup>Ir isomeric transition, role of metastable states; calculated  $\sigma$ ,  $\sigma$ (isomeric transition) using FKK-GNASH and exciton model; <sup>191</sup>Ir(n, 2n), <sup>191</sup>Ir(n, 3n), <sup>191</sup>Ir(n, 4n), E $\approx$ 5-35 MeV; calculated  $\sigma$ . Compared to data and evaluations. GEANIE facility. CONF Nice (Nucl Data for Sci and Technol) Proc,P247
- 2009YA25      NUCLEAR REACTIONS <sup>197</sup>Au(<sup>12</sup>C, X)<sup>184</sup>Ir / <sup>185</sup>Ir / <sup>186</sup>Ir / <sup>187</sup>Ir / <sup>189</sup>Ir / <sup>190</sup>Ir / <sup>192</sup>Ir / <sup>194</sup>Ir / <sup>195</sup>Ir / <sup>196</sup>Ir, E=47 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . JOUR CPCHC 33 s01 196
- 2010SZ03      NUCLEAR REACTIONS <sup>192</sup>Os(p, n), (p, 3n), (p, 4n), (p, 5n), (p, 6n), Cu(p, n)<sup>65</sup>Zn, Al(p, X)<sup>24</sup>Na, Cu(p, X)<sup>62</sup>Zn E < 66 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , integral yields. Comparison with model code ALICE / ASH. JOUR NIMBE 268 3306
- <sup>192</sup>Au      2010KR02      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>197</sup>Au, <sup>59</sup>Co, In, <sup>181</sup>Ta(n,  $\gamma$ ), (n,  $\alpha$ ), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup>Au, <sup>24</sup>Na; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70

KEYNUMBERS AND KEYWORDS

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**A=192 (continued)**

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| 2010SI10          |          | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, \text{X})^{186}\text{Ir} / ^{190}\text{Au} / ^{191}\text{Au} / ^{192}\text{Au} / ^{191}\text{Hg} / ^{192}\text{Hg} / ^{193}\text{Hg} / ^{192}\text{Tl} / ^{193}\text{Tl} / ^{194}\text{Tl}$ , E=81, 90, 96 MeV; measured $E\gamma$ , $I\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607  |
| $^{192}\text{Hg}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069 |
| 2010SI10          |          | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, \text{X})^{186}\text{Ir} / ^{190}\text{Au} / ^{191}\text{Au} / ^{192}\text{Au} / ^{191}\text{Hg} / ^{192}\text{Hg} / ^{193}\text{Hg} / ^{192}\text{Tl} / ^{193}\text{Tl} / ^{194}\text{Tl}$ , E=81, 90, 96 MeV; measured $E\gamma$ , $I\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607  |
| $^{192}\text{Tl}$ | 2010SI10 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, \text{X})^{186}\text{Ir} / ^{190}\text{Au} / ^{191}\text{Au} / ^{192}\text{Au} / ^{191}\text{Hg} / ^{192}\text{Hg} / ^{193}\text{Hg} / ^{192}\text{Tl} / ^{193}\text{Tl} / ^{194}\text{Tl}$ , E=81, 90, 96 MeV; measured $E\gamma$ , $I\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607  |
| $^{192}\text{Pb}$ | 2010JA05 | RADIOACTIVITY $^{196}\text{Po}$ , $^{198,199}\text{At}$ , $^{199,200}\text{Rn}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 044302  |
|                   | 2010WI08 | NUCLEAR REACTIONS $^{168}\text{Er}(^{29}\text{Si}, 5n)$ , E=154 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere HPGe detector array. $^{192}\text{Pb}$ ; deduced levels, J, $\pi$ , multipolarities, deformation, configurations. Time-correlated spectroscopy, DCO analysis. Comparison with systematics. JOUR ZAANE 43 145  |

**A=193**

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| $^{193}\text{W}$  | 2009AL30 | NUCLEAR REACTIONS Be( $^{208}\text{Pb}$ , X) $^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ , E=1 GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308 |
| $^{193}\text{Re}$ | 2009AL30 | NUCLEAR REACTIONS Be( $^{208}\text{Pb}$ , X) $^{186}\text{Hf} / ^{187}\text{Hf} / ^{188}\text{Hf} / ^{189}\text{Hf} / ^{188}\text{Ta} / ^{189}\text{Ta} / ^{190}\text{Ta} / ^{191}\text{Ta} / ^{192}\text{Ta} / ^{190}\text{W} / ^{191}\text{W} / ^{192}\text{W} / ^{193}\text{W} / ^{194}\text{W} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re}$ , E=1 GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308 |
| $^{193}\text{Os}$ | 2008ZAZY | RADIOACTIVITY $^{60}\text{Co}(\beta^-)$ , $^{152}\text{Eu}(\beta^-)$ , $^{193}\text{Os}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ , $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455  |

KEYNUMBERS AND KEYWORDS

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**A=193 (continued)**

<sup>193</sup> Ir	2008ZAZY	RADIOACTIVITY <sup>60</sup> Co( $\beta^-$ ), <sup>152</sup> Eu( $\beta^-$ ), <sup>193</sup> Os( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\theta(\gamma)$ , $\gamma\gamma$ -coin.; deduced mixing ratio, angular correlations. CONF Nice (Nucl Data for Sci and Technol) Proc,P455
<sup>193</sup> Au	2010KR02	NUCLEAR REACTIONS <sup>27</sup> Al, <sup>197</sup> Au, <sup>59</sup> Co, In, <sup>181</sup> Ta(n, $\gamma$ ), (n, $\alpha$ ), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup> Au, <sup>24</sup> Na; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced yields, $\sigma$ . JOUR NIMAE 615 70
<sup>193</sup> Hg	2008SZZZ	NUCLEAR REACTIONS <sup>197</sup> Au(p, n), E $\approx$ 5-65 MeV; <sup>197</sup> Au(p, pn), E $\approx$ 15-65 MeV; <sup>197</sup> Au(p, 3n), E $\approx$ 20-65 MeV; <sup>197</sup> Au(p, p3n), E $\approx$ 25-65 MeV; <sup>197</sup> Au(p, 5n), E $\approx$ 35-65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1259
	2008TAZI	NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup> Kr, <sup>111</sup> Cd, <sup>121,124,126</sup> I, <sup>120,121,122,123,125,127,129,131,133</sup> Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup> Hg, <sup>204,205,206,207,208,209,210</sup> At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
	2010SI10	NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>16</sup> O, X) <sup>186</sup> Ir / <sup>190</sup> Au / <sup>191</sup> Au / <sup>192</sup> Au / <sup>191</sup> Hg / <sup>192</sup> Hg / <sup>193</sup> Hg / <sup>192</sup> Tl / <sup>193</sup> Tl / <sup>194</sup> Tl, E=81, 90, 96 MeV; measured E $\gamma$ , I $\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607
<sup>193</sup> Tl	2010SI10	NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>16</sup> O, X) <sup>186</sup> Ir / <sup>190</sup> Au / <sup>191</sup> Au / <sup>192</sup> Au / <sup>191</sup> Hg / <sup>192</sup> Hg / <sup>193</sup> Hg / <sup>192</sup> Tl / <sup>193</sup> Tl / <sup>194</sup> Tl, E=81, 90, 96 MeV; measured E $\gamma$ , I $\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607
<sup>193</sup> Pb	2008MUZT	NUCLEAR REACTIONS <sup>170</sup> Er( <sup>13</sup> C, X), E=70, 80 MeV; measured E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin; deduced levels, J. <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>182</sup> Os, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>186</sup> Pt, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>193</sup> Pb, <sup>180</sup> W( <sup>20</sup> Ne, X) <sup>196</sup> Po, E not given; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin. Results on CD only. CONF E.Lansing (NS2008),P147,Mullins
	2010C013	RADIOACTIVITY <sup>191,193</sup> Bi(EC), <sup>195</sup> Po( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced branching ratios, $\alpha$ -decay fine structures, $\gamma$ -ray energies and intensities, J, $\pi$ , ICC. JOUR JPGPE 37 125103
<sup>193</sup> Bi	2010C013	RADIOACTIVITY <sup>191,193</sup> Bi(EC), <sup>195</sup> Po( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced branching ratios, $\alpha$ -decay fine structures, $\gamma$ -ray energies and intensities, J, $\pi$ , ICC. JOUR JPGPE 37 125103

**A=194**

<sup>194</sup> W	2009AL30	NUCLEAR REACTIONS Be( <sup>208</sup> Pb, X) <sup>186</sup> Hf / <sup>187</sup> Hf / <sup>188</sup> Hf / <sup>189</sup> Hf / <sup>188</sup> Ta / <sup>189</sup> Ta / <sup>190</sup> Ta / <sup>191</sup> Ta / <sup>192</sup> Ta / <sup>190</sup> W / <sup>191</sup> W / <sup>192</sup> W / <sup>193</sup> W / <sup>194</sup> W / <sup>192</sup> Re / <sup>193</sup> Re / <sup>194</sup> Re / <sup>195</sup> Re / <sup>196</sup> Re, E=1 GeV / nucleon; measured yields. <sup>187</sup> Hf, <sup>188,189,190</sup> Ta, <sup>190,191</sup> W, <sup>192,193</sup> Re; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
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KEYNUMBERS AND KEYWORDS

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A=194 (*continued*)

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| <sup>194</sup> Re | 2008KUZU | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,202</sup> Ir( $\beta^-$ ); measured Ie(t); deduced T <sub>1/2</sub> . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47  |
|                   | 2009AL30 | NUCLEAR REACTIONS Be( <sup>208</sup> Pb, X) <sup>186</sup> Hf / <sup>187</sup> Hf / <sup>188</sup> Hf / <sup>189</sup> Hf / <sup>188</sup> Ta / <sup>189</sup> Ta / <sup>190</sup> Ta / <sup>191</sup> Ta / <sup>192</sup> Ta / <sup>190</sup> W / <sup>191</sup> W / <sup>192</sup> W / <sup>193</sup> W / <sup>194</sup> W / <sup>192</sup> Re / <sup>193</sup> Re / <sup>194</sup> Re / <sup>195</sup> Re / <sup>196</sup> Re, E=1 GeV / nucleon; measured yields. <sup>187</sup> Hf, <sup>188,189,190</sup> Ta, <sup>190,191</sup> W, <sup>192,193</sup> Re; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308  |
|                   | 2009KU28 | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c   |
| <sup>194</sup> Os | 2008KUZU | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,202</sup> Ir( $\beta^-$ ); measured Ie(t); deduced T <sub>1/2</sub> . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47  |
|                   | 2009KU28 | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c   |
|                   | 2009REZW | RADIOACTIVITY <sup>194</sup> Os( $\beta^-$ ) [from <sup>194</sup> Re]; measured $\beta$ -delayed E $\gamma$ , I $\gamma$ (t); deduced half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P122,Regan   |
| <sup>194</sup> Ir | 2009REZW | RADIOACTIVITY <sup>194</sup> Os( $\beta^-$ ) [from <sup>194</sup> Re]; measured $\beta$ -delayed E $\gamma$ , I $\gamma$ (t); deduced half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P122,Regan   |
|                   | 2009YA25 | NUCLEAR REACTIONS <sup>197</sup> Au( <sup>12</sup> C, X) <sup>184</sup> Ir / <sup>185</sup> Ir / <sup>186</sup> Ir / <sup>187</sup> Ir / <sup>189</sup> Ir / <sup>190</sup> Ir / <sup>192</sup> Ir / <sup>194</sup> Ir / <sup>195</sup> Ir / <sup>196</sup> Ir, E=47 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196  |
|                   | 2010KR02 | NUCLEAR REACTIONS <sup>27</sup> Al, <sup>197</sup> Au, <sup>59</sup> Co, In, <sup>181</sup> Ta(n, $\gamma$ ), (n, $\alpha$ ), (n, xn), E=1 GeV; <sup>191,192,193,194,196,198</sup> Au, <sup>24</sup> Na; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced yields, $\sigma$ . JOUR NIMAE 615 70   |
| <sup>194</sup> Au | 2008OCZZ | NUCLEAR REACTIONS <sup>27</sup> Al(d, x) <sup>24</sup> Na, <sup>51</sup> V(d, 4n), Fe(d, x) <sup>54</sup> Mn, Fe(d, x) <sup>56</sup> Co, Ni(d, x) <sup>57</sup> Co, Cu(d, x) <sup>63</sup> Zn, Ta(d, x) <sup>180</sup> Ta, W(d, x) <sup>182</sup> Re, <sup>197</sup> Au(d, x) <sup>194</sup> Au, E=25, 35, 41, 50 MeV; Cr(d, x) <sup>48</sup> V, Cr(d, x) <sup>52</sup> Mn, <sup>55</sup> Mn(d, x) <sup>54</sup> Mn, Ni(d, x) <sup>56</sup> Co, E=39.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ ; calculated $\sigma$ using TALYS code. Compared to data, ACSELAM data library; also SS316, F82H alloys activities deduced. CONF Nice (Nucl Data for Sci and Technol) Proc,P1011 |
|                   | 2008SZZZ | NUCLEAR REACTIONS <sup>197</sup> Au(p, n), E $\approx$ 5-65 MeV; <sup>197</sup> Au(p, pn), E $\approx$ 15-65 MeV; <sup>197</sup> Au(p, 3n), E $\approx$ 20-65 MeV; <sup>197</sup> Au(p, p3n), E $\approx$ 25-65 MeV; <sup>197</sup> Au(p, 5n), E $\approx$ 35-65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1259   |
|                   | 2010BeZT | NUCLEAR REACTIONS <sup>197</sup> Au( $\gamma$ , n), ( $\gamma$ , 2n), ( $\gamma$ , 3n), E $\gamma$ =30 MeV bremsstrahlung; measured isomeric yield ratios with activation method. <sup>196m2,g,195,194</sup> Au; deduced Y <sub>m</sub> / Y <sub>g</sub> . CONF St.-Petersburg,P188,Belyshev   |
|                   | 2010DE19 | NUCLEAR REACTIONS Pt( <sup>6</sup> Li, X) <sup>194</sup> Au / <sup>196</sup> Au / <sup>198</sup> Au / <sup>199</sup> Au / <sup>197</sup> Hg, E=42.5 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , dominant cluster contribution. Comparison with EMPIRE-2.18. JOUR BRSPE 74 777  |

KEYNUMBERS AND KEYWORDS

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**A=194 (continued)**

	2010KR02	NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{197}\text{Au}$ , $^{59}\text{Co}$ , In, $^{181}\text{Ta}(n, \gamma)$ , $(n, \alpha)$ , $(n, xn)$ , $E=1$ GeV; $^{191,192,193,194,196,198}\text{Au}$ , $^{24}\text{Na}$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced yields, $\sigma$ . JOUR NIMAE 615 70
$^{194}\text{Tl}$	2010MAZW	NUCLEAR REACTIONS $^{181}\text{Ta}(^{18}\text{O}, 5n\gamma)$ , $E=91$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $T_{1/2}$ by DSAM. $^{194}\text{Tl}$ ; deduced levels, J, $\pi$ , $\tau$ band levels, B(M1) / B(E2), configuration. CONF St.-Petersburg,P65,Masiteng
	2010SI10	NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, X)^{186}\text{Ir}$ / $^{190}\text{Au}$ / $^{191}\text{Au}$ / $^{192}\text{Au}$ / $^{191}\text{Hg}$ / $^{192}\text{Hg}$ / $^{193}\text{Hg}$ / $^{192}\text{Tl}$ / $^{193}\text{Tl}$ / $^{194}\text{Tl}$ , $E=81, 90, 96$ MeV; measured $E\gamma$ , $I\gamma$ , forward recoil range distributions (RRD); deduced incomplete fusion fractions. Comparison with break-up fusion (BUF) model. JOUR PRVCA 81 054607
$^{194}\text{Bi}$	2010JA05	RADIOACTIVITY $^{196}\text{Po}$ , $^{198,199}\text{At}$ , $^{199,200}\text{Rn}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 82 044302

**A=195**

$^{195}\text{Re}$	2008KUZU	RADIOACTIVITY $^{194,195,196}\text{Re}$ , $^{199,200}\text{Os}$ , $^{198,199,202}\text{Ir}(\beta^-)$ ; measured $I_e(t)$ ; deduced $T_{1/2}$ . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
	2009AL30	NUCLEAR REACTIONS $\text{Be}(^{208}\text{Pb}, X)^{186}\text{Hf}$ / $^{187}\text{Hf}$ / $^{188}\text{Hf}$ / $^{189}\text{Hf}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ / $^{190}\text{Ta}$ / $^{191}\text{Ta}$ / $^{192}\text{Ta}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{192}\text{W}$ / $^{193}\text{W}$ / $^{194}\text{W}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{195}\text{Re}$ / $^{196}\text{Re}$ , $E=1$ GeV / nucleon; measured yields. $^{187}\text{Hf}$ , $^{188,189,190}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ ; measured delayed $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
	2009KU28	RADIOACTIVITY $^{194,195,196}\text{Re}$ , $^{199,200}\text{Os}$ , $^{198,199,200}\text{Ir}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon]; measured $T_{1/2}$ . Comparison with two QRPA models. JOUR NUPAB 827 587c
$^{195}\text{Os}$	2008KUZU	RADIOACTIVITY $^{194,195,196}\text{Re}$ , $^{199,200}\text{Os}$ , $^{198,199,202}\text{Ir}(\beta^-)$ ; measured $I_e(t)$ ; deduced $T_{1/2}$ . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
	2009KU28	RADIOACTIVITY $^{194,195,196}\text{Re}$ , $^{199,200}\text{Os}$ , $^{198,199,200}\text{Ir}(\beta^-)$ [from $\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon]; measured $T_{1/2}$ . Comparison with two QRPA models. JOUR NUPAB 827 587c
$^{195}\text{Ir}$	2009YA25	NUCLEAR REACTIONS $^{197}\text{Au}(^{12}\text{C}, X)^{184}\text{Ir}$ / $^{185}\text{Ir}$ / $^{186}\text{Ir}$ / $^{187}\text{Ir}$ / $^{189}\text{Ir}$ / $^{190}\text{Ir}$ / $^{192}\text{Ir}$ / $^{194}\text{Ir}$ / $^{195}\text{Ir}$ / $^{196}\text{Ir}$ , $E=47$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR CPCHC 33 s01 196
$^{195}\text{Au}$	2010BeZT	NUCLEAR REACTIONS $^{197}\text{Au}(\gamma, n)$ , $(\gamma, 2n)$ , $(\gamma, 3n)$ , $E\gamma=30$ MeV bremsstrahlung; measured isomeric yield ratios with activation method. $^{196m2,g,195,194}\text{Au}$ ; deduced $Y_m / Y_g$ . CONF St.-Petersburg,P188,Belyshev
$^{195}\text{Hg}$	2008SZZZ	NUCLEAR REACTIONS $^{197}\text{Au}(p, n)$ , $E\approx 5-65$ MeV; $^{197}\text{Au}(p, pn)$ , $E\approx 15-65$ MeV; $^{197}\text{Au}(p, 3n)$ , $E\approx 20-65$ MeV; $^{197}\text{Au}(p, p3n)$ , $E\approx 25-65$ MeV; $^{197}\text{Au}(p, 5n)$ , $E\approx 35-65$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1259

KEYNUMBERS AND KEYWORDS

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**A=195 (continued)**

- 2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured  $E\gamma$ ,  $I\gamma$ , A(particle) using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- $^{195}\text{Bi}$  2010JA05 RADIOACTIVITY  $^{196}\text{Po}$ ,  $^{198,199}\text{At}$ ,  $^{199,200}\text{Rn}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 82 044302
- $^{195}\text{Po}$  2010C013 RADIOACTIVITY  $^{191,193}\text{Bi}(\text{EC})$ ,  $^{195}\text{Po}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced branching ratios,  $\alpha$ -decay fine structures,  $\gamma$ -ray energies and intensities, J,  $\pi$ , ICC. JOUR JPGPE 37 125103
- 2010JA05 RADIOACTIVITY  $^{196}\text{Po}$ ,  $^{198,199}\text{At}$ ,  $^{199,200}\text{Rn}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 82 044302

**A=196**

- $^{196}\text{Re}$  2008KUZU RADIOACTIVITY  $^{194,195,196}\text{Re}$ ,  $^{199,200}\text{Os}$ ,  $^{198,199,202}\text{Ir}(\beta^-)$ ; measured  $Ie(t)$ ; deduced  $T_{1/2}$ . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
- 2009AL30 NUCLEAR REACTIONS Be( $^{208}\text{Pb}$ , X) $^{186}\text{Hf}$  /  $^{187}\text{Hf}$  /  $^{188}\text{Hf}$  /  $^{189}\text{Hf}$  /  $^{188}\text{Ta}$  /  $^{189}\text{Ta}$  /  $^{190}\text{Ta}$  /  $^{191}\text{Ta}$  /  $^{192}\text{Ta}$  /  $^{190}\text{W}$  /  $^{191}\text{W}$  /  $^{192}\text{W}$  /  $^{193}\text{W}$  /  $^{194}\text{W}$  /  $^{192}\text{Re}$  /  $^{193}\text{Re}$  /  $^{194}\text{Re}$  /  $^{195}\text{Re}$  /  $^{196}\text{Re}$ , E=1 GeV / nucleon; measured yields.  $^{187}\text{Hf}$ ,  $^{188,189,190}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ; measured delayed  $\gamma$ ; deduced isomers and half-lives. JOUR PRVCA 80 064308
- 2009KU28 RADIOACTIVITY  $^{194,195,196}\text{Re}$ ,  $^{199,200}\text{Os}$ ,  $^{198,199,200}\text{Ir}(\beta^-)$  [from Be( $^{208}\text{Pb}$ , X), E=1 GeV / nucleon]; measured  $T_{1/2}$ . Comparison with two QRPA models. JOUR NUPAB 827 587c
- $^{196}\text{Os}$  2008KUZU RADIOACTIVITY  $^{194,195,196}\text{Re}$ ,  $^{199,200}\text{Os}$ ,  $^{198,199,202}\text{Ir}(\beta^-)$ ; measured  $Ie(t)$ ; deduced  $T_{1/2}$ . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
- 2009KU28 RADIOACTIVITY  $^{194,195,196}\text{Re}$ ,  $^{199,200}\text{Os}$ ,  $^{198,199,200}\text{Ir}(\beta^-)$  [from Be( $^{208}\text{Pb}$ , X), E=1 GeV / nucleon]; measured  $T_{1/2}$ . Comparison with two QRPA models. JOUR NUPAB 827 587c
- $^{196}\text{Ir}$  2009YA25 NUCLEAR REACTIONS  $^{197}\text{Au}(^{12}\text{C}, \text{X})^{184}\text{Ir}$  /  $^{185}\text{Ir}$  /  $^{186}\text{Ir}$  /  $^{187}\text{Ir}$  /  $^{189}\text{Ir}$  /  $^{190}\text{Ir}$  /  $^{192}\text{Ir}$  /  $^{194}\text{Ir}$  /  $^{195}\text{Ir}$  /  $^{196}\text{Ir}$ , E=47 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR CPCHC 33 s01 196
- $^{196}\text{Pt}$  2010JI07 NUCLEAR REACTIONS  $^{152,154}\text{Sm}$ ,  $^{184}\text{W}$ ,  $^{196}\text{Pt}$ ,  $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O}')$ , E(cm)=35-70 MeV; measured  $\sigma(\theta=175^\circ)$ ; calculated  $\sigma$  using CC and single-channel formalisms; deduced nuclear potential diffuseness parameters. JOUR NUPAB 834 189c
- $^{196}\text{Au}$  2008SZZZ NUCLEAR REACTIONS  $^{197}\text{Au}(\text{p}, \text{n})$ , E $\approx$ 5-65 MeV;  $^{197}\text{Au}(\text{p}, \text{pn})$ , E $\approx$ 15-65 MeV;  $^{197}\text{Au}(\text{p}, 3\text{n})$ , E $\approx$ 20-65 MeV;  $^{197}\text{Au}(\text{p}, \text{p}3\text{n})$ , E $\approx$ 25-65 MeV;  $^{197}\text{Au}(\text{p}, 5\text{n})$ , E $\approx$ 35-65 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1259

A=196 (*continued*)

- 2010BeZT NUCLEAR REACTIONS  $^{197}\text{Au}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $E_\gamma=30$  MeV bremsstrahlung; measured isomeric yield ratios with activation method.  $^{196m2.g,195,194}\text{Au}$ ; deduced  $Y_m / Y_g$ . CONF St.-Petersburg,P188,Belyshev
- 2010DE19 NUCLEAR REACTIONS  $\text{Pt}(^6\text{Li}, X)^{194}\text{Au} / ^{196}\text{Au} / ^{198}\text{Au} / ^{199}\text{Au} / ^{197}\text{Hg}$ ,  $E=42.5$  MeV; measured reaction products,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ , dominant cluster contribution. Comparison with EMPIRE-2.18. JOUR BRSPE 74 777
- 2010KR02 NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{197}\text{Au}$ ,  $^{59}\text{Co}$ ,  $\text{In}$ ,  $^{181}\text{Ta}(n, \gamma)$ ,  $(n, \alpha)$ ,  $(n, xn)$ ,  $E=1$  GeV;  $^{191,192,193,194,196,198}\text{Au}$ ,  $^{24}\text{Na}$ ; measured  $E_\alpha$ ,  $I_\alpha$ ,  $E_\gamma$ ,  $I_\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70
- 2010RA02 NUCLEAR REACTIONS  $^{197}\text{Au}(\gamma, n)$ ,  $E=0.05\text{-}2.5$  GeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced isomeric yield ratios. JOUR JRNC D 283 519
- 2010RA09 NUCLEAR REACTIONS  $^{89}\text{Y}$ ,  $^{90}\text{Zr}$ ,  $^{93}\text{Nb}$ ,  $^{133}\text{Cs}$ ,  $^{197}\text{Au}(\gamma, n)$ ,  $^{99}\text{Tc}(\gamma, 3n)$ ,  $E<32$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$  and uncertainties. Bremsstrahlung photons. JOUR JNSTA 47 618
- $^{196}\text{Hg}$  2010BE05 NUCLEAR REACTIONS  $^{194}\text{Pt}(\alpha, 2n)$ ,  $E=9.3$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$ .  $^{196}\text{Hg}$ ; deduced levels,  $J$ ,  $\pi$ , multipolarity, mixing ratio, and  $B(E2)$ . Comparison with previous experimental data and with calculations using interacting boson approximation (IBA) with extended  $U_\nu(6 / 12)$  (X)  $U_\pi(6 / 4)$  supersymmetry.  $^{196}\text{Hg}$  interpreted as the fifth member of a magical quartet of  $^{194,195}\text{Pt}$ ,  $^{195,196}\text{Au}$  in the context of extended supersymmetric IBA model. JOUR PRVCA 81 024312
- $^{196}\text{Pb}$  2008LEZG NUCLEAR REACTIONS  $^{170}\text{Er}(^{30}\text{Si}, 4n)$ ,  $E=148$  MeV;  $^{130}\text{Te}(^{27}\text{Al}, 6n)$ ,  $E=155$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin; deduced  $E$ ,  $J$ ,  $\pi$ , superdeformation, yrast, superdeformed band; calculated  $E1$  transition strength, simulated superdeformed bands population, yrast. Results on CD only. CONF E.Lansing (NS2008),P38,Leoni
- 2008LEZL NUCLEAR REACTIONS  $^{130}\text{Te}(^{27}\text{Al}, X)^{151}\text{Tb}$ ,  $E=155$  MeV;  $^{170}\text{Er}(^{30}\text{Si}, 4n)^{196}\text{Pb}$ ,  $E=150$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced number of discrete excited bands. Comparison with cranked shell model calculations. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P403,Leoni
- 2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, X)^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ ,  $E=1$  GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- $^{196}\text{Po}$  2008MUZT NUCLEAR REACTIONS  $^{170}\text{Er}(^{13}\text{C}, X)$ ,  $E=70, 80$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\alpha\gamma$ -coin; deduced levels,  $J$ .  $^{180}\text{W}(^{20}\text{Ne}, X)^{182}\text{Os}$ ,  $^{180}\text{W}(^{20}\text{Ne}, X)^{186}\text{Pt}$ ,  $^{180}\text{W}(^{20}\text{Ne}, X)^{193}\text{Pb}$ ,  $^{180}\text{W}(^{20}\text{Ne}, X)^{196}\text{Po}$ ,  $E$  not given; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, (particle) $\gamma$ -coin. Results on CD only. CONF E.Lansing (NS2008),P147,Mullins
- 2010JA05 RADIOACTIVITY  $^{196}\text{Po}$ ,  $^{198,199}\text{At}$ ,  $^{199,200}\text{Rn}(\alpha)$ ; measured  $E_\alpha$ . JOUR PRVCA 82 044302

## A=197

- <sup>197</sup>Pt 2009NI13 RADIOACTIVITY <sup>197m</sup>Pt(IT); measured E $\gamma$ , I $\gamma$ , x rays; deduced K-shell internal conversion coefficient of 346.5-keV M4 isomeric transition. Comparison with theoretical conversion coefficient from Dirac-Fock calculation. JOUR PRVCA 80 064314
- 2010QI02 NUCLEAR REACTIONS <sup>1,2</sup>H, <sup>12</sup>C, <sup>27</sup>Al, <sup>63</sup>Cu, <sup>197</sup>Au(e, e' $\pi^+$ ), E<5.8 GeV; measured yields, differential cross sections as a function of azimuthal angle, and nuclear transparencies versus Q<sup>2</sup>. JOUR PRVCA 81 055209
- <sup>197</sup>Au 2010BE01 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>68</sup>Ni, <sup>68</sup>Ni'), E=600 MeV / nucleon; <sup>197</sup>Au(<sup>54</sup>Cr, <sup>54</sup>Cr'), E=100 MeV / nucleon; <sup>197</sup>Au(<sup>132</sup>Xe, <sup>132</sup>Xe'), E=100 MeV / nucleon; <sup>27</sup>Al(p, 2p), E> 100 MeV; Ge, <sup>27</sup>Al(n, n'), E not given; Be(<sup>37</sup>Ca, X)<sup>36</sup>K, E=200 MeV / nucleon; measured reaction fragments, E $\gamma$ , I $\gamma$ ; deduced energy levels, B(E2) values, lifetimes,  $\sigma(\theta)$ . JOUR APOBB 41 505
- 2010GA14 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>82</sup>Ge, <sup>82</sup>Ge'), E=89.4 MeV / nucleon; <sup>197</sup>Au(<sup>84</sup>Se, <sup>84</sup>Se'), E=95.4 MeV / nucleon; <sup>9</sup>Be(<sup>82</sup>Ge, <sup>82</sup>Ge'), E=87.6 MeV / nucleon; <sup>9</sup>Be(<sup>84</sup>Se, <sup>84</sup>Se'), E=92 MeV / nucleon, [<sup>82</sup>Ge and <sup>84</sup>Se secondary beams from <sup>9</sup>Be(<sup>86</sup>Kr, X), E=140 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , (particle) $\gamma$ -coin; <sup>82</sup>Ge, <sup>84</sup>Se; deduced levels, J, B(E2), T<sub>1/2</sub>. Intermediate energy Coulomb excitation and inelastic scattering. Comparison with systematics of B(E2) values for first 2+ state in N=50 isotones for Z(even)=30-42 and even-even Ge (A=64-82) and Se (A=68-84) isotopes, and with shell-model calculations. Systematics of first 3- states in even-even Se (A=74-82) and N=50 isotones. JOUR PRVCA 81 064326
- 2010KE09 ATOMIC MASSES <sup>197</sup>Au; measured cyclotron frequency ratios using various sizes of carbon clusters; deduced mass. JOUR ZDDNE 58 47
- 2010LI33 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>17</sup>Ne, <sup>17</sup>Ne'), (<sup>18</sup>Ne, <sup>18</sup>Ne'), (<sup>28</sup>S, <sup>28</sup>S'), (<sup>29</sup>S, <sup>29</sup>S'), E not given; measured Coulomb excitation Ep, Ip( $\theta$ ), pp-coin, E(particle), I(particle), relative energy spectra, angular distributions; deduced 2p halo states. Kinematically complete experiment, secondary radioactive beams. JOUR NUPAB 834 450c
- 2010TA22 NUCLEAR REACTIONS <sup>248</sup>Cm(<sup>209</sup>Bi, <sup>210</sup>Bi)<sup>247</sup>Cm, E=1450 MeV; <sup>250</sup>Cm(<sup>209</sup>Bi, <sup>208</sup>Bi)<sup>249</sup>Cm, E=1450 MeV; <sup>249</sup>Cf(<sup>207</sup>Pb, <sup>207</sup>Pb'), E=1430 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>247,249</sup>Cm, <sup>249</sup>Cf; deduced levels, J,  $\pi$ , (g<sub>K</sub>-g<sub>R</sub>) / Q<sub>0</sub>, alignments, Nilsson configurations, and rotational bands. <sup>197</sup>Au, <sup>207</sup>Pb, <sup>208</sup>Bi, <sup>210</sup>Bi; measured E $\gamma$ . Systematics of alignments for <sup>244</sup>Pu, <sup>246</sup>Cm, <sup>248</sup>Cf, <sup>250</sup>Fm and <sup>252</sup>No, Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301
- 2010XU03 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>28</sup>P, <sup>28</sup>P'), E=46.5 MeV / nucleon [<sup>28</sup>P secondary beam from <sup>9</sup>Be(<sup>32</sup>S, X), E=80.4 MeV / nucleon primary reaction]; measured Ep, Ip, time of flight, (<sup>26</sup>Al)(p)(p)-coin. <sup>28</sup>P; deduced levels, two-proton emission from excited states. <sup>9</sup>Be(<sup>32</sup>S, X)<sup>22</sup>Ne / <sup>23</sup>Na / <sup>24</sup>Mg / <sup>25</sup>Al / <sup>26</sup>Al / <sup>27</sup>Si / <sup>28</sup>P / <sup>29</sup>S, E=80.4 MeV / nucleon; measured yields. JOUR PRVCA 81 054317

KEYNUMBERS AND KEYWORDS

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**A=197 (continued)**

- <sup>197</sup>Hg      2008SZZZ      NUCLEAR REACTIONS <sup>197</sup>Au(p, n), E≈5-65 MeV; <sup>197</sup>Au(p, pn), E≈15-65 MeV; <sup>197</sup>Au(p, 3n), E≈20-65 MeV; <sup>197</sup>Au(p, p3n), E≈25-65 MeV; <sup>197</sup>Au(p, 5n), E≈35-65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1259
- 2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010DE19      NUCLEAR REACTIONS Pt(<sup>6</sup>Li, X)<sup>194</sup>Au / <sup>196</sup>Au / <sup>198</sup>Au / <sup>199</sup>Au / <sup>197</sup>Hg, E=42.5 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , dominant cluster contribution. Comparison with EMPIRE-2.18. JOUR BRSPE 74 777
- 2010MA50      NUCLEAR REACTIONS <sup>168</sup>Yb, <sup>180</sup>W, <sup>184</sup>Os, <sup>190</sup>Pt, <sup>196</sup>Hg(n,  $\gamma$ ), E=spectrum[neutrons from <sup>7</sup>Li(p, n), E=1912 keV]; measured E $\gamma$ , I $\gamma$ ,  $\sigma$  using activation method; deduced capture cross sections for an average neutron energy of kT=25 keV. Comparison with previous measurements. Discussed impact on p-process network. JOUR PRVCA 82 035806
- <sup>197</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- <sup>197</sup>At      2010JA05      NUCLEAR REACTIONS <sup>150</sup>Sm(<sup>52</sup>Cr, 2np), E=231 MeV; <sup>120</sup>Sn(<sup>82</sup>Kr, 2np), E=355 MeV; <sup>165</sup>Ho(<sup>40</sup>Ar, 6n), E=200 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , ce,  $\gamma\gamma$ -,  $\gamma\alpha$ -, (particle) $\gamma$ -coin, isomer half-lives using JUROGAM array and GREAT spectrometer. Recoil-decay tagging method. Prompt and delayed  $\gamma$  spectra. <sup>199</sup>At; deduced levels, J,  $\pi$ , conversion coefficients, multipolarities, B(M2), isomers, configurations. <sup>197</sup>At; analyzed previous  $\gamma$ -ray data; deduced levels, J,  $\pi$ , bands. Systematics of energy levels of N=106-126 At nuclei. Systematics of B(M1) / B(E2) ratios of <sup>193</sup>Bi, <sup>197,199</sup>At nuclei. Systematics of kinematic moments of inertia for <sup>193</sup>Bi, <sup>192,194,196</sup>Po, <sup>197,199</sup>At, <sup>198</sup>Rn nuclei. JOUR PRVCA 82 044302

**A=198**

- <sup>198</sup>Ir      2008KUZU      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47

KEYNUMBERS AND KEYWORDS

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A=198 (*continued*)

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|-------------------|----------|--|
|                   | 2009KU28 | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c   |
| <sup>198</sup> Pt | 2008KUZJ | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,202</sup> Ir( $\beta^-$ ); measured I <sub>e</sub> (t); deduced T <sub>1/2</sub> . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47   |
|                   | 2009KU28 | RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c   |
| <sup>198</sup> Au | 2008MAZJ | NUCLEAR REACTIONS <sup>197</sup> Au(n, $\gamma$ ), E $\approx$ 0-750 eV; measured E $\gamma$ , I $\gamma$ at n-TOF; calculated $\sigma$ using SAMMY; deduced $\sigma$ , R-matrix resonance parameters. Cross-sections compared to ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P1265   |
|                   | 2008SAZR | NUCLEAR REACTIONS <sup>197</sup> Au(n, $\gamma$ ), E=low; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Preliminary and only in relative units. CONF Nice (Nucl Data for Sci and Technol) Proc,P583  |
|                   | 2010BU06 | NUCLEAR REACTIONS <sup>152</sup> Sm, <sup>165</sup> Ho, <sup>55</sup> Mn, <sup>98</sup> Mo, <sup>197</sup> Au(n, $\gamma$ ), E=epithermal; measured E $\gamma$ , I $\gamma$ ; deduced resonance energies. Comparison with theoretical calculations. JOUR NIMBE 268 2578  |
|                   | 2010CH01 | NUCLEAR REACTIONS <sup>197</sup> Au, <sup>139</sup> La(n, $\gamma$ ), E=0.0536 eV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with ENDF / B-VII.0 and JENDL-3.3 libraries. JOUR RAACA 98 1   |
|                   | 2010C002 | NUCLEAR REACTIONS <sup>197</sup> Au, <sup>151</sup> Sm, Pb, <sup>204,206,207,208</sup> Pb, <sup>209</sup> Bi, <sup>139</sup> La, <sup>232</sup> Th, <sup>24,25,26</sup> Mg, <sup>90,91,92,93,94,95,96</sup> Zr, <sup>186,187,188</sup> Os, <sup>233,234,235,236,238</sup> U, <sup>237</sup> Np, <sup>240</sup> Pu, <sup>241,243</sup> Am, <sup>245</sup> Cm(n, $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643 |
|                   | 2010DE19 | NUCLEAR REACTIONS Pt( <sup>6</sup> Li, X) <sup>194</sup> Au / <sup>196</sup> Au / <sup>198</sup> Au / <sup>199</sup> Au / <sup>197</sup> Hg, E=42.5 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , dominant cluster contribution. Comparison with EMPIRE-2.18. JOUR BRSPE 74 777  |
|                   | 2010DI01 | NUCLEAR REACTIONS <sup>102</sup> Pd, <sup>120</sup> Te, <sup>130</sup> Ba, <sup>132</sup> Ba, <sup>156</sup> Dy, <sup>197</sup> Au(n, $\gamma$ ), E=0-120 keV; measured E $\gamma$ , I $\gamma$ , Maxwellian-averaged $\sigma$ by activation technique; deduced reaction rates for p process. Comparison with standard Hauser-Feshbach models and with results from various reaction libraries including ENDF-B / VII.0. JOUR PRVCA 81 015801  |
|                   | 2010DI02 | NUCLEAR REACTIONS <sup>197</sup> Au, <sup>94</sup> Zr, <sup>64</sup> Zn, <sup>45</sup> Sc, <sup>139</sup> La(n, $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ ; deduced shape of neutron flux, covariances. JOUR ARISE 68 592  |
|                   | 2010EL02 | NUCLEAR REACTIONS <sup>98</sup> Mo, <sup>186</sup> W, <sup>197</sup> Au(n, $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ ; deduced neutron flux, $\sigma$ , resonance integrals. Comparison with available data. JOUR JRNCD 284 321  |
|                   | 2010G025 | RADIOACTIVITY <sup>198</sup> Au( $\beta^-$ )[from <sup>197</sup> Au(n, $\gamma$ ), E=thermal]; measured E $\gamma$ , I $\gamma$ , half-life in a non-metal environment; deduced no dependence of half-life on host material. JOUR PRVCA 82 044320  |
|                   | 2010HA12 | RADIOACTIVITY <sup>198</sup> Au( $\beta^-$ ), <sup>97</sup> Ru(EC) [from <sup>197</sup> Au, Ru(n, $\gamma$ )]; measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> , lack of temperature-dependent effects at low temperatures. JOUR ARISE 68 1550   |

KEYNUMBERS AND KEYWORDS

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**A=198 (continued)**

- 2010KA17 NUCLEAR REACTIONS  $^{77}\text{Se}$ ,  $^{197}\text{Au}(n, \gamma)$ , E=15-100, 510 keV; measured TOF,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ,  $\gamma$ -ray multiplicities. Comparison with JENDL-3.3, ENDF / B-VII.0, ENDF / B-VI.8 libraries. JOUR JNSTA 47 634
- 2010KR02 NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{197}\text{Au}$ ,  $^{59}\text{Co}$ , In,  $^{181}\text{Ta}(n, \gamma)$ , (n,  $\alpha$ ), (n, xn), E=1 GeV;  $^{191,192,193,194,196,198}\text{Au}$ ,  $^{24}\text{Na}$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced yields,  $\sigma$ . JOUR NIMAE 615 70
- 2010MA18 NUCLEAR REACTIONS  $^{197}\text{Au}(n, \gamma)$ , E=0-5.1 keV; measured En, In, neutron resonance strengths, capture yields, resonances, resonance parameters, response functions at n.TOF facility. C6D6 and the total absorption  $4\pi$  BaF<sub>2</sub> detector arrays. R-matrix analysis. Comparison with evaluated data for neutron resonances. JOUR PRVCA 81 044616
- 2010MA31 NUCLEAR REACTIONS  $^{197}\text{Au}(n, \gamma)$ , E<200 eV; measured neutron transmission,  $E\gamma$ ,  $I\gamma$ ; deduced yields, kernels, neutron resonance parameters. JOUR NIFBA 125 517
- 2010M006 RADIOACTIVITY  $^{198}\text{Au}(\beta^-)$  [from  $^{197}\text{Au}(n, \gamma)$ , E=thermal]; measured  $E\gamma$ ,  $I\gamma$ ,  $E_e$ ,  $I_e$ ; deduced  $\beta$ -branching, x-rays and  $\gamma$ -rays emission probabilities. JOUR ARISE 68 1566
- 2010WA03 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{56,57}\text{Fe}(n, \gamma)$ , E=10-90 keV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ENDF / B-VII.0 and JENDL-3.3 data. JOUR NIMBE 268 440
- $^{198}\text{Hg}$  2010G025 RADIOACTIVITY  $^{198}\text{Au}(\beta^-)$ [from  $^{197}\text{Au}(n, \gamma)$ , E=thermal]; measured  $E\gamma$ ,  $I\gamma$ , half-life in a non-metal environment; deduced no dependence of half-life on host material. JOUR PRVCA 82 044320
- 2010HA12 RADIOACTIVITY  $^{198}\text{Au}(\beta^-)$ ,  $^{97}\text{Ru}(\text{EC})$  [from  $^{197}\text{Au}$ ,  $\text{Ru}(n, \gamma)$ ]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ , lack of temperature-dependent effects at low temperatures. JOUR ARISE 68 1550
- 2010M006 RADIOACTIVITY  $^{198}\text{Au}(\beta^-)$  [from  $^{197}\text{Au}(n, \gamma)$ , E=thermal]; measured  $E\gamma$ ,  $I\gamma$ ,  $E_e$ ,  $I_e$ ; deduced  $\beta$ -branching, x-rays and  $\gamma$ -rays emission probabilities. JOUR ARISE 68 1566
- $^{198}\text{Tl}$  2008LAZP NUCLEAR REACTIONS  $^{197}\text{Au}(\alpha, 3n)$ , E=40 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin, E(e), I(e), (e) $\gamma$ -coin, linear polarization; deduced  $^{198}\text{Tl}$  E, J,  $\pi$ , bands, B(E2), B(M1), yrast; calculated deformation, bands using two quasiparticles plus triaxial rotor. Results on CD only. CONF E.Lansing (NS2008),P25,Lawrie
- 2010LA15 NUCLEAR REACTIONS  $^{197}\text{Au}(\alpha, 3n)$ , E=40 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$ , E(ce), I(ce), (ce) $\gamma$ -coin,  $\gamma\gamma$ -coin, polarization anisotropy.  $^{198}\text{Tl}$ ; deduced  $\gamma$  transitions, multipolarities, internal-conversion X-rays, levels, J,  $\pi$ , B(M1), B(E2) for yrast and side bands; calculated levels, J,  $\pi$ , B(M1), B(E2) for yrast and side bands, rotation-angular momentum angle. JOUR ZAANE 45 39
- $^{198}\text{Pb}$  2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485



KEYNUMBERS AND KEYWORDS

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A=198 (*continued*)

<sup>198</sup>At      2010JA05      RADIOACTIVITY <sup>196</sup>Po, <sup>198,199</sup>At, <sup>199,200</sup>Rn( $\alpha$ ); measured E $\alpha$ .  
JOUR PRVCA 82 044302

A=199

<sup>199</sup>Os      2008KUZY      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured  
Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl  
Data for Sci and Technol) Proc,P47

2009KU28      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,200</sup>Ir( $\beta^-$ ) [from  
Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon]; measured T<sub>1/2</sub>. Comparison with  
two QRPA models. JOUR NUPAB 827 587c

<sup>199</sup>Ir      2008KUZY      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured  
Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl  
Data for Sci and Technol) Proc,P47

2009KU28      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,200</sup>Ir( $\beta^-$ ) [from  
Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon]; measured T<sub>1/2</sub>. Comparison with  
two QRPA models. JOUR NUPAB 827 587c

<sup>199</sup>Pt      2008KUZY      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured  
Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl  
Data for Sci and Technol) Proc,P47

2009KU28      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,200</sup>Ir( $\beta^-$ ) [from  
Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon]; measured T<sub>1/2</sub>. Comparison with  
two QRPA models. JOUR NUPAB 827 587c

<sup>199</sup>Au      2010DE19      NUCLEAR REACTIONS Pt(<sup>6</sup>Li, X)<sup>194</sup>Au / <sup>196</sup>Au / <sup>198</sup>Au / <sup>199</sup>Au /  
<sup>197</sup>Hg, E=42.5 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ,  
dominant cluster contribution. Comparison with EMPIRE-2.18. JOUR  
BRSPE 74 777

<sup>199</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb  
/ <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb /  
<sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb /  
<sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi /  
<sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi /  
<sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured  
production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

<sup>199</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb  
/ <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb /  
<sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb /  
<sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi /  
<sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi /  
<sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured  
production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

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**A=199 (continued)**

<sup>199</sup> At	2010JA05	NUCLEAR REACTIONS <sup>150</sup> Sm( <sup>52</sup> Cr, 2np), E=231 MeV; <sup>120</sup> Sn( <sup>82</sup> Kr, 2np), E=355 MeV; <sup>165</sup> Ho( <sup>40</sup> Ar, 6n), E=200 MeV; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , ce, $\gamma\gamma$ -, $\gamma\alpha$ -, (particle) $\gamma$ -coin, isomer half-lives using JUROGAM array and GREAT spectrometer. Recoil-decay tagging method. Prompt and delayed $\gamma$ spectra. <sup>199</sup> At; deduced levels, J, $\pi$ , conversion coefficients, multipolarities, B(M2), isomers, configurations. <sup>197</sup> At; analyzed previous $\gamma$ -ray data; deduced levels, J, $\pi$ , bands. Systematics of energy levels of N=106-126 At nuclei. Systematics of B(M1) / B(E2) ratios of <sup>193</sup> Bi, <sup>197,199</sup> At nuclei. Systematics of kinematic moments of inertia for <sup>193</sup> Bi, <sup>192,194,196</sup> Po, <sup>197,199</sup> At, <sup>198</sup> Rn nuclei. JOUR PRVCA 82 044302
	2010JA05	RADIOACTIVITY <sup>196</sup> Po, <sup>198,199</sup> At, <sup>199,200</sup> Rn( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 82 044302
<sup>199</sup> Rn	2010JA05	RADIOACTIVITY <sup>196</sup> Po, <sup>198,199</sup> At, <sup>199,200</sup> Rn( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 82 044302

**A=200**

<sup>200</sup> Os	2008KUZU	RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,202</sup> Ir( $\beta^-$ ); measured Ie(t); deduced T <sub>1/2</sub> . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
	2009KUZ8	RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c
<sup>200</sup> Ir	2008KUZU	RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,202</sup> Ir( $\beta^-$ ); measured Ie(t); deduced T <sub>1/2</sub> . Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc,P47
	2009KUZ8	RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c
<sup>200</sup> Pt	2009KUZ8	RADIOACTIVITY <sup>194,195,196</sup> Re, <sup>199,200</sup> Os, <sup>198,199,200</sup> Ir( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon]; measured T <sub>1/2</sub> . Comparison with two QRPA models. JOUR NUPAB 827 587c
<sup>200</sup> Pb	2009AL32	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>196</sup> Pb / <sup>197</sup> Pb / <sup>198</sup> Pb / <sup>199</sup> Pb / <sup>200</sup> Pb / <sup>201</sup> Pb / <sup>202</sup> Pb / <sup>203</sup> Pb / <sup>204</sup> Pb / <sup>205</sup> Pb / <sup>206</sup> Pb / <sup>207</sup> Pb / <sup>208</sup> Pb / <sup>209</sup> Pb / <sup>210</sup> Pb / <sup>214</sup> Pb / <sup>215</sup> Pb / <sup>216</sup> Pb / <sup>217</sup> Pb / <sup>218</sup> Pb / <sup>219</sup> Pb / <sup>199</sup> Bi / <sup>200</sup> Bi / <sup>201</sup> Bi / <sup>202</sup> Bi / <sup>203</sup> Bi / <sup>204</sup> Bi / <sup>205</sup> Bi / <sup>206</sup> Bi / <sup>207</sup> Bi / <sup>208</sup> Bi / <sup>209</sup> Bi / <sup>210</sup> Bi / <sup>211</sup> Bi / <sup>212</sup> Bi / <sup>213</sup> Bi / <sup>214</sup> Bi / <sup>218</sup> Bi / <sup>219</sup> Bi / <sup>220</sup> Bi / <sup>221</sup> Bi / <sup>222</sup> Bi / <sup>223</sup> Bi, E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
<sup>200</sup> Bi	2009AL32	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>196</sup> Pb / <sup>197</sup> Pb / <sup>198</sup> Pb / <sup>199</sup> Pb / <sup>200</sup> Pb / <sup>201</sup> Pb / <sup>202</sup> Pb / <sup>203</sup> Pb / <sup>204</sup> Pb / <sup>205</sup> Pb / <sup>206</sup> Pb / <sup>207</sup> Pb / <sup>208</sup> Pb / <sup>209</sup> Pb / <sup>210</sup> Pb / <sup>214</sup> Pb / <sup>215</sup> Pb / <sup>216</sup> Pb / <sup>217</sup> Pb / <sup>218</sup> Pb / <sup>219</sup> Pb / <sup>199</sup> Bi / <sup>200</sup> Bi / <sup>201</sup> Bi / <sup>202</sup> Bi / <sup>203</sup> Bi / <sup>204</sup> Bi / <sup>205</sup> Bi / <sup>206</sup> Bi / <sup>207</sup> Bi / <sup>208</sup> Bi / <sup>209</sup> Bi / <sup>210</sup> Bi / <sup>211</sup> Bi / <sup>212</sup> Bi / <sup>213</sup> Bi / <sup>214</sup> Bi / <sup>218</sup> Bi / <sup>219</sup> Bi / <sup>220</sup> Bi / <sup>221</sup> Bi / <sup>222</sup> Bi / <sup>223</sup> Bi, E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
<sup>200</sup> Rn	2010JA05	RADIOACTIVITY <sup>196</sup> Po, <sup>198,199</sup> At, <sup>199,200</sup> Rn( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 82 044302

**A=201**

- <sup>201</sup>Tl      2010FOZZ      NUCLEAR REACTIONS <sup>93</sup>Nb(<sup>12</sup>C, <sup>8</sup>Be), E=400 MeV; <sup>197</sup>Au(<sup>12</sup>C, <sup>8</sup>Be), E=400 MeV; measured E $\alpha$ , I $\alpha(\theta)$ , E(particle), I(particle),  $\alpha\alpha$ -coin, (particle) $\alpha$ -coin; deduced d $\sigma$ , d $\sigma(\theta)$ , quasi-elastic <sup>8</sup>Be breakup. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.2, P545
- <sup>201</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- <sup>201</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- <sup>201</sup>Po      2010DE04      RADIOACTIVITY <sup>201</sup>At, <sup>205</sup>Fr(EC), ( $\beta^+$ )[from U(p, X), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , ce,  $\gamma\gamma^-$ ,  $\gamma(\text{ce})$ -coin, half-lives, K-conversion coefficients, and EC /  $\beta^+$  branching ratios. <sup>201</sup>Po, <sup>205</sup>Rn; deduced levels, J,  $\pi$ , multipolarity, and logft. Systematics of 3 / 2- and 13 / 2+ states in Pb, Po, and Rn nuclei with N=117, 119, 121 and 123. JOUR PRVCA 81 024322
- <sup>201</sup>At      2010DE04      RADIOACTIVITY <sup>201</sup>At, <sup>205</sup>Fr(EC), ( $\beta^+$ )[from U(p, X), E=1.4 GeV]; measured E $\gamma$ , I $\gamma$ , ce,  $\gamma\gamma^-$ ,  $\gamma(\text{ce})$ -coin, half-lives, K-conversion coefficients, and EC /  $\beta^+$  branching ratios. <sup>201</sup>Po, <sup>205</sup>Rn; deduced levels, J,  $\pi$ , multipolarity, and logft. Systematics of 3 / 2- and 13 / 2+ states in Pb, Po, and Rn nuclei with N=117, 119, 121 and 123. JOUR PRVCA 81 024322

**A=202**

- <sup>202</sup>Ir      2008KUZU      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc, P47
- <sup>202</sup>Pt      2008KUZU      RADIOACTIVITY <sup>194,195,196</sup>Re, <sup>199,200</sup>Os, <sup>198,199,202</sup>Ir( $\beta^-$ ); measured Ie(t); deduced T<sub>1/2</sub>. Compared with calculations. CONF Nice (Nucl Data for Sci and Technol) Proc, P47
- <sup>202</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

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**A=202 (continued)**

- <sup>202</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- <sup>202</sup>Fr      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=203**

- <sup>203</sup>Pt      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>203</sup>Hg      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>203</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

A=203 (continued)

- <sup>203</sup>Bi 2009AL32 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- <sup>203</sup>Fr 2009PA49 NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

A=204

- <sup>204</sup>Pt 2010AL24 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>204</sup>Tl 2008COZW NUCLEAR REACTIONS <sup>203</sup>Tl(n,  $\gamma$ ), E $\approx$ 15 meV - 300 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin., deposited energy; <sup>205</sup>Tl(n,  $\gamma$ ), E $\approx$ 2350-3300 eV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin., deduced  $\sigma$ . Compared to other data, JEFF-3.0. CONF Nice (Nucl Data for Sci and Technol) Proc,P579
- 2010QA01 NUCLEAR REACTIONS Ti(p, X)<sup>45</sup>Ca / <sup>49</sup>V, E<200 MeV; Pb(p, X)<sup>204</sup>Tl, E<90 MeV; measured Ee, Ie, x-rays, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Radiochemical techniques, comparison with ALICE-IPPE and TALYS codes. JOUR RAACA 98 447
- <sup>204</sup>Pb 2009AL32 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

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**A=204 (continued)**

- 2010ZE06      NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{204,206,208}\text{Pb}$ (polarized p, p), E=295 MeV; measured proton spectra,  $\sigma(\theta)$  and analyzing powers; deduced neutron and proton densities, neutron skin thickness and rms radii using model-independent sum-of-Gaussians distributions. Comparison with relativistic impulse approximation (RIA) for  $^{58}\text{Ni}$  data and with RIA and Murdock and Horowitz (MH) model calculations for Pb nuclei. JOUR PRVCA 82 044611
- $^{204}\text{Bi}$       2009AL32      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- $^{204}\text{Po}$       2010KA29      NUCLEAR REACTIONS  $^{197}\text{Au}(^{16}\text{O}, \text{xn})^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr}$ , E=88, 94, 100 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, evaporation residue yields,  $T_{1/2}$  using INGA array.  $^{208}\text{Fr}$ ; deduced energy levels, J,  $\pi$ ,  $T_{1/2}$ , DCO ratios.  $^{204}\text{Po}$ ,  $^{206}\text{At}$ ,  $^{208}\text{Rn}$ ; deduced levels  $T_{1/2}$ . Comparison with other data. JOUR NUPAB 842 1
- $^{204}\text{At}$       2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured  $E\gamma$ ,  $I\gamma$ , A(particle) using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- $^{204}\text{Fr}$       2009PA49      NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=205**

- $^{205}\text{Pt}$       2010AL24      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

KEYNUMBERS AND KEYWORDS

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**A=205 (continued)**

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| <sup>205</sup> Au | 2008B0ZG | RADIOACTIVITY <sup>54</sup> Ni( $\beta^+$ ); measured <sup>54</sup> Co E $\gamma$ , I $\gamma$ ; <sup>205</sup> Au( $\beta^-$ ); measured ICC, E $\gamma$ , I $\gamma$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P83   |
|                   | 2009P014 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>205</sup> Au, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin using RISING array and FRS. <sup>205</sup> Au; deduced high-spin yrast levels, J, $\pi$ , B(E2), B(E3). Comparison with OXBASH shell model and systematics. JOUR ZAANE 42 489   |
| <sup>205</sup> Hg | 2008B0ZG | RADIOACTIVITY <sup>54</sup> Ni( $\beta^+$ ); measured <sup>54</sup> Co E $\gamma$ , I $\gamma$ ; <sup>205</sup> Au( $\beta^-$ ); measured ICC, E $\gamma$ , I $\gamma$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P83   |
|                   | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup> Kr, <sup>111</sup> Cd, <sup>121,124,126</sup> I, <sup>120,121,122,123,125,127,129,131,133</sup> Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup> Hg, <sup>204,205,206,207,208,209,210</sup> At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069   |
|                   | 2010KU02 | RADIOACTIVITY <sup>205</sup> Hg, <sup>207</sup> Tl( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=750 MeV / nucleon]; <sup>140</sup> Pr, <sup>142</sup> Pm, <sup>122</sup> I(EC) [from Be( <sup>152</sup> Sm, X), E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525  |
| <sup>205</sup> Tl | 2010KU02 | RADIOACTIVITY <sup>205</sup> Hg, <sup>207</sup> Tl( $\beta^-$ ) [from Be( <sup>208</sup> Pb, X), E=750 MeV / nucleon]; <sup>140</sup> Pr, <sup>142</sup> Pm, <sup>122</sup> I(EC) [from Be( <sup>152</sup> Sm, X), E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525  |
| <sup>205</sup> Pb | 2008D0ZU | NUCLEAR REACTIONS <sup>204,206,207</sup> Pb, <sup>209</sup> Bi(n, $\gamma$ ), E $\approx$ 4-50 keV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ ; s-process abundances. Compared to older data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1311   |
|                   | 2009AL32 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>196</sup> Pb / <sup>197</sup> Pb / <sup>198</sup> Pb / <sup>199</sup> Pb / <sup>200</sup> Pb / <sup>201</sup> Pb / <sup>202</sup> Pb / <sup>203</sup> Pb / <sup>204</sup> Pb / <sup>205</sup> Pb / <sup>206</sup> Pb / <sup>207</sup> Pb / <sup>208</sup> Pb / <sup>209</sup> Pb / <sup>210</sup> Pb / <sup>214</sup> Pb / <sup>215</sup> Pb / <sup>216</sup> Pb / <sup>217</sup> Pb / <sup>218</sup> Pb / <sup>219</sup> Pb / <sup>199</sup> Bi / <sup>200</sup> Bi / <sup>201</sup> Bi / <sup>202</sup> Bi / <sup>203</sup> Bi / <sup>204</sup> Bi / <sup>205</sup> Bi / <sup>206</sup> Bi / <sup>207</sup> Bi / <sup>208</sup> Bi / <sup>209</sup> Bi / <sup>210</sup> Bi / <sup>211</sup> Bi / <sup>212</sup> Bi / <sup>213</sup> Bi / <sup>214</sup> Bi / <sup>218</sup> Bi / <sup>219</sup> Bi / <sup>220</sup> Bi / <sup>221</sup> Bi / <sup>222</sup> Bi / <sup>223</sup> Bi, E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485 |
|                   | 2010C002 | NUCLEAR REACTIONS <sup>197</sup> Au, <sup>151</sup> Sm, Pb, <sup>204,206,207,208</sup> Pb, <sup>209</sup> Bi, <sup>139</sup> La, <sup>232</sup> Th, <sup>24,25,26</sup> Mg, <sup>90,91,92,93,94,95,96</sup> Zr, <sup>186,187,188</sup> Os, <sup>233,234,235,236,238</sup> U, <sup>237</sup> Np, <sup>240</sup> Pu, <sup>241,243</sup> Am, <sup>245</sup> Cm(n, $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643   |

KEYNUMBERS AND KEYWORDS

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**A=205 (continued)**

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| $^{205}\text{Bi}$ | 2009AL32 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485  |
| $^{205}\text{At}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{205}\text{Rn}$ | 2010DE04 | RADIOACTIVITY $^{201}\text{At}$ , $^{205}\text{Fr}(\text{EC})$ , $(\beta^+)$ [from U(p, X), E=1.4 GeV]; measured $E\gamma$ , $I\gamma$ , ce, $\gamma\gamma^-$ , $\gamma(\text{ce})$ -coin, half-lives, K-conversion coefficients, and EC / $\beta^+$ branching ratios. $^{201}\text{Po}$ , $^{205}\text{Rn}$ ; deduced levels, J, $\pi$ , multipolarity, and logft. Systematics of 3 / 2- and 13 / 2+ states in Pb, Po, and Rn nuclei with N=117, 119, 121 and 123. JOUR PRVCA 81 024322  |
| $^{205}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010DE04 | RADIOACTIVITY $^{201}\text{At}$ , $^{205}\text{Fr}(\text{EC})$ , $(\beta^+)$ [from U(p, X), E=1.4 GeV]; measured $E\gamma$ , $I\gamma$ , ce, $\gamma\gamma^-$ , $\gamma(\text{ce})$ -coin, half-lives, K-conversion coefficients, and EC / $\beta^+$ branching ratios. $^{201}\text{Po}$ , $^{205}\text{Rn}$ ; deduced levels, J, $\pi$ , multipolarity, and logft. Systematics of 3 / 2- and 13 / 2+ states in Pb, Po, and Rn nuclei with N=117, 119, 121 and 123. JOUR PRVCA 81 024322  |

**A=206**

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| $^{206}\text{Hg}$ | 2008TAZI | NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069 |
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A=206 (*continued*)

- 2009AL29 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X}){}^{206}\text{Hg} / {}^{208}\text{Hg} / {}^{209}\text{Tl}$ , E=1 GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , delayed  $\gamma$ , (particle) $\gamma$ -coin, and half-lives using RISING array at GSI facility.  ${}^{208}\text{Hg}$ ,  ${}^{209}\text{Tl}$ ; deduced levels, J,  $\pi$ , isomers, and B(E2). Systematics of energies of first 2+ and 4+ states in even-even nuclei with Z=74-90, and N=112-138. Comparison with shell-model calculations. JOUR PRVCA 80 061302
- ${}^{206}\text{Tl}$  2008COZW NUCLEAR REACTIONS  ${}^{203}\text{Tl}(\text{n}, \gamma)$ , E $\approx$ 15 meV - 300 keV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin., deposited energy;  ${}^{205}\text{Tl}(\text{n}, \gamma)$ , E $\approx$ 2350-3300 eV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin., deduced  $\sigma$ . Compared to other data, JEFF-3.0. CONF Nice (Nucl Data for Sci and Technol) Proc,P579
- ${}^{206}\text{Pb}$  2008BIZV RADIOACTIVITY  ${}^{210}\text{Po}(\alpha)$ [from  ${}^{209}\text{Bi}(\text{n}, \gamma)$ ],  ${}^{211}\text{Po}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ; deduced abundance contributions for the s-process at kT=30 keV. CONF Nice (Nucl Data for Sci and Technol) Proc,P1333
- 2008BOZJ RADIOACTIVITY  ${}^{210}\text{Po}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ; deduced differential  $\gamma$ -emission probabilities. Comparison with model calculations of bremsstrahlung. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P523,Boie
- 2008NEZY NUCLEAR REACTIONS  ${}^{56}\text{Fe}$ ,  ${}^{206}\text{Pb}(\text{n}, \text{n}'\gamma)$ , E $\approx$ 1000-19000 keV; measured  $E\gamma$ ,  $I\gamma(\theta)$ ; deduced  $\sigma$ . Preliminary results. CONF Nice (Nucl Data for Sci and Technol) Proc,P1016
- 2008OBZZ NUCLEAR REACTIONS  ${}^{235}\text{U}(\text{n}, \text{f})$ , E=thermal, fast; measured fission fragments in time; deduced  $T_{1/2}$ ;  $\text{Pb}(\text{n}, \text{xn}){}^{206}\text{Pb}$ , E=5.1, 6.2, 7.0 MeV; measured  $E\gamma$ ,  $I\gamma(\text{t})$ ; deduced isomeric transition, spin population;  ${}^{234}\text{U}(\text{n}, \text{f})$ , E=0.95, 1.27 MeV; measured fission fragments in time; deduced  ${}^{235}\text{U}$  shape isomer  $\sigma$ ,  $T_{1/2}$ ;  $\text{U}(\text{n}, \text{x}){}^{239}\text{U}$ , E $\approx$ 1 MeV; measured  $E\gamma$ ,  $I\gamma(\text{t})$ ; deduced  ${}^{239}\text{U}$  superdeformation ground state, isomeric transitions. NEPTUNE spectrometer. CONF Nice (Nucl Data for Sci and Technol) Proc,P53
- 2009AL32 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X}){}^{196}\text{Pb} / {}^{197}\text{Pb} / {}^{198}\text{Pb} / {}^{199}\text{Pb} / {}^{200}\text{Pb} / {}^{201}\text{Pb} / {}^{202}\text{Pb} / {}^{203}\text{Pb} / {}^{204}\text{Pb} / {}^{205}\text{Pb} / {}^{206}\text{Pb} / {}^{207}\text{Pb} / {}^{208}\text{Pb} / {}^{209}\text{Pb} / {}^{210}\text{Pb} / {}^{214}\text{Pb} / {}^{215}\text{Pb} / {}^{216}\text{Pb} / {}^{217}\text{Pb} / {}^{218}\text{Pb} / {}^{219}\text{Pb} / {}^{199}\text{Bi} / {}^{200}\text{Bi} / {}^{201}\text{Bi} / {}^{202}\text{Bi} / {}^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi} / {}^{207}\text{Bi} / {}^{208}\text{Bi} / {}^{209}\text{Bi} / {}^{210}\text{Bi} / {}^{211}\text{Bi} / {}^{212}\text{Bi} / {}^{213}\text{Bi} / {}^{214}\text{Bi} / {}^{218}\text{Bi} / {}^{219}\text{Bi} / {}^{220}\text{Bi} / {}^{221}\text{Bi} / {}^{222}\text{Bi} / {}^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009FRZX NUCLEAR REACTIONS  ${}^{206,207,208}\text{Pb}(\gamma, \gamma')$ , E=4.8, 5.5 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$  with polarized incident beam using HI $\gamma$ S  $\gamma$ -source at DFELL; deduced coupling of  $\nu$  hole in  ${}^{207}\text{Pb}$  to  $1^-$  collective  ${}^{208}\text{Pb}$  state. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P591,Fritzsche
- 2009MA70 NUCLEAR REACTIONS  ${}^{13}\text{C}(\alpha, \gamma)$ ,  $(\alpha, \text{n})$ , E=2.000, 2.270 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ ,  $E\text{n}$ ,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data.  ${}^{27}\text{Al}$ ,  ${}^{127}\text{I}$ ,  ${}^{206,207,208}\text{Pb}(\text{n}, \text{n}')$ , E=3.5-4.4 MeV;  ${}^{127}\text{I}(\text{n}, \gamma)$ , E=10.1-11.3 MeV; measured  $E\gamma$ . JOUR PRVCA 80 065802

KEYNUMBERS AND KEYWORDS

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**A=206 (continued)**

- 2010ZE06 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{204,206,208}\text{Pb}$ (polarized p, p), E=295 MeV; measured proton spectra,  $\sigma(\theta)$  and analyzing powers; deduced neutron and proton densities, neutron skin thickness and rms radii using model-independent sum-of-Gaussians distributions. Comparison with relativistic impulse approximation (RIA) for  $^{58}\text{Ni}$  data and with RIA and Murdock and Horowitz (MH) model calculations for Pb nuclei. JOUR PRVCA 82 044611
- $^{206}\text{Bi}$  2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- $^{206}\text{At}$  2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured  $E\gamma$ ,  $I\gamma$ , A(particle) using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- 2010KA29 NUCLEAR REACTIONS  $^{197}\text{Au}(^{16}\text{O}, \text{xn})^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr}$ , E=88, 94, 100 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, evaporation residue yields,  $T_{1/2}$  using INGA array.  $^{208}\text{Fr}$ ; deduced energy levels, J,  $\pi$ ,  $T_{1/2}$ , DCO ratios.  $^{204}\text{Po}$ ,  $^{206}\text{At}$ ,  $^{208}\text{Rn}$ ; deduced levels  $T_{1/2}$ . Comparison with other data. JOUR NUPAB 842 1
- $^{206}\text{Fr}$  2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(p, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=207**

- $^{207}\text{Au}$  2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

## A=207 (continued)

- <sup>207</sup>Tl 2009M037 RADIOACTIVITY <sup>231</sup>Pa, <sup>230</sup>U, <sup>226,227</sup>Th, <sup>222,223</sup>Ra, <sup>218,219</sup>Rn, <sup>214,215</sup>Po, <sup>211</sup>Bi( $\alpha$ ); measured  $E\alpha$ . JOUR PRVCA 80 054612
- 2010KU02 RADIOACTIVITY <sup>205</sup>Hg, <sup>207</sup>Tl( $\beta^-$ ) [from Be(<sup>208</sup>Pb, X), E=750 MeV / nucleon]; <sup>140</sup>Pr, <sup>142</sup>Pm, <sup>122</sup>I(EC) [from Be(<sup>152</sup>Sm, X), E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525
- <sup>207</sup>Pb 2008BIZV RADIOACTIVITY <sup>210</sup>Po( $\alpha$ )[from <sup>209</sup>Bi(n,  $\gamma$ )], <sup>211</sup>Po( $\alpha$ ); measured  $E\alpha$ ,  $I\alpha$ ; deduced abundance contributions for the s-process at kT=30 keV. CONF Nice (Nucl Data for Sci and Technol) Proc,P1333
- 2008DOZU NUCLEAR REACTIONS <sup>204,206,207</sup>Pb, <sup>209</sup>Bi(n,  $\gamma$ ), E $\approx$ 4-50 keV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ; s-process abundances. Compared to older data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1311
- 2009AL32 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009FRZX NUCLEAR REACTIONS <sup>206,207,208</sup>Pb( $\gamma$ ,  $\gamma'$ ), E=4.8, 5.5 MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$  with polarized incident beam using HI $\gamma$ S  $\gamma$ -source at DFELL; deduced coupling of  $\nu$  hole in <sup>207</sup>Pb to 1<sup>-</sup> collective <sup>208</sup>Pb state. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P591,Fritzsche
- 2009MA70 NUCLEAR REACTIONS <sup>13</sup>C( $\alpha$ ,  $\gamma$ ), ( $\alpha$ , n), E=2.000, 2.270 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ ,  $E_n$ ,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data. <sup>27</sup>Al, <sup>127</sup>I, <sup>206,207,208</sup>Pb(n, n'), E=3.5-4.4 MeV; <sup>127</sup>I(n,  $\gamma$ ), E=10.1-11.3 MeV; measured  $E\gamma$ . JOUR PRVCA 80 065802
- 2010C002 NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010KU02 RADIOACTIVITY <sup>205</sup>Hg, <sup>207</sup>Tl( $\beta^-$ ) [from Be(<sup>208</sup>Pb, X), E=750 MeV / nucleon]; <sup>140</sup>Pr, <sup>142</sup>Pm, <sup>122</sup>I(EC) [from Be(<sup>152</sup>Sm, X), E=508 MeV / nucleon]; measured time evolution of the Schottky noise, revolution frequencies; deduced decay rates, Q-values, time-dependent decay constant. JOUR APOBB 41 525
- 2010TA22 NUCLEAR REACTIONS <sup>248</sup>Cm(<sup>209</sup>Bi, <sup>210</sup>Bi)<sup>247</sup>Cm, E=1450 MeV; <sup>250</sup>Cm(<sup>209</sup>Bi, <sup>208</sup>Bi)<sup>249</sup>Cm, E=1450 MeV; <sup>249</sup>Cf(<sup>207</sup>Pb, <sup>207</sup>Pb'), E=1430 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>247,249</sup>Cm, <sup>249</sup>Cf; deduced levels, J,  $\pi$ , ( $g_K-g_R$ ) /  $Q_0$ , alignments, Nilsson configurations, and rotational bands. <sup>197</sup>Au, <sup>207</sup>Pb, <sup>208</sup>Bi, <sup>210</sup>Bi; measured  $E\gamma$ . Systematics of alignments for <sup>244</sup>Pu, <sup>246</sup>Cm, <sup>248</sup>Cf, <sup>250</sup>Fm and <sup>252</sup>No, Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301

KEYNUMBERS AND KEYWORDS

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**A=207 (continued)**

- <sup>207</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009VI09      RADIOACTIVITY <sup>211,212,212m,213,214,214m</sup>At( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 80 054609
- <sup>207</sup>At      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>207</sup>Fr      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=208**

- <sup>208</sup>Au      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>208</sup>Hg      2009AL29      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>206</sup>Hg / <sup>208</sup>Hg / <sup>209</sup>Tl, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , delayed  $\gamma$ , (particle) $\gamma$ -coin, and half-lives using RISING array at GSI facility. <sup>208</sup>Hg, <sup>209</sup>Tl; deduced levels, J,  $\pi$ , isomers, and B(E2). Systematics of energies of first 2+ and 4+ states in even-even nuclei with Z=74-90, and N=112-138. Comparison with shell-model calculations. JOUR PRVCA 80 061302
- <sup>208</sup>Pb      2008AZZZ      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>70</sup>Ni, <sup>70</sup>Ni'), (<sup>74</sup>Zn, <sup>74</sup>Zn'), (<sup>76</sup>Ge, <sup>76</sup>Ge'), E=60 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , reaction products; <sup>70</sup>Ni, <sup>74</sup>Zn, <sup>76</sup>Ge; deduced level energies, J,  $\pi$ ,  $\sigma$ , B(E2). CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P39,Azaiez

## A=208 (continued)

- 2008DOZU NUCLEAR REACTIONS  $^{204,206,207}\text{Pb}$ ,  $^{209}\text{Bi}(n, \gamma)$ ,  $E \approx 4\text{--}50$  keV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ ; s-process abundances. Compared to older data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1311
- 2008GOZT NUCLEAR REACTIONS  $^{208}\text{Pb}(p, p')$ ,  $E=11\text{--}18$  MeV; measured reaction products;  $^{209}\text{Bi}$ ; deduced isobaric analog resonance states,  $\sigma$ , configuration mixing. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P547,Gomez
- 2008OHZT NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{89}\text{Y}$ ,  $^{208}\text{Pb}(n, n)$ ,  $E=96$  MeV; measured  $E_n$ ,  $\ln(\theta)$ ; deduced  $d\sigma(\theta)$ ; calculated  $d\sigma(\theta)$  using different models.  $^{12}\text{C}(n, n)$   $d\sigma$  compared also to  $^{12}\text{C}(p, p)$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P1023
- 2008VOZV NUCLEAR REACTIONS  $^{208}\text{Pb}(p, p')$ ,  $E=295$  MeV; measured reaction products; deduced  $\sigma(\theta)$ ,  $\sigma(\theta, E)$ ,  $B(E1)$ . CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P335,Von Neumann-
- 2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, X)^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ ,  $E=1$  GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009FRZX NUCLEAR REACTIONS  $^{206,207,208}\text{Pb}(\gamma, \gamma')$ ,  $E=4.8, 5.5$  MeV; measured  $E\gamma$ ,  $I\gamma(\theta)$  with polarized incident beam using HI $\gamma$ S  $\gamma$ -source at DFELL; deduced coupling of  $\nu$  hole in  $^{207}\text{Pb}$  to  $1^-$  collective  $^{208}\text{Pb}$  state. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P591,Fritzsche
- 2009GAZW NUCLEAR REACTIONS  $^{150}\text{Nd}(\alpha, 2n)$ ,  $E=22.8$  MeV; measured non-yrast  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.;  $^{208}\text{Pb}(^{152}\text{Sm}, ^{152}\text{Sm}')$ ,  $E=652$  MeV; measured Coulomb excitation  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.;  $^{152}\text{Sm}(n, n'\gamma)$ ,  $E=1.2\text{--}3.0$  MeV; measured  $E\gamma$ ,  $I\gamma$ ;  $^{152}\text{Sm}(n, n'\gamma)$ ,  $E=2.05, 2.7$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ;  $^{152}\text{Sm}(n, n'\gamma)$ ,  $E=3.2$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ ,  $d\sigma(\theta)$ ,  $E$ ,  $J$ ,  $\pi$ ,  $B(E2)$ , bands, decay schemes. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P391,Garrett
- 2009MA70 NUCLEAR REACTIONS  $^{13}\text{C}(\alpha, \gamma)$ ,  $(\alpha, n)$ ,  $E=2.000, 2.270$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ ,  $E_n$ ,  $\sigma$ , and  $\sigma(\theta)$ ; deduced astrophysical S factors. Comparison with previous experimental data.  $^{27}\text{Al}$ ,  $^{127}\text{I}$ ,  $^{206,207,208}\text{Pb}(n, n')$ ,  $E=3.5\text{--}4.4$  MeV;  $^{127}\text{I}(n, \gamma)$ ,  $E=10.1\text{--}11.3$  MeV; measured  $E\gamma$ . JOUR PRVCA 80 065802
- 2009VOZY NUCLEAR REACTIONS  $^{208}\text{Pb}(p, p')$   $E=295$  MeV, polarized protons; measured  $E_p$ ,  $I_p$  at 0 degrees; deduced  $\sigma(\theta)$ ,  $B(E1)$  strengths. Compared to calculated strengths using QPM and to  $(\gamma, \gamma')$  reaction data. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P404,von Neumann-Co
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ ,  $E=0.001\text{--}1$  MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

**A=208 (continued)**

- 2010EL05 NUCLEAR REACTIONS  $^1\text{H}(^{21}\text{N}, ^{21}\text{N}')$ , ( $^{21}\text{N}, \text{X}$ ),  $E=52.0$  MeV;  $^{208}\text{Pb}(^{21}\text{N}, ^{21}\text{N}')$ , ( $^{21}\text{N}, \text{X}$ ),  $E=48.1$  MeV, [secondary  $^{21}\text{N}$  beam from  $^{181}\text{Ta}(^{40}\text{Ar}, \text{X})$ ,  $E=63$  MeV / nucleon primary reaction]; measured particle spectra,  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, cross sections.  $^{19,21}\text{N}$ ; deduced levels, B(E2). GEANT4 simulation of  $\gamma$ -ray spectra. JOUR PRVCA 82 027305
- 2010EV01 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{16}\text{O}, \text{X})$ ,  $E(\text{cm})=50\text{-}75$  MeV; measured particle spectra.  $^{208}\text{Pb}$ ; deduced excitation function of octupole vibrational state at 2.615 MeV; analyzed earlier quasielastic scattering excitation function data, and coulomb nuclear nuclear interface (CNI) using coupled-channel calculations. JOUR PRVCA 81 014602
- 2010HE08 NUCLEAR REACTIONS  $^{208}\text{Pb}(\text{p}, \text{p}')$ ,  $E=14.8\text{-}18.2$  MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma$ , excitation functions and  $\sigma(\theta)$  via isobaric analog resonances (IAR) in  $^{209}\text{Bi}$ . Proton spectra fitted by GASPAN analysis.  $^{209}\text{Bi}$ ; deduced s.p. width, total width, resonance energy for isobaric analog resonance  $j_{15/2}$ .  $^{207}\text{Pb}(\text{d}, \text{p})$ ,  $E=22$  MeV; analyzed proton spectra; deduced  $\sigma$ .  $^{208}\text{Pb}$ ; deduced levels, J,  $\pi$ , l-transfers, particle-hole configurations, spectroscopic factors. Comparison with shell-model calculations. JOUR PRVCA 82 014316
- 2010HE13 NUCLEAR REACTIONS  $^{208}\text{Pb}(\text{p}, \text{p}')$ ,  $E=14.82\text{-}18.08$  MeV; measured  $E_p$ ,  $I_p(\theta)$ ,  $\sigma(\theta)$ , excitation functions via isobaric analog resonances (IAR) in  $^{209}\text{Bi}$ .  $^{208}\text{Pb}$ ; deduced levels, J,  $\pi$ , configurations, spectroscopic factors. Comparison with shell-model calculations. JOUR ZAANE 44 233
- 2010JI07 NUCLEAR REACTIONS  $^{152,154}\text{Sm}$ ,  $^{184}\text{W}$ ,  $^{196}\text{Pt}$ ,  $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O}')$ ,  $E(\text{cm})=35\text{-}70$  MeV; measured  $\sigma(\theta=175^\circ)$ ; calculated  $\sigma$  using CC and single-channel formalisms; deduced nuclear potential diffuseness parameters. JOUR NUPAB 834 189c
- 2010JI11 NUCLEAR REACTIONS  $^{208}\text{Pb}(^9\text{Be}, ^9\text{Be})$ ,  $E=23.9\text{-}44.0$  MeV; measured particle-spectra,  $\sigma(E)$  for quasielastic scattering; deduced barrier distribution. Comparison with coupled-channel model calculations. JOUR PRVCA 82 027602
- 2010KA23 NUCLEAR REACTIONS  $^{90}\text{Zr}(^6\text{Li}, \text{X})$ ,  $^{165}\text{Ho}$ ,  $^{208}\text{Pb}(^7\text{Li}, \text{X})$ ,  $^{208}\text{Pb}(^9\text{Be}, \text{X})$ ,  $E$  not given; calculated fusion, breakup  $\sigma$ .  $^{208}\text{Pb}(^7\text{Li}, ^7\text{Li})$ ,  $E=27$  MeV; measured reaction products; deduced  $\sigma(\theta)$ , breakup polarization potential;  $^{208}\text{Pb}(^7\text{Li}, ^7\text{Li})$ ,  $E=33$  MeV; calculated  $\sigma(\theta)$ .  $^{208}\text{Pb}(^7\text{Li}, ^7\text{Li})$ ,  $E\approx 18\text{-}27$  MeV; deduced dipole polarizability; calculated  $\sigma(\theta=\text{backward})$ . Discussed reaction mechanism features. JOUR NUPAB 834 155c
- 2010PAZZ NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{124}\text{Sn}$ ,  $^{208}\text{Pb}(\text{d}, \text{d}')$ ,  $E=3.5\text{-}7.3$  MeV; measured  $\sigma(\theta)$ . Tandem. CONF St.-Petersburg,P136,Pavlenko
- 2010SC11 NUCLEAR REACTIONS  $^{208}\text{Pb}(\gamma, \gamma')$ ,  $E=9\text{-}15$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma(\theta)$ , linear polarization, integrated cross sections.  $^{208}\text{Pb}$ ; deduced levels, J,  $\pi$ , widths, B(E1). Comparison with shell model and QRPA calculations. JOUR PRVCA 81 054315
- 2010SE03 NUCLEAR REACTIONS  $^{207,208}\text{Pb}, \text{Pb}(\text{n}, \gamma)$ ,  $E=20, 41, 74$  keV; measured neutron TOF,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . JOUR NIMAE 618 153

A=208 (*continued*)

- 2010SI15 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{17}\text{F}, ^{17}\text{F})$ , ( $^{17}\text{F}, ^{16}\text{O}$ ), E=86 MeV; measured E(fragment), I(fragment), Ep, Ip, p(fragment)-coin,  $\sigma$ ,  $\sigma(\theta)$ . DWBA analysis. Comparison with optical model, data and systematics. Secondary radioactive beam. JOUR ZAANE 44 63
- 2010YU02 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(^9\text{Be}, ^9\text{Be})$ , E=37-50 MeV; measured reaction products; deduced  $\sigma(\theta)$ , optical potential parameters. JOUR JPGPE 37 075108
- 2010ZE06 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{204,206,208}\text{Pb}$ (polarized p, p), E=295 MeV; measured proton spectra,  $\sigma(\theta)$  and analyzing powers; deduced neutron and proton densities, neutron skin thickness and rms radii using model-independent sum-of-Gaussians distributions. Comparison with relativistic impulse approximation (RIA) for  $^{58}\text{Ni}$  data and with RIA and Murdock and Horowitz (MH) model calculations for Pb nuclei. JOUR PRVCA 82 044611
- $^{208}\text{Bi}$  2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009VI09 RADIOACTIVITY  $^{211,212,212m,213,214,214m}\text{At}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 054609
- 2010TA22 NUCLEAR REACTIONS  $^{248}\text{Cm}(^{209}\text{Bi}, ^{210}\text{Bi})^{247}\text{Cm}$ , E=1450 MeV;  $^{250}\text{Cm}(^{209}\text{Bi}, ^{208}\text{Bi})^{249}\text{Cm}$ , E=1450 MeV;  $^{249}\text{Cf}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , E=1430 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{247,249}\text{Cm}$ ,  $^{249}\text{Cf}$ ; deduced levels, J,  $\pi$ , ( $g_K-g_R$ ) /  $Q_0$ , alignments, Nilsson configurations, and rotational bands.  $^{197}\text{Au}$ ,  $^{207}\text{Pb}$ ,  $^{208}\text{Bi}$ ,  $^{210}\text{Bi}$ ; measured  $E\gamma$ . Systematics of alignments for  $^{244}\text{Pu}$ ,  $^{246}\text{Cm}$ ,  $^{248}\text{Cf}$ ,  $^{250}\text{Fm}$  and  $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301
- 2010ZH22 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(p, n)$ , E=8-11 MeV; measured En, In; deduced nuclear level densities in  $^{208}\text{Bi}$ ,  $^{209}\text{Po}$ ,  $\sigma(\theta)$ . Hauser-Feshbach statistical theory. JOUR PANUE 73 1111
- $^{208}\text{At}$  2008TAZI NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured  $E\gamma$ ,  $I\gamma$ , A(particle) using melted thick target at ISOLDE facility;  $^{76,77,79,85,87,88,89,90}\text{Kr}$ ,  $^{111}\text{Cd}$ ,  $^{121,124,126}\text{I}$ ,  $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ ,  $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ ,  $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- $^{208}\text{Rn}$  2010KA29 NUCLEAR REACTIONS  $^{197}\text{Au}(^{16}\text{O}, \text{xn})^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr}$ , E=88, 94, 100 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, evaporation residue yields,  $T_{1/2}$  using INGA array.  $^{208}\text{Fr}$ ; deduced energy levels, J,  $\pi$ ,  $T_{1/2}$ , DCO ratios.  $^{204}\text{Po}$ ,  $^{206}\text{At}$ ,  $^{208}\text{Rn}$ ; deduced levels  $T_{1/2}$ . Comparison with other data. JOUR NUPAB 842 1

KEYNUMBERS AND KEYWORDS

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**A=208 (continued)**

- <sup>208</sup>Fr    2009PA49    NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010KA29    NUCLEAR REACTIONS <sup>197</sup>Au(<sup>16</sup>O, xn)<sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr, E=88, 94, 100 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, evaporation residue yields, T<sub>1/2</sub> using INGA array. <sup>208</sup>Fr; deduced energy levels, J,  $\pi$ , T<sub>1/2</sub>, DCO ratios. <sup>204</sup>Po, <sup>206</sup>At, <sup>208</sup>Rn; deduced levels T<sub>1/2</sub>. Comparison with other data. JOUR NUPAB 842 1

**A=209**

- <sup>209</sup>Au    2010AL24    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>209</sup>Tl    2009AL29    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>206</sup>Hg / <sup>208</sup>Hg / <sup>209</sup>Tl, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , delayed  $\gamma$ , (particle) $\gamma$ -coin, and half-lives using RISING array at GSI facility. <sup>208</sup>Hg, <sup>209</sup>Tl; deduced levels, J,  $\pi$ , isomers, and B(E2). Systematics of energies of first 2+ and 4+ states in even-even nuclei with Z=74-90, and N=112-138. Comparison with shell-model calculations. JOUR PRVCA 80 061302
- <sup>209</sup>Pb    2009AL32    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2010C002    NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010SE03    NUCLEAR REACTIONS <sup>207,208</sup>Pb, Pb(n,  $\gamma$ ), E=20, 41, 74 keV; measured neutron TOF, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . JOUR NIMAE 618 153



## A=209 (continued)

- <sup>209</sup>Bi 2008G0ZT NUCLEAR REACTIONS <sup>208</sup>Pb(p, p'), E=11-18 MeV; measured reaction products; <sup>209</sup>Bi; deduced isobaric analog resonance states,  $\sigma$ , configuration mixing. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P547,Gomez
- 2009AL32 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009HEZW NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ ,  $\gamma'$ ), E=11-30 MeV; measured E $\gamma$ , I $\gamma$ ( $\theta$ ) using polarized  $\gamma$ ; deduced yields, asymmetry, IVGDR. REPT TUNL-XLVIII,P95,Henshaw
- 2009TOZX NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>31</sup>Cl, <sup>30</sup>S), E not given; measured E(particle),  $\theta$ (particle), Ep, Ip( $\theta$ ), E $\gamma$ , I $\gamma$ , (particle) $\theta$ -coin. Analysis in progress. REPT RIKEN 2008 Annual,P11,Togano
- 2009VI09 RADIOACTIVITY <sup>211,212,212m,213,214,214m</sup>At( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 80 054609
- 2010HE08 NUCLEAR REACTIONS <sup>208</sup>Pb(p, p'), E=14.8-18.2 MeV; measured Ep, Ip,  $\sigma$ , excitation functions and  $\sigma$ ( $\theta$ ) via isobaric analog resonances (IAR) in <sup>209</sup>Bi. Proton spectra fitted by GASPAN analysis. <sup>209</sup>Bi; deduced s.p. width, total width, resonance energy for isobaric analog resonance j<sub>15/2</sub>. <sup>207</sup>Pb(d, p), E=22 MeV; analyzed proton spectra; deduced  $\sigma$ . <sup>208</sup>Pb; deduced levels, J,  $\pi$ , l-transfers, particle-hole configurations, spectroscopic factors. Comparison with shell-model calculations. JOUR PRVCA 82 014316
- 2010SA19 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>6</sup>Li,  $\alpha$ ), (<sup>6</sup>Li, d), E=36, 40 MeV; measured E $\alpha$ , I $\alpha$ ( $\theta$ ), Ed, Id( $\theta$ ), d $\alpha$ -coin; deduced  $\sigma$ ( $\theta$ ). <sup>209</sup>Bi(<sup>6</sup>Li, <sup>6</sup>Li), E=36, 40 MeV; measured  $\sigma$ ( $\theta$ ). Comparison with CDCC calculations. Sequential breakup via resonant state. JOUR NUPAB 834 186c
- 2010SI15 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>17</sup>F, <sup>17</sup>F), (<sup>17</sup>F, <sup>16</sup>O), E=86 MeV; measured E(fragment), I(fragment), Ep, Ip, p(fragment)-coin,  $\sigma$ ,  $\sigma$ ( $\theta$ ). DWBA analysis. Comparison with optical model, data and systematics. Secondary radioactive beam. JOUR ZAANE 44 63
- 2010YU02 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>9</sup>Be, <sup>9</sup>Be), E=37-50 MeV; measured reaction products; deduced  $\sigma$ ( $\theta$ ), optical potential parameters. JOUR JPGPE 37 075108
- 2010ZH34 NUCLEAR REACTIONS <sup>209</sup>Bi(n, n), (n, n')E=37 MeV, [neutrons produced in <sup>3</sup>H(d, n)]; measured neutron spectra, cross sections,  $\sigma$ ( $\theta$ ), TOF method. Optical model analysis of  $\sigma$ ( $\theta$ ) data. Optical-model (OM) + DWBA calculations with weak particle-core coupling for computing (n, n) and (n, n') cross sections. JOUR PRVCA 82 024601
- <sup>209</sup>Po 2010ZH22 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(p, n), E=8-11 MeV; measured En, In; deduced nuclear level densities in <sup>208</sup>Bi, <sup>209</sup>Po,  $\sigma$ ( $\theta$ ). Hauser-Feshbach statistical theory. JOUR PANUE 73 1111

KEYNUMBERS AND KEYWORDS

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**A=209 (continued)**

- <sup>209</sup>At      2008TAZI      NUCLEAR REACTIONS Pb(p, x), E=1, 1.4 GeV; Bi(p, x), E=1, 1.4 GeV; measured E $\gamma$ , I $\gamma$ , A(particle) using melted thick target at ISOLDE facility; <sup>76,77,79,85,87,88,89,90</sup>Kr, <sup>111</sup>Cd, <sup>121,124,126</sup>I, <sup>120,121,122,123,125,127,129,131,133</sup>Xe, <sup>184,186,188,190,192,193,195,197,203,205,206</sup>Hg, <sup>204,205,206,207,208,209,210</sup>At; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069
- <sup>209</sup>Rn      2010WI07      RADIOACTIVITY <sup>21</sup>Na, <sup>213</sup>Ra(EC), <sup>225</sup>Ra( $\beta^-$ ), <sup>213</sup>Ra( $\alpha$ ); measured recoiling ion in coincidence with  $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163
- <sup>209</sup>Fr      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010KA29      NUCLEAR REACTIONS <sup>197</sup>Au(<sup>16</sup>O, xn)<sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr, E=88, 94, 100 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, evaporation residue yields, T<sub>1/2</sub> using INGA array. <sup>208</sup>Fr; deduced energy levels, J,  $\pi$ , T<sub>1/2</sub>, DCO ratios. <sup>204</sup>Po, <sup>206</sup>At, <sup>208</sup>Rn; deduced levels T<sub>1/2</sub>. Comparison with other data. JOUR NUPAB 842 1

**A=210**

- <sup>210</sup>Au      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>210</sup>Hg      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

KEYNUMBERS AND KEYWORDS

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A=210 (*continued*)

$^{210}\text{Tl}$	2010AL24	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
$^{210}\text{Pb}$	2009AL32	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ $^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
	2009M037	RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612
$^{210}\text{Bi}$	2008BIZV	NUCLEAR REACTIONS $^{209}\text{Bi}(n, \gamma)$ , E=low; measured $E\alpha$ , $I\alpha$ ; deduced $\sigma$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P1333
	2008BOZM	NUCLEAR REACTIONS $^{209}\text{Bi}(n, \gamma)$ , E $\approx$ 0.8-7 keV; measured $E\gamma$ , $I\gamma$ ; deduced $^{210g}\text{Bi} / ^{210m}\text{Bi}$ branching ratio around neutron resonances. Compared to other data. CONF Nice (Nucl Data for Sci and Technol) Proc,P563
	2008DOZU	NUCLEAR REACTIONS $^{204,206,207}\text{Pb}$ , $^{209}\text{Bi}(n, \gamma)$ , E $\approx$ 4-50 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ ; s-process abundances. Compared to older data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1311
	2009AL32	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ $^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
	2009VI09	RADIOACTIVITY $^{211,212,212m,213,214,214m}\text{At}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054609
	2010C002	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , $\text{Pb}$ , $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643
	2010LUZY	RADIOACTIVITY $^{210}\text{Bi}(\beta^-)$ [from $^{210}\text{Pb}(\beta^-)$ ]; measured $\beta^-$ spectrum. Deduced $\beta^-$ spectrum shape factor. CONF St.-Petersburg,P97,Lubashevskiy

KEYNUMBERS AND KEYWORDS

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**A=210 (continued)**

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| 2010TA22          | NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, ^{210}\text{Bi})^{247}\text{Cm}$ , E=1450 MeV; $^{250}\text{Cm}(^{209}\text{Bi}, ^{208}\text{Bi})^{249}\text{Cm}$ , E=1450 MeV; $^{249}\text{Cf}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , E=1430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ ; deduced levels, J, $\pi$ , ( $g_K-g_R$ ) / $Q_0$ , alignments, Nilsson configurations, and rotational bands. $^{197}\text{Au}$ , $^{207}\text{Pb}$ , $^{208}\text{Bi}$ , $^{210}\text{Bi}$ ; measured $E\gamma$ . Systematics of alignments for $^{244}\text{Pu}$ , $^{246}\text{Cm}$ , $^{248}\text{Cf}$ , $^{250}\text{Fm}$ and $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301  |
| $^{210}\text{Po}$ | 2008BIZV RADIOACTIVITY $^{210}\text{Po}(\alpha)$ [from $^{209}\text{Bi}(n, \gamma)$ ], $^{211}\text{Po}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced abundance contributions for the s-process at $kT=30$ keV. CONF Nice (Nucl Data for Sci and Technol) Proc,P1333   |
|                   | 2008BOZJ RADIOACTIVITY $^{210}\text{Po}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced differential $\gamma$ -emission probabilities. Comparison with model calculations of bremsstrahlung. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P523,Boie  |
|                   | 2010LUZY RADIOACTIVITY $^{210}\text{Bi}(\beta^-)$ [from $^{210}\text{Pb}(\beta^-)$ ]; measured $\beta^-$ spectrum. Deduced $\beta^-$ spectrum shape factor. CONF St.-Petersburg,P97,Lubashevskiy   |
| $^{210}\text{At}$ | 2008TAZI NUCLEAR REACTIONS $\text{Pb}(p, x)$ , E=1, 1.4 GeV; $\text{Bi}(p, x)$ , E=1, 1.4 GeV; measured $E\gamma$ , $I\gamma$ , A(particle) using melted thick target at ISOLDE facility; $^{76,77,79,85,87,88,89,90}\text{Kr}$ , $^{111}\text{Cd}$ , $^{121,124,126}\text{I}$ , $^{120,121,122,123,125,127,129,131,133}\text{Xe}$ , $^{184,186,188,190,192,193,195,197,203,205,206}\text{Hg}$ , $^{204,205,206,207,208,209,210}\text{At}$ ; deduced thick target yields temperature dependence 250-600 centigrade; calculated using FLUKA, MCNPX with INCL4 / ABLA. CONF Nice (Nucl Data for Sci and Technol) Proc,P1069  |
| $^{210}\text{Rn}$ | 2010PR05 NUCLEAR REACTIONS $^{186}\text{W}(^{24}\text{Mg}, X)^{210}\text{Rn}$ , E=111-125 MeV; $^{194}\text{Pt}(^{16}\text{O}, X)^{210}\text{Rn}$ , E=75-102 MeV; measured fission fragment mass ratio distributions and mass ratio widths. Comparison with coupled-channel calculations. JOUR PRVCA 81 054608   |
| $^{210}\text{Fr}$ | 2009PA49 NUCLEAR REACTIONS $^{238}\text{U}(p, X)^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010KA29 NUCLEAR REACTIONS $^{197}\text{Au}(^{16}\text{O}, xn)^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr}$ , E=88, 94, 100 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, evaporation residue yields, $T_{1/2}$ using INGA array. $^{208}\text{Fr}$ ; deduced energy levels, J, $\pi$ , $T_{1/2}$ , DCO ratios. $^{204}\text{Po}$ , $^{206}\text{At}$ , $^{208}\text{Rn}$ ; deduced levels $T_{1/2}$ . Comparison with other data. JOUR NUPAB 842 1   |

## A=211

- <sup>211</sup>Hg 2010AL24 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>211</sup>Tl 2010AL24 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>211</sup>Pb 2009M037 RADIOACTIVITY <sup>231</sup>Pa, <sup>230</sup>U, <sup>226,227</sup>Th, <sup>222,223</sup>Ra, <sup>218,219</sup>Rn, <sup>214,215</sup>Po, <sup>211</sup>Bi( $\alpha$ ); measured  $E\alpha$ . JOUR PRVCA 80 054612
- <sup>211</sup>Bi 2009AL32 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2009M037 RADIOACTIVITY <sup>231</sup>Pa, <sup>230</sup>U, <sup>226,227</sup>Th, <sup>222,223</sup>Ra, <sup>218,219</sup>Rn, <sup>214,215</sup>Po, <sup>211</sup>Bi( $\alpha$ ); measured  $E\alpha$ . JOUR PRVCA 80 054612
- <sup>211</sup>Po 2008BIZV RADIOACTIVITY <sup>210</sup>Po( $\alpha$ )[from <sup>209</sup>Bi(n,  $\gamma$ )], <sup>211</sup>Po( $\alpha$ ); measured  $E\alpha$ ,  $I\alpha$ ; deduced abundance contributions for the s-process at kT=30 keV. CONF Nice (Nucl Data for Sci and Technol) Proc,P1333
- 2010HE12 NUCLEAR REACTIONS <sup>207</sup>Pb(<sup>64</sup>Ni, X)<sup>211</sup>Po / <sup>212</sup>At / <sup>213</sup>Rn / <sup>213</sup>Fr / <sup>214</sup>Ra, E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured  $\sigma(\theta)$ , E(residue) using the SHIP facility. JOUR ZAANE 43 181
- 2010HE14 NUCLEAR REACTIONS <sup>207</sup>Pb(<sup>64</sup>Ni, X)<sup>211</sup>Po / <sup>212</sup>At / <sup>213</sup>Rn / <sup>213</sup>Fr / <sup>214</sup>Ra, E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured  $E\alpha$ ,  $I\alpha$ ,  $\sigma(\theta)$ , yields, fragment energy spectra (TKE) using SHIP velocity filter. <sup>238</sup>U(<sup>238</sup>U, X), E=6.09, 6.49, 6.91, 7.10, 7.35 MeV / nucleon; measured  $\sigma(\theta)$ , mass distributions, yields, fragment energy spectra (TKE) using VAMOS spectrometer; deduced interaction times using diffusion model. JOUR NUPAB 834 362c
- 2010SA19 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>6</sup>Li,  $\alpha$ ), (<sup>6</sup>Li, d), E=36, 40 MeV; measured  $E\alpha$ ,  $I\alpha(\theta)$ , Ed, Id( $\theta$ ), d $\alpha$ -coin; deduced  $\sigma(\theta)$ . <sup>209</sup>Bi(<sup>6</sup>Li, <sup>6</sup>Li), E=36, 40 MeV; measured  $\sigma(\theta)$ . Comparison with CDCC calculations. Sequential breakup via resonant state. JOUR NUPAB 834 186c

KEYNUMBERS AND KEYWORDS

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**A=211 (continued)**

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| $^{211}\text{At}$ | 2009VI09 | NUCLEAR REACTIONS $^{208}\text{Pb}(^9\text{Li}, \text{nx})^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} / ^{214}\text{At}$ , $E(\text{cm})=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89$ MeV; $^{209}\text{Bi}(^7\text{Li}, \text{nx})^{212}\text{Rn} / ^{213}\text{Rn}$ , $E(\text{cm})=34.95$ MeV; measured nuclidic yields, and fusion $\sigma$ using ISAC2 facility at TRIUMF. Comparison with HVP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609   |
|                   | 2009VI09 | RADIOACTIVITY $^{211,212,212m,213,214,214m}\text{At}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054609   |
| $^{211}\text{Rn}$ | 2010DA04 | NUCLEAR REACTIONS $^{208}\text{Pb}, ^{209}\text{Bi}(^9\text{Be}, \text{xn})^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{214}\text{Rn} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{215}\text{Fr} / ^{216}\text{Fr}$ , $E=44.0, 50.0, 60.0$ MeV; measured $\alpha$ and fragment spectra; deduced complete fusion $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608   |
| $^{211}\text{Fr}$ | 2009K035 | ATOMIC MASSES $^{211,212,213}\text{Fr}, ^{211}\text{Ra}$ ; measured masses using Penning trap at ISOLDE. JOUR ZAANE 42 351  |
|                   | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , $E=1$ GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{211}\text{Ra}$ | 2009K035 | ATOMIC MASSES $^{211,212,213}\text{Fr}, ^{211}\text{Ra}$ ; measured masses using Penning trap at ISOLDE. JOUR ZAANE 42 351  |

**A=212**

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| $^{212}\text{Hg}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , $E=1$ GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}, ^{207,208,209,210}\text{Au}, ^{210,211,212,213,214,215,216}\text{Hg}, ^{210,211,212,213,214,215,216,217}\text{Tl}, ^{214,215,216,217,218,219,220}\text{Pb}, ^{217,218,219,220,221,222,223,224}\text{Bi}, ^{220,221,222,223,224,225,226,227}\text{Po}, ^{222,223,224,225,226,227,228,229}\text{At}, ^{225,226,227,228,229,230,231}\text{Rn}, ^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{212}\text{Tl}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , $E=1$ GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}, ^{207,208,209,210}\text{Au}, ^{210,211,212,213,214,215,216}\text{Hg}, ^{210,211,212,213,214,215,216,217}\text{Tl}, ^{214,215,216,217,218,219,220}\text{Pb}, ^{217,218,219,220,221,222,223,224}\text{Bi}, ^{220,221,222,223,224,225,226,227}\text{Po}, ^{222,223,224,225,226,227,228,229}\text{At}, ^{225,226,227,228,229,230,231}\text{Rn}, ^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |

KEYNUMBERS AND KEYWORDS

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A=212 (*continued*)

$^{212}\text{Bi}$	2009AL32	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
$^{212}\text{Po}$	2010AS01	NUCLEAR REACTIONS $^{208}\text{Pb}(^{18}\text{O}, ^{14}\text{C})$ , E=85 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $^{212}\text{Po}$ level scheme, yrast state, lifetimes, B(E1). Doppler-shift attenuation method. JOUR PRLTA 104 042701
$^{212}\text{At}$	2009VI09	NUCLEAR REACTIONS $^{208}\text{Pb}(^9\text{Li}, \text{nx})^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} / ^{214}\text{At}$ , E(cm)=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89 MeV; $^{209}\text{Bi}(^7\text{Li}, \text{nx})^{212}\text{Rn} / ^{213}\text{Rn}$ , E(cm)=34.95 MeV; measured nuclidic yields, and fusion $\sigma$ using ISAC2 facility at TRIUMF. Comparison with HVAP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609
	2009VI09	RADIOACTIVITY $^{211,212,212m,213,214,214m}\text{At}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054609
	2010HE12	NUCLEAR REACTIONS $^{207}\text{Pb}(^{64}\text{Ni}, \text{X})^{211}\text{Po} / ^{212}\text{At} / ^{213}\text{Rn} / ^{213}\text{Fr} / ^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured $\sigma(\theta)$ , E(residue) using the SHIP facility. JOUR ZAANE 43 181
	2010HE14	NUCLEAR REACTIONS $^{207}\text{Pb}(^{64}\text{Ni}, \text{X})^{211}\text{Po} / ^{212}\text{At} / ^{213}\text{Rn} / ^{213}\text{Fr} / ^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured $E\alpha$ , $I\alpha$ , $\sigma(\theta)$ , yields, fragment energy spectra (TKE) using SHIP velocity filter. $^{238}\text{U}(^{238}\text{U}, \text{X})$ , E=6.09, 6.49, 6.91, 7.10, 7.35 MeV / nucleon; measured $\sigma(\theta)$ , mass distributions, yields, fragment energy spectra (TKE) using VAMOS spectrometer; deduced interaction times using diffusion model. JOUR NUPAB 834 362c
$^{212}\text{Rn}$	2009DR12	NUCLEAR REACTIONS $^{204}\text{Hg}(^{13}\text{C}, 5\text{n})$ , E=89 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , and half-lives using CAESAR array. $^{212}\text{Rn}$ ; deduced levels, J, $\pi$ , multipolarities, transition strengths, and configurations. Comparison with semi-empirical shell model approach and deformed independent particle model (DIPM) calculations. JOUR PRVCA 80 054320
	2009VI09	NUCLEAR REACTIONS $^{208}\text{Pb}(^9\text{Li}, \text{nx})^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} / ^{214}\text{At}$ , E(cm)=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89 MeV; $^{209}\text{Bi}(^7\text{Li}, \text{nx})^{212}\text{Rn} / ^{213}\text{Rn}$ , E(cm)=34.95 MeV; measured nuclidic yields, and fusion $\sigma$ using ISAC2 facility at TRIUMF. Comparison with HVAP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609
	2010DA04	NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^9\text{Be}, \text{xn})^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{214}\text{Rn} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{215}\text{Fr} / ^{216}\text{Fr}$ , E=44.0, 50.0, 60.0 MeV; measured $\alpha$ and fragment spectra; deduced complete fusion $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608
$^{212}\text{Fr}$	2009K035	ATOMIC MASSES $^{211,212,213}\text{Fr}$ , $^{211}\text{Ra}$ ; measured masses using Penning trap at ISOLDE. JOUR ZAANE 42 351

**A=212 (continued)**

- 2009PA49 NUCLEAR REACTIONS  $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010DA04 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(\text{}^9\text{Be}, \text{xn})^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{214}\text{Rn} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{215}\text{Fr} / ^{216}\text{Fr}$ , E=44.0, 50.0, 60.0 MeV; measured  $\alpha$  and fragment spectra; deduced complete fusion  $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608

**A=213**

- $^{213}\text{Hg}$  2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- $^{213}\text{Tl}$  2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- 2010CH19 NUCLEAR REACTIONS  $\text{Be}(\text{}^{238}\text{U}, \text{X})^{236}\text{Ac} / ^{224}\text{At} / ^{222}\text{Po} / ^{221}\text{Po} / ^{213}\text{Tl}$ , E=670 MeV / nucleon; measured revolution frequency of the cooled fragments; deduced  $T_{1/2}$ . Comparison with theoretical models, Darmstadt storage-cooler ring ESR. JOUR PYLBB 691 234
- 2010CH19 ATOMIC MASSES  $^{236}\text{Ac}$ ,  $^{224}\text{At}$ ,  $^{222}\text{Po}$ ,  $^{221}\text{Po}$ ,  $^{213}\text{Tl}$ ; measured revolution frequency of the cooled fragments; deduced atomic masses. JOUR PYLBB 691 234
- $^{213}\text{Bi}$  2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485



KEYNUMBERS AND KEYWORDS

A=213 (continued)

- <sup>213</sup>At 2009VI09 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>9</sup>Li, nx)<sup>211</sup>At / <sup>212</sup>At / <sup>213</sup>At / <sup>214</sup>At, E(cm)=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89 MeV; <sup>209</sup>Bi(<sup>7</sup>Li, nx)<sup>212</sup>Rn / <sup>213</sup>Rn, E(cm)=34.95 MeV; measured nuclidic yields, and fusion  $\sigma$  using ISAC2 facility at TRIUMF. Comparison with HVAP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609
- 2009VI09 RADIOACTIVITY <sup>211,212,212m,213,214,214m</sup>At( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 80 054609
- 2010SA19 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>6</sup>Li,  $\alpha$ ), (<sup>6</sup>Li, d), E=36, 40 MeV; measured E $\alpha$ , I $\alpha$ ( $\theta$ ), Ed, Id( $\theta$ ), d $\alpha$ -coin; deduced  $\sigma$ ( $\theta$ ). <sup>209</sup>Bi(<sup>6</sup>Li, <sup>6</sup>Li), E=36, 40 MeV; measured  $\sigma$ ( $\theta$ ). Comparison with CDCC calculations. Sequential breakup via resonant state. JOUR NUPAB 834 186c
- <sup>213</sup>Rn 2009VI09 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>9</sup>Li, nx)<sup>211</sup>At / <sup>212</sup>At / <sup>213</sup>At / <sup>214</sup>At, E(cm)=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89 MeV; <sup>209</sup>Bi(<sup>7</sup>Li, nx)<sup>212</sup>Rn / <sup>213</sup>Rn, E(cm)=34.95 MeV; measured nuclidic yields, and fusion  $\sigma$  using ISAC2 facility at TRIUMF. Comparison with HVAP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609
- 2010DA04 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>9</sup>Be, xn)<sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>214</sup>Rn / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>215</sup>Fr / <sup>216</sup>Fr, E=44.0, 50.0, 60.0 MeV; measured  $\alpha$  and fragment spectra; deduced complete fusion  $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608
- 2010HE12 NUCLEAR REACTIONS <sup>207</sup>Pb(<sup>64</sup>Ni, X)<sup>211</sup>Po / <sup>212</sup>At / <sup>213</sup>Rn / <sup>213</sup>Fr / <sup>214</sup>Ra, E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured  $\sigma$ ( $\theta$ ), E(residue) using the SHIP facility. JOUR ZAANE 43 181
- 2010HE14 NUCLEAR REACTIONS <sup>207</sup>Pb(<sup>64</sup>Ni, X)<sup>211</sup>Po / <sup>212</sup>At / <sup>213</sup>Rn / <sup>213</sup>Fr / <sup>214</sup>Ra, E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured E $\alpha$ , I $\alpha$ ,  $\sigma$ ( $\theta$ ), yields, fragment energy spectra (TKE) using SHIP velocity filter. <sup>238</sup>U(<sup>238</sup>U, X), E=6.09, 6.49, 6.91, 7.10, 7.35 MeV / nucleon; measured  $\sigma$ ( $\theta$ ), mass distributions, yields, fragment energy spectra (TKE) using VAMOS spectrometer; deduced interaction times using diffusion model. JOUR NUPAB 834 362c
- <sup>213</sup>Fr 2009K035 ATOMIC MASSES <sup>211,212,213</sup>Fr, <sup>211</sup>Ra; measured masses using Penning trap at ISOLDE. JOUR ZAANE 42 351
- 2009PA49 NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- 2010DA04 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>9</sup>Be, xn)<sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>214</sup>Rn / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>215</sup>Fr / <sup>216</sup>Fr, E=44.0, 50.0, 60.0 MeV; measured  $\alpha$  and fragment spectra; deduced complete fusion  $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608

KEYNUMBERS AND KEYWORDS

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**A=213 (continued)**

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| 2010HE12          |          | NUCLEAR REACTIONS $^{207}\text{Pb}(^{64}\text{Ni}, \text{X})^{211}\text{Po} / ^{212}\text{At} / ^{213}\text{Rn} / ^{213}\text{Fr} / ^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured $\sigma(\theta)$ , E(residue) using the SHIP facility. JOUR ZAANE 43 181   |
| 2010HE14          |          | NUCLEAR REACTIONS $^{207}\text{Pb}(^{64}\text{Ni}, \text{X})^{211}\text{Po} / ^{212}\text{At} / ^{213}\text{Rn} / ^{213}\text{Fr} / ^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured $E\alpha$ , $I\alpha$ , $\sigma(\theta)$ , yields, fragment energy spectra (TKE) using SHIP velocity filter. $^{238}\text{U}(^{238}\text{U}, \text{X})$ , E=6.09, 6.49, 6.91, 7.10, 7.35 MeV / nucleon; measured $\sigma(\theta)$ , mass distributions, yields, fragment energy spectra (TKE) using VAMOS spectrometer; deduced interaction times using diffusion model. JOUR NUPAB 834 362c |
| 2010WI07          |          | RADIOACTIVITY $^{21}\text{Na}$ , $^{213}\text{Ra}(\text{EC})$ , $^{225}\text{Ra}(\beta^-)$ , $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163  |
| $^{213}\text{Ra}$ | 2010WI07 | RADIOACTIVITY $^{21}\text{Na}$ , $^{213}\text{Ra}(\text{EC})$ , $^{225}\text{Ra}(\beta^-)$ , $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163  |

**A=214**

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| $^{214}\text{Hg}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602   |
| $^{214}\text{Tl}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602   |
| $^{214}\text{Pb}$ | 2009AL32 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485 |

KEYNUMBERS AND KEYWORDS

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A=214 (continued)

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|---------------------|---|
| 2010AL24            | NUCLEAR REACTIONS ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. ${}_{203,204,205}\text{Pt}$ , ${}_{207,208,209,210}\text{Au}$ , ${}_{210,211,212,213,214,215,216}\text{Hg}$ , ${}_{210,211,212,213,214,215,216,217}\text{Tl}$ , ${}_{214,215,216,217,218,219,220}\text{Pb}$ , ${}_{217,218,219,220,221,222,223,224}\text{Bi}$ , ${}_{220,221,222,223,224,225,226,227}\text{Po}$ , ${}_{222,223,224,225,226,227,228,229}\text{At}$ , ${}_{225,226,227,228,229,230,231}\text{Rn}$ , ${}_{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| ${}^{214}\text{Bi}$ | 2009AL32 NUCLEAR REACTIONS ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ ${}^{196}\text{Pb} / {}^{197}\text{Pb} / {}^{198}\text{Pb} / {}^{199}\text{Pb} / {}^{200}\text{Pb} / {}^{201}\text{Pb} / {}^{202}\text{Pb} / {}^{203}\text{Pb} / {}^{204}\text{Pb} / {}^{205}\text{Pb} / {}^{206}\text{Pb} / {}^{207}\text{Pb} / {}^{208}\text{Pb} / {}^{209}\text{Pb} / {}^{210}\text{Pb} / {}^{214}\text{Pb} / {}^{215}\text{Pb} / {}^{216}\text{Pb} / {}^{217}\text{Pb} / {}^{218}\text{Pb} / {}^{219}\text{Pb} / {}^{199}\text{Bi} / {}^{200}\text{Bi} / {}^{201}\text{Bi} / {}^{202}\text{Bi} / {}^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi} / {}^{207}\text{Bi} / {}^{208}\text{Bi} / {}^{209}\text{Bi} / {}^{210}\text{Bi} / {}^{211}\text{Bi} / {}^{212}\text{Bi} / {}^{213}\text{Bi} / {}^{214}\text{Bi} / {}^{218}\text{Bi} / {}^{219}\text{Bi} / {}^{220}\text{Bi} / {}^{221}\text{Bi} / {}^{222}\text{Bi} / {}^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485  |
| ${}^{214}\text{Po}$ | 2009M037 RADIOACTIVITY ${}^{231}\text{Pa}$ , ${}^{230}\text{U}$ , ${}^{226,227}\text{Th}$ , ${}^{222,223}\text{Ra}$ , ${}^{218,219}\text{Rn}$ , ${}^{214,215}\text{Po}$ , ${}^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612   |
| ${}^{214}\text{At}$ | 2009VI09 NUCLEAR REACTIONS ${}^{208}\text{Pb}({}^9\text{Li}, \text{nx})$ ${}^{211}\text{At} / {}^{212}\text{At} / {}^{213}\text{At} / {}^{214}\text{At}$ , E(cm)=24.84, 27.35, 29.86, 32.36, 34.87, 37.37, 39.88, 42.38, 44.89 MeV; ${}^{209}\text{Bi}({}^7\text{Li}, \text{nx})$ ${}^{212}\text{Rn} / {}^{213}\text{Rn}$ , E(cm)=34.95 MeV; measured nuclidic yields, and fusion $\sigma$ using ISAC2 facility at TRIUMF. Comparison with HVAP statistical model code and coupled-channel calculations. JOUR PRVCA 80 054609   |
|                     | 2009VI09 RADIOACTIVITY ${}^{211,212,212m,213,214,214m}\text{At}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054609  |
| ${}^{214}\text{Rn}$ | 2010DA04 NUCLEAR REACTIONS ${}^{208}\text{Pb}$ , ${}^{209}\text{Bi}({}^9\text{Be}, \text{xn})$ ${}^{211}\text{Rn} / {}^{212}\text{Rn} / {}^{213}\text{Rn} / {}^{214}\text{Rn} / {}^{212}\text{Fr} / {}^{213}\text{Fr} / {}^{214}\text{Fr} / {}^{215}\text{Fr} / {}^{216}\text{Fr}$ , E=44.0, 50.0, 60.0 MeV; measured $\alpha$ and fragment spectra; deduced complete fusion $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608  |
| ${}^{214}\text{Fr}$ | 2009PA49 NUCLEAR REACTIONS ${}^{238}\text{U}(\text{p}, \text{X})$ ${}^{122}\text{Cs} / {}^{123}\text{Cs} / {}^{124}\text{Cs} / {}^{125}\text{Cs} / {}^{126}\text{Cs} / {}^{127}\text{Cs} / {}^{128}\text{Cs} / {}^{129}\text{Cs} / {}^{130}\text{Cs} / {}^{132}\text{Cs} / {}^{138}\text{Cs} / {}^{139}\text{Cs} / {}^{140}\text{Cs} / {}^{141}\text{Cs} / {}^{142}\text{Cs} / {}^{143}\text{Cs} / {}^{144}\text{Cs} / {}^{145}\text{Cs} / {}^{146}\text{Cs} / {}^{147}\text{Cs} / {}^{148}\text{Cs} / {}^{202}\text{Fr} / {}^{203}\text{Fr} / {}^{204}\text{Fr} / {}^{205}\text{Fr} / {}^{206}\text{Fr} / {}^{207}\text{Fr} / {}^{208}\text{Fr} / {}^{209}\text{Fr} / {}^{210}\text{Fr} / {}^{211}\text{Fr} / {}^{212}\text{Fr} / {}^{213}\text{Fr} / {}^{214}\text{Fr} / {}^{218}\text{Fr} / {}^{219}\text{Fr} / {}^{220}\text{Fr} / {}^{221}\text{Fr} / {}^{222}\text{Fr} / {}^{223}\text{Fr} / {}^{224}\text{Fr} / {}^{225}\text{Fr} / {}^{226}\text{Fr} / {}^{227}\text{Fr} / {}^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                     | 2010DA04 NUCLEAR REACTIONS ${}^{208}\text{Pb}$ , ${}^{209}\text{Bi}({}^9\text{Be}, \text{xn})$ ${}^{211}\text{Rn} / {}^{212}\text{Rn} / {}^{213}\text{Rn} / {}^{214}\text{Rn} / {}^{212}\text{Fr} / {}^{213}\text{Fr} / {}^{214}\text{Fr} / {}^{215}\text{Fr} / {}^{216}\text{Fr}$ , E=44.0, 50.0, 60.0 MeV; measured $\alpha$ and fragment spectra; deduced complete fusion $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608  |
| ${}^{214}\text{Ra}$ | 2010HE12 NUCLEAR REACTIONS ${}^{207}\text{Pb}({}^{64}\text{Ni}, \text{X})$ ${}^{211}\text{Po} / {}^{212}\text{At} / {}^{213}\text{Rn} / {}^{213}\text{Fr} / {}^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured $\sigma(\theta)$ , E(residue) using the SHIP facility. JOUR ZAANE 43 181  |

A=214 (continued)

2010HE14 NUCLEAR REACTIONS  $^{207}\text{Pb}(^{64}\text{Ni}, \text{X})^{211}\text{Po}$  /  $^{212}\text{At}$  /  $^{213}\text{Rn}$  /  $^{213}\text{Fr}$  /  $^{214}\text{Ra}$ , E=4.80, 5.00, 5.20, 5.40, 5.53, 5.92 MeV / nucleon; measured  $E\alpha$ ,  $I\alpha$ ,  $\sigma(\theta)$ , yields, fragment energy spectra (TKE) using SHIP velocity filter.  $^{238}\text{U}(^{238}\text{U}, \text{X})$ , E=6.09, 6.49, 6.91, 7.10, 7.35 MeV / nucleon; measured  $\sigma(\theta)$ , mass distributions, yields, fragment energy spectra (TKE) using VAMOS spectrometer; deduced interaction times using diffusion model. JOUR NUPAB 834 362c

A=215

$^{215}\text{Hg}$  2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

$^{215}\text{Tl}$  2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

$^{215}\text{Pb}$  2009AL32 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb}$  /  $^{197}\text{Pb}$  /  $^{198}\text{Pb}$  /  $^{199}\text{Pb}$  /  $^{200}\text{Pb}$  /  $^{201}\text{Pb}$  /  $^{202}\text{Pb}$  /  $^{203}\text{Pb}$  /  $^{204}\text{Pb}$  /  $^{205}\text{Pb}$  /  $^{206}\text{Pb}$  /  $^{207}\text{Pb}$  /  $^{208}\text{Pb}$  /  $^{209}\text{Pb}$  /  $^{210}\text{Pb}$  /  $^{214}\text{Pb}$  /  $^{215}\text{Pb}$  /  $^{216}\text{Pb}$  /  $^{217}\text{Pb}$  /  $^{218}\text{Pb}$  /  $^{219}\text{Pb}$  /  $^{199}\text{Bi}$  /  $^{200}\text{Bi}$  /  $^{201}\text{Bi}$  /  $^{202}\text{Bi}$  /  $^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$  /  $^{207}\text{Bi}$  /  $^{208}\text{Bi}$  /  $^{209}\text{Bi}$  /  $^{210}\text{Bi}$  /  $^{211}\text{Bi}$  /  $^{212}\text{Bi}$  /  $^{213}\text{Bi}$  /  $^{214}\text{Bi}$  /  $^{218}\text{Bi}$  /  $^{219}\text{Bi}$  /  $^{220}\text{Bi}$  /  $^{221}\text{Bi}$  /  $^{222}\text{Bi}$  /  $^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

2010AL24 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

$^{215}\text{Po}$  2009M037 RADIOACTIVITY  $^{231}\text{Pa}$ ,  $^{230}\text{U}$ ,  $^{226,227}\text{Th}$ ,  $^{222,223}\text{Ra}$ ,  $^{218,219}\text{Rn}$ ,  $^{214,215}\text{Po}$ ,  $^{211}\text{Bi}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 054612

KEYNUMBERS AND KEYWORDS

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**A=215 (continued)**

<sup>215</sup>Fr      2010DA04      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>9</sup>Be, xn)<sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>214</sup>Rn / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>215</sup>Fr / <sup>216</sup>Fr, E=44.0, 50.0, 60.0 MeV; measured  $\alpha$  and fragment spectra; deduced complete fusion  $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608

**A=216**

<sup>216</sup>Hg      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

<sup>216</sup>Tl      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

<sup>216</sup>Pb      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

<sup>216</sup>Fr      2010DA04      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>9</sup>Be, xn)<sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>214</sup>Rn / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>215</sup>Fr / <sup>216</sup>Fr, E=44.0, 50.0, 60.0 MeV; measured  $\alpha$  and fragment spectra; deduced complete fusion  $\sigma$ . Discussed discrepancies in previous cross section data for similar reactions. JOUR PRVCA 81 024608

## A=217

- $^{217}\text{Tl}$       2010AL24      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- $^{217}\text{Pb}$       2009AL32      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$   $^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2010AL24      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- $^{217}\text{Bi}$       2010AL24      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  $^{203,204,205}\text{Pt}$ ,  $^{207,208,209,210}\text{Au}$ ,  $^{210,211,212,213,214,215,216}\text{Hg}$ ,  $^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  $^{214,215,216,217,218,219,220}\text{Pb}$ ,  $^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  $^{220,221,222,223,224,225,226,227}\text{Po}$ ,  $^{222,223,224,225,226,227,228,229}\text{At}$ ,  $^{225,226,227,228,229,230,231}\text{Rn}$ ,  $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

## A=218

- $^{218}\text{Pb}$       2009AL32      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})$   $^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

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**A=218 (continued)**

- 2010AL24 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  ${}^{203,204,205}\text{Pt}$ ,  ${}^{207,208,209,210}\text{Au}$ ,  ${}^{210,211,212,213,214,215,216}\text{Hg}$ ,  ${}^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  ${}^{214,215,216,217,218,219,220}\text{Pb}$ ,  ${}^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  ${}^{220,221,222,223,224,225,226,227}\text{Po}$ ,  ${}^{222,223,224,225,226,227,228,229}\text{At}$ ,  ${}^{225,226,227,228,229,230,231}\text{Rn}$ ,  ${}^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- ${}^{218}\text{Bi}$  2009AL32 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$   ${}^{196}\text{Pb} / {}^{197}\text{Pb} / {}^{198}\text{Pb} / {}^{199}\text{Pb} / {}^{200}\text{Pb} / {}^{201}\text{Pb} / {}^{202}\text{Pb} / {}^{203}\text{Pb} / {}^{204}\text{Pb} / {}^{205}\text{Pb} / {}^{206}\text{Pb} / {}^{207}\text{Pb} / {}^{208}\text{Pb} / {}^{209}\text{Pb} / {}^{210}\text{Pb} / {}^{214}\text{Pb} / {}^{215}\text{Pb} / {}^{216}\text{Pb} / {}^{217}\text{Pb} / {}^{218}\text{Pb} / {}^{219}\text{Pb} / {}^{199}\text{Bi} / {}^{200}\text{Bi} / {}^{201}\text{Bi} / {}^{202}\text{Bi} / {}^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi} / {}^{207}\text{Bi} / {}^{208}\text{Bi} / {}^{209}\text{Bi} / {}^{210}\text{Bi} / {}^{211}\text{Bi} / {}^{212}\text{Bi} / {}^{213}\text{Bi} / {}^{214}\text{Bi} / {}^{218}\text{Bi} / {}^{219}\text{Bi} / {}^{220}\text{Bi} / {}^{221}\text{Bi} / {}^{222}\text{Bi} / {}^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2010AL24 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  ${}^{203,204,205}\text{Pt}$ ,  ${}^{207,208,209,210}\text{Au}$ ,  ${}^{210,211,212,213,214,215,216}\text{Hg}$ ,  ${}^{210,211,212,213,214,215,216,217}\text{Tl}$ ,  ${}^{214,215,216,217,218,219,220}\text{Pb}$ ,  ${}^{217,218,219,220,221,222,223,224}\text{Bi}$ ,  ${}^{220,221,222,223,224,225,226,227}\text{Po}$ ,  ${}^{222,223,224,225,226,227,228,229}\text{At}$ ,  ${}^{225,226,227,228,229,230,231}\text{Rn}$ ,  ${}^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- ${}^{218}\text{Rn}$  2009M037 RADIOACTIVITY  ${}^{231}\text{Pa}$ ,  ${}^{230}\text{U}$ ,  ${}^{226,227}\text{Th}$ ,  ${}^{222,223}\text{Ra}$ ,  ${}^{218,219}\text{Rn}$ ,  ${}^{214,215}\text{Po}$ ,  ${}^{211}\text{Bi}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 054612
- ${}^{218}\text{Fr}$  2009PA49 NUCLEAR REACTIONS  ${}^{238}\text{U}(\text{p}, \text{X})$   ${}^{122}\text{Cs} / {}^{123}\text{Cs} / {}^{124}\text{Cs} / {}^{125}\text{Cs} / {}^{126}\text{Cs} / {}^{127}\text{Cs} / {}^{128}\text{Cs} / {}^{129}\text{Cs} / {}^{130}\text{Cs} / {}^{132}\text{Cs} / {}^{138}\text{Cs} / {}^{139}\text{Cs} / {}^{140}\text{Cs} / {}^{141}\text{Cs} / {}^{142}\text{Cs} / {}^{143}\text{Cs} / {}^{144}\text{Cs} / {}^{145}\text{Cs} / {}^{146}\text{Cs} / {}^{147}\text{Cs} / {}^{148}\text{Cs} / {}^{202}\text{Fr} / {}^{203}\text{Fr} / {}^{204}\text{Fr} / {}^{205}\text{Fr} / {}^{206}\text{Fr} / {}^{207}\text{Fr} / {}^{208}\text{Fr} / {}^{209}\text{Fr} / {}^{210}\text{Fr} / {}^{211}\text{Fr} / {}^{212}\text{Fr} / {}^{213}\text{Fr} / {}^{214}\text{Fr} / {}^{218}\text{Fr} / {}^{219}\text{Fr} / {}^{220}\text{Fr} / {}^{221}\text{Fr} / {}^{222}\text{Fr} / {}^{223}\text{Fr} / {}^{224}\text{Fr} / {}^{225}\text{Fr} / {}^{226}\text{Fr} / {}^{227}\text{Fr} / {}^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=219**

- ${}^{219}\text{Pb}$  2009AL32 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$   ${}^{196}\text{Pb} / {}^{197}\text{Pb} / {}^{198}\text{Pb} / {}^{199}\text{Pb} / {}^{200}\text{Pb} / {}^{201}\text{Pb} / {}^{202}\text{Pb} / {}^{203}\text{Pb} / {}^{204}\text{Pb} / {}^{205}\text{Pb} / {}^{206}\text{Pb} / {}^{207}\text{Pb} / {}^{208}\text{Pb} / {}^{209}\text{Pb} / {}^{210}\text{Pb} / {}^{214}\text{Pb} / {}^{215}\text{Pb} / {}^{216}\text{Pb} / {}^{217}\text{Pb} / {}^{218}\text{Pb} / {}^{219}\text{Pb} / {}^{199}\text{Bi} / {}^{200}\text{Bi} / {}^{201}\text{Bi} / {}^{202}\text{Bi} / {}^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi} / {}^{207}\text{Bi} / {}^{208}\text{Bi} / {}^{209}\text{Bi} / {}^{210}\text{Bi} / {}^{211}\text{Bi} / {}^{212}\text{Bi} / {}^{213}\text{Bi} / {}^{214}\text{Bi} / {}^{218}\text{Bi} / {}^{219}\text{Bi} / {}^{220}\text{Bi} / {}^{221}\text{Bi} / {}^{222}\text{Bi} / {}^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485

KEYNUMBERS AND KEYWORDS

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**A=219 (continued)**

- 2010AL24 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  ${}_{203,204,205}\text{Pt}$ ,  ${}_{207,208,209,210}\text{Au}$ ,  ${}_{210,211,212,213,214,215,216}\text{Hg}$ ,  ${}_{210,211,212,213,214,215,216,217}\text{Tl}$ ,  ${}_{214,215,216,217,218,219,220}\text{Pb}$ ,  ${}_{217,218,219,220,221,222,223,224}\text{Bi}$ ,  ${}_{220,221,222,223,224,225,226,227}\text{Po}$ ,  ${}_{222,223,224,225,226,227,228,229}\text{At}$ ,  ${}_{225,226,227,228,229,230,231}\text{Rn}$ ,  ${}_{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- ${}^{219}\text{Bi}$  2009AL32 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$   ${}^{196}\text{Pb} / {}^{197}\text{Pb} / {}^{198}\text{Pb} / {}^{199}\text{Pb} / {}^{200}\text{Pb} / {}^{201}\text{Pb} / {}^{202}\text{Pb} / {}^{203}\text{Pb} / {}^{204}\text{Pb} / {}^{205}\text{Pb} / {}^{206}\text{Pb} / {}^{207}\text{Pb} / {}^{208}\text{Pb} / {}^{209}\text{Pb} / {}^{210}\text{Pb} / {}^{214}\text{Pb} / {}^{215}\text{Pb} / {}^{216}\text{Pb} / {}^{217}\text{Pb} / {}^{218}\text{Pb} / {}^{219}\text{Pb} / {}^{199}\text{Bi} / {}^{200}\text{Bi} / {}^{201}\text{Bi} / {}^{202}\text{Bi} / {}^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi} / {}^{207}\text{Bi} / {}^{208}\text{Bi} / {}^{209}\text{Bi} / {}^{210}\text{Bi} / {}^{211}\text{Bi} / {}^{212}\text{Bi} / {}^{213}\text{Bi} / {}^{214}\text{Bi} / {}^{218}\text{Bi} / {}^{219}\text{Bi} / {}^{220}\text{Bi} / {}^{221}\text{Bi} / {}^{222}\text{Bi} / {}^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2010AL24 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  ${}_{203,204,205}\text{Pt}$ ,  ${}_{207,208,209,210}\text{Au}$ ,  ${}_{210,211,212,213,214,215,216}\text{Hg}$ ,  ${}_{210,211,212,213,214,215,216,217}\text{Tl}$ ,  ${}_{214,215,216,217,218,219,220}\text{Pb}$ ,  ${}_{217,218,219,220,221,222,223,224}\text{Bi}$ ,  ${}_{220,221,222,223,224,225,226,227}\text{Po}$ ,  ${}_{222,223,224,225,226,227,228,229}\text{At}$ ,  ${}_{225,226,227,228,229,230,231}\text{Rn}$ ,  ${}_{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- ${}^{219}\text{Rn}$  2009M037 RADIOACTIVITY  ${}^{231}\text{Pa}$ ,  ${}^{230}\text{U}$ ,  ${}^{226,227}\text{Th}$ ,  ${}^{222,223}\text{Ra}$ ,  ${}^{218,219}\text{Rn}$ ,  ${}^{214,215}\text{Po}$ ,  ${}^{211}\text{Bi}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 054612
- ${}^{219}\text{Fr}$  2009PA49 NUCLEAR REACTIONS  ${}^{238}\text{U}(\text{p}, \text{X})$   ${}^{122}\text{Cs} / {}^{123}\text{Cs} / {}^{124}\text{Cs} / {}^{125}\text{Cs} / {}^{126}\text{Cs} / {}^{127}\text{Cs} / {}^{128}\text{Cs} / {}^{129}\text{Cs} / {}^{130}\text{Cs} / {}^{132}\text{Cs} / {}^{138}\text{Cs} / {}^{139}\text{Cs} / {}^{140}\text{Cs} / {}^{141}\text{Cs} / {}^{142}\text{Cs} / {}^{143}\text{Cs} / {}^{144}\text{Cs} / {}^{145}\text{Cs} / {}^{146}\text{Cs} / {}^{147}\text{Cs} / {}^{148}\text{Cs} / {}^{202}\text{Fr} / {}^{203}\text{Fr} / {}^{204}\text{Fr} / {}^{205}\text{Fr} / {}^{206}\text{Fr} / {}^{207}\text{Fr} / {}^{208}\text{Fr} / {}^{209}\text{Fr} / {}^{210}\text{Fr} / {}^{211}\text{Fr} / {}^{212}\text{Fr} / {}^{213}\text{Fr} / {}^{214}\text{Fr} / {}^{218}\text{Fr} / {}^{219}\text{Fr} / {}^{220}\text{Fr} / {}^{221}\text{Fr} / {}^{222}\text{Fr} / {}^{223}\text{Fr} / {}^{224}\text{Fr} / {}^{225}\text{Fr} / {}^{226}\text{Fr} / {}^{227}\text{Fr} / {}^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495

**A=220**

- ${}^{220}\text{Pb}$  2010AL24 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields.  ${}_{203,204,205}\text{Pt}$ ,  ${}_{207,208,209,210}\text{Au}$ ,  ${}_{210,211,212,213,214,215,216}\text{Hg}$ ,  ${}_{210,211,212,213,214,215,216,217}\text{Tl}$ ,  ${}_{214,215,216,217,218,219,220}\text{Pb}$ ,  ${}_{217,218,219,220,221,222,223,224}\text{Bi}$ ,  ${}_{220,221,222,223,224,225,226,227}\text{Po}$ ,  ${}_{222,223,224,225,226,227,228,229}\text{At}$ ,  ${}_{225,226,227,228,229,230,231}\text{Rn}$ ,  ${}_{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602



KEYNUMBERS AND KEYWORDS

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**A=220 (continued)**

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| $^{220}\text{Bi}$ | 2009AL32 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485  |
|                   | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| $^{220}\text{Po}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| $^{220}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |

**A=221**

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| $^{221}\text{Bi}$ | 2009AL32 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{196}\text{Pb} / ^{197}\text{Pb} / ^{198}\text{Pb} / ^{199}\text{Pb} / ^{200}\text{Pb} / ^{201}\text{Pb} / ^{202}\text{Pb} / ^{203}\text{Pb} / ^{204}\text{Pb} / ^{205}\text{Pb} / ^{206}\text{Pb} / ^{207}\text{Pb} / ^{208}\text{Pb} / ^{209}\text{Pb} / ^{210}\text{Pb} / ^{214}\text{Pb} / ^{215}\text{Pb} / ^{216}\text{Pb} / ^{217}\text{Pb} / ^{218}\text{Pb} / ^{219}\text{Pb} / ^{199}\text{Bi} / ^{200}\text{Bi} / ^{201}\text{Bi} / ^{202}\text{Bi} / ^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi} / ^{207}\text{Bi} / ^{208}\text{Bi} / ^{209}\text{Bi} / ^{210}\text{Bi} / ^{211}\text{Bi} / ^{212}\text{Bi} / ^{213}\text{Bi} / ^{214}\text{Bi} / ^{218}\text{Bi} / ^{219}\text{Bi} / ^{220}\text{Bi} / ^{221}\text{Bi} / ^{222}\text{Bi} / ^{223}\text{Bi}$ , E=1 GeV / nucleon; measured production $\sigma$ . Comparison with other data. JOUR ZAANE 42 485 |
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KEYNUMBERS AND KEYWORDS

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A=221 (*continued*)

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| 2010AL24          | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602   |
| $^{221}\text{Po}$ | 2010AL24 NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| 2010CH19          | NUCLEAR REACTIONS $\text{Be}(^{238}\text{U}, \text{X})^{236}\text{Ac} / ^{224}\text{At} / ^{222}\text{Po} / ^{221}\text{Po} / ^{213}\text{Tl}$ , E=670 MeV / nucleon; measured revolution frequency of the cooled fragments; deduced $T_{1/2}$ . Comparison with theoretical models, Darmstadt storage-cooler ring ESR. JOUR PYLBB 691 234   |
| 2010CH19          | ATOMIC MASSES $^{236}\text{Ac}$ , $^{224}\text{At}$ , $^{222}\text{Po}$ , $^{221}\text{Po}$ , $^{213}\text{Tl}$ ; measured revolution frequency of the cooled fragments; deduced atomic masses. JOUR PYLBB 691 234   |
| $^{221}\text{At}$ | 2010LI02 ATOMIC MASSES $^{85,86}\text{As}$ , $^{89}\text{Se}$ , $^{123}\text{Ag}$ , $^{138}\text{Te}$ , $^{140,141}\text{I}$ , $^{143}\text{Xe}$ , $^{221,222}\text{At}$ , $^{223}\text{Rn}$ , $^{228}\text{Fr}$ , $^{231}\text{Ra}$ ; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511  |
| $^{221}\text{Fr}$ | 2009PA49 NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{221}\text{Th}$ | 2008REZW NUCLEAR REACTIONS $^{207}\text{Pb}(^{18}\text{O}, 4\text{n})$ , $(^{18}\text{O}, \gamma)$ , E=96 MeV; measured $E\gamma$ , $I\gamma$ , A(particle), Z(particle), E(particle), (particle) $\gamma$ -coin. A=221-225 deduced levels, J, $\pi$ , B(E1) / B(E2), yrast $\Delta$ . Results on CD only. CONF E.Lansing (NS2008),P169,Reviol   |

## A=222

- <sup>222</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production  $\sigma$ . Comparison with other data. JOUR ZAANE 42 485
- 2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>222</sup>Po      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- 2010CH19      NUCLEAR REACTIONS Be(<sup>238</sup>U, X)<sup>236</sup>Ac / <sup>224</sup>At / <sup>222</sup>Po / <sup>221</sup>Po / <sup>213</sup>Tl, E=670 MeV / nucleon; measured revolution frequency of the cooled fragments; deduced T<sub>1/2</sub>. Comparison with theoretical models, Darmstadt storage-cooler ring ESR. JOUR PYLBB 691 234
- 2010CH19      ATOMIC MASSES <sup>236</sup>Ac, <sup>224</sup>At, <sup>222</sup>Po, <sup>221</sup>Po, <sup>213</sup>Tl; measured revolution frequency of the cooled fragments; deduced atomic masses. JOUR PYLBB 691 234
- <sup>222</sup>At      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator,  $\sigma$ , yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production  $\sigma$ . Comparisons of  $\sigma$  with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- 2010LI02      ATOMIC MASSES <sup>85,86</sup>As, <sup>89</sup>Se, <sup>123</sup>Ag, <sup>138</sup>Te, <sup>140,141</sup>I, <sup>143</sup>Xe, <sup>221,222</sup>At, <sup>223</sup>Rn, <sup>228</sup>Fr, <sup>231</sup>Ra; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511

KEYNUMBERS AND KEYWORDS

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**A=222 (continued)**

- <sup>222</sup>Fr      2009PA49      NUCLEAR REACTIONS <sup>238</sup>U(p, X)<sup>122</sup>Cs / <sup>123</sup>Cs / <sup>124</sup>Cs / <sup>125</sup>Cs / <sup>126</sup>Cs / <sup>127</sup>Cs / <sup>128</sup>Cs / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>138</sup>Cs / <sup>139</sup>Cs / <sup>140</sup>Cs / <sup>141</sup>Cs / <sup>142</sup>Cs / <sup>143</sup>Cs / <sup>144</sup>Cs / <sup>145</sup>Cs / <sup>146</sup>Cs / <sup>147</sup>Cs / <sup>148</sup>Cs / <sup>202</sup>Fr / <sup>203</sup>Fr / <sup>204</sup>Fr / <sup>205</sup>Fr / <sup>206</sup>Fr / <sup>207</sup>Fr / <sup>208</sup>Fr / <sup>209</sup>Fr / <sup>210</sup>Fr / <sup>211</sup>Fr / <sup>212</sup>Fr / <sup>213</sup>Fr / <sup>214</sup>Fr / <sup>218</sup>Fr / <sup>219</sup>Fr / <sup>220</sup>Fr / <sup>221</sup>Fr / <sup>222</sup>Fr / <sup>223</sup>Fr / <sup>224</sup>Fr / <sup>225</sup>Fr / <sup>226</sup>Fr / <sup>227</sup>Fr / <sup>228</sup>Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
- <sup>222</sup>Ra      2009M037      RADIOACTIVITY <sup>231</sup>Pa, <sup>230</sup>U, <sup>226,227</sup>Th, <sup>222,223</sup>Ra, <sup>218,219</sup>Rn, <sup>214,215</sup>Po, <sup>211</sup>Bi(α); measured Eα. JOUR PRVCA 80 054612

**A=223**

- <sup>223</sup>Bi      2009AL32      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>196</sup>Pb / <sup>197</sup>Pb / <sup>198</sup>Pb / <sup>199</sup>Pb / <sup>200</sup>Pb / <sup>201</sup>Pb / <sup>202</sup>Pb / <sup>203</sup>Pb / <sup>204</sup>Pb / <sup>205</sup>Pb / <sup>206</sup>Pb / <sup>207</sup>Pb / <sup>208</sup>Pb / <sup>209</sup>Pb / <sup>210</sup>Pb / <sup>214</sup>Pb / <sup>215</sup>Pb / <sup>216</sup>Pb / <sup>217</sup>Pb / <sup>218</sup>Pb / <sup>219</sup>Pb / <sup>199</sup>Bi / <sup>200</sup>Bi / <sup>201</sup>Bi / <sup>202</sup>Bi / <sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi / <sup>207</sup>Bi / <sup>208</sup>Bi / <sup>209</sup>Bi / <sup>210</sup>Bi / <sup>211</sup>Bi / <sup>212</sup>Bi / <sup>213</sup>Bi / <sup>214</sup>Bi / <sup>218</sup>Bi / <sup>219</sup>Bi / <sup>220</sup>Bi / <sup>221</sup>Bi / <sup>222</sup>Bi / <sup>223</sup>Bi, E=1 GeV / nucleon; measured production σ. Comparison with other data. JOUR ZAANE 42 485
- 2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>223</sup>Po      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
- <sup>223</sup>At      2010AL24      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup>Pt, <sup>207,208,209,210</sup>Au, <sup>210,211,212,213,214,215,216</sup>Hg, <sup>210,211,212,213,214,215,216,217</sup>Tl, <sup>214,215,216,217,218,219,220</sup>Pb, <sup>217,218,219,220,221,222,223,224</sup>Bi, <sup>220,221,222,223,224,225,226,227</sup>Po, <sup>222,223,224,225,226,227,228,229</sup>At, <sup>225,226,227,228,229,230,231</sup>Rn, <sup>228,229,230,232,232,233</sup>Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

KEYNUMBERS AND KEYWORDS

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**A=223 (continued)**

$^{223}\text{Rn}$	2010LI02	ATOMIC MASSES $^{85,86}\text{As}$ , $^{89}\text{Se}$ , $^{123}\text{Ag}$ , $^{138}\text{Te}$ , $^{140,141}\text{I}$ , $^{143}\text{Xe}$ , $^{221,222}\text{At}$ , $^{223}\text{Rn}$ , $^{228}\text{Fr}$ , $^{231}\text{Ra}$ ; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511
$^{223}\text{Fr}$	2009PA49	NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495
$^{223}\text{Ra}$	2009M037	RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612
$^{223}\text{Ac}$	2010GUZZ	RADIOACTIVITY $^{223}\text{Ac}$ [from $^{232}\text{Th}(\text{p}, 6\text{n})^{227}\text{Pa} \rightarrow ^{223}\text{Ac} + \alpha$ at cyclotron energy]; measured cluster decay; deduced branching ratios relative to $\alpha$ -decay. Found $^{14}\text{C}$ clusters, but no $^{15}\text{N}$ ones. CONF Varenna (Nucl Reaction Mechanisms), Proc, Vol.2, P307

**A=224**

$^{224}\text{Bi}$	2010AL24	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
$^{224}\text{Po}$	2010AL24	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602
$^{224}\text{At}$	2010AL24	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602

KEYNUMBERS AND KEYWORDS

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**A=224 (continued)**

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| 2010CH19          | NUCLEAR REACTIONS Be( <sup>238</sup> U, X) <sup>236</sup> Ac / <sup>224</sup> At / <sup>222</sup> Po / <sup>221</sup> Po / <sup>213</sup> Tl, E=670 MeV / nucleon; measured revolution frequency of the cooled fragments; deduced T <sub>1/2</sub> . Comparison with theoretical models, Darmstadt storage-cooler ring ESR. JOUR PYLBB 691 234   |
| 2010CH19          | ATOMIC MASSES <sup>236</sup> Ac, <sup>224</sup> At, <sup>222</sup> Po, <sup>221</sup> Po, <sup>213</sup> Tl; measured revolution frequency of the cooled fragments; deduced atomic masses. JOUR PYLBB 691 234  |
| <sup>224</sup> Fr | 2009PA49 NUCLEAR REACTIONS <sup>238</sup> U(p, X) <sup>122</sup> Cs / <sup>123</sup> Cs / <sup>124</sup> Cs / <sup>125</sup> Cs / <sup>126</sup> Cs / <sup>127</sup> Cs / <sup>128</sup> Cs / <sup>129</sup> Cs / <sup>130</sup> Cs / <sup>132</sup> Cs / <sup>138</sup> Cs / <sup>139</sup> Cs / <sup>140</sup> Cs / <sup>141</sup> Cs / <sup>142</sup> Cs / <sup>143</sup> Cs / <sup>144</sup> Cs / <sup>145</sup> Cs / <sup>146</sup> Cs / <sup>147</sup> Cs / <sup>148</sup> Cs / <sup>202</sup> Fr / <sup>203</sup> Fr / <sup>204</sup> Fr / <sup>205</sup> Fr / <sup>206</sup> Fr / <sup>207</sup> Fr / <sup>208</sup> Fr / <sup>209</sup> Fr / <sup>210</sup> Fr / <sup>211</sup> Fr / <sup>212</sup> Fr / <sup>213</sup> Fr / <sup>214</sup> Fr / <sup>218</sup> Fr / <sup>219</sup> Fr / <sup>220</sup> Fr / <sup>221</sup> Fr / <sup>222</sup> Fr / <sup>223</sup> Fr / <sup>224</sup> Fr / <sup>225</sup> Fr / <sup>226</sup> Fr / <sup>227</sup> Fr / <sup>228</sup> Fr, E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| <sup>224</sup> Ra | 2008GRZN RADIOACTIVITY <sup>228</sup> Th(α); measured γ polarization. Abstract only. CONF E.Lansing (NS2008),P111,Gros   |

**A=225**

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| <sup>225</sup> Po | 2010AL24 NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup> Pt, <sup>207,208,209,210</sup> Au, <sup>210,211,212,213,214,215,216</sup> Hg, <sup>210,211,212,213,214,215,216,217</sup> Tl, <sup>214,215,216,217,218,219,220</sup> Pb, <sup>217,218,219,220,221,222,223,224</sup> Bi, <sup>220,221,222,223,224,225,226,227</sup> Po, <sup>222,223,224,225,226,227,228,229</sup> At, <sup>225,226,227,228,229,230,231</sup> Rn, <sup>228,229,230,232,232,233</sup> Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| <sup>225</sup> At | 2010AL24 NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup> Pt, <sup>207,208,209,210</sup> Au, <sup>210,211,212,213,214,215,216</sup> Hg, <sup>210,211,212,213,214,215,216,217</sup> Tl, <sup>214,215,216,217,218,219,220</sup> Pb, <sup>217,218,219,220,221,222,223,224</sup> Bi, <sup>220,221,222,223,224,225,226,227</sup> Po, <sup>222,223,224,225,226,227,228,229</sup> At, <sup>225,226,227,228,229,230,231</sup> Rn, <sup>228,229,230,232,232,233</sup> Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| <sup>225</sup> Rn | 2010AL24 NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X), E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, σ, yields. <sup>203,204,205</sup> Pt, <sup>207,208,209,210</sup> Au, <sup>210,211,212,213,214,215,216</sup> Hg, <sup>210,211,212,213,214,215,216,217</sup> Tl, <sup>214,215,216,217,218,219,220</sup> Pb, <sup>217,218,219,220,221,222,223,224</sup> Bi, <sup>220,221,222,223,224,225,226,227</sup> Po, <sup>222,223,224,225,226,227,228,229</sup> At, <sup>225,226,227,228,229,230,231</sup> Rn, <sup>228,229,230,232,232,233</sup> Fr; deduced yields, production σ. Comparisons of σ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |

KEYNUMBERS AND KEYWORDS

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**A=225 (continued)**

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| $^{225}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{225}\text{Ra}$ | 2010WI07 | RADIOACTIVITY $^{21}\text{Na}$ , $^{213}\text{Ra}(\text{EC})$ , $^{225}\text{Ra}(\beta^-)$ , $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163   |
| $^{225}\text{Ac}$ | 2010WI07 | RADIOACTIVITY $^{21}\text{Na}$ , $^{213}\text{Ra}(\text{EC})$ , $^{225}\text{Ra}(\beta^-)$ , $^{213}\text{Ra}(\alpha)$ ; measured recoiling ion in coincidence with $\beta$ -particle, hfs; deduced correlation parameters, hyperfine splitting, transition fluorescence. JOUR PRAMC 75 163   |
| $^{225}\text{Th}$ | 2008REZW | NUCLEAR REACTIONS $^{207}\text{Pb}(^{18}\text{O}, 4\text{n})$ , $(^{18}\text{O}, \gamma)$ , E=96 MeV; measured $E\gamma$ , $I\gamma$ , A(particle), Z(particle), E(particle), (particle) $\gamma$ -coin. A=221-225 deduced levels, J, $\pi$ , B(E1) / B(E2), yrast $\Delta$ . Results on CD only. CONF E.Lansing (NS2008),P169,Reviol   |

**A=226**

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| $^{226}\text{Po}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{226}\text{At}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |

KEYNUMBERS AND KEYWORDS

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**A=226 (continued)**

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| $^{226}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602   |
| $^{226}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})$ $^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{226}\text{Th}$ | 2009M037 | NUCLEAR REACTIONS $^{231}\text{Pa}(\text{d}, 3\text{n})$ $^{230}\text{U}$ , E=11.2-19.9 MeV; measured $\gamma$ and $\alpha$ spectra; deduced $\sigma$ and thick target yields. Comparison with EMPIRE 3 code model calculations. $^{226}\text{Th}$ ; discussed production from $^{230}\text{U}(\alpha)$ for targeted $\alpha$ therapy. JOUR PRVCA 80 054612  |
|                   | 2009M037 | RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured E $\alpha$ . JOUR PRVCA 80 054612  |

**A=227**

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| $^{227}\text{Po}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{227}\text{At}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |



KEYNUMBERS AND KEYWORDS

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**A=227 (continued)**

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| $^{227}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602   |
| $^{227}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})$ $^{122}\text{Cs}$ / $^{123}\text{Cs}$ / $^{124}\text{Cs}$ / $^{125}\text{Cs}$ / $^{126}\text{Cs}$ / $^{127}\text{Cs}$ / $^{128}\text{Cs}$ / $^{129}\text{Cs}$ / $^{130}\text{Cs}$ / $^{132}\text{Cs}$ / $^{138}\text{Cs}$ / $^{139}\text{Cs}$ / $^{140}\text{Cs}$ / $^{141}\text{Cs}$ / $^{142}\text{Cs}$ / $^{143}\text{Cs}$ / $^{144}\text{Cs}$ / $^{145}\text{Cs}$ / $^{146}\text{Cs}$ / $^{147}\text{Cs}$ / $^{148}\text{Cs}$ / $^{202}\text{Fr}$ / $^{203}\text{Fr}$ / $^{204}\text{Fr}$ / $^{205}\text{Fr}$ / $^{206}\text{Fr}$ / $^{207}\text{Fr}$ / $^{208}\text{Fr}$ / $^{209}\text{Fr}$ / $^{210}\text{Fr}$ / $^{211}\text{Fr}$ / $^{212}\text{Fr}$ / $^{213}\text{Fr}$ / $^{214}\text{Fr}$ / $^{218}\text{Fr}$ / $^{219}\text{Fr}$ / $^{220}\text{Fr}$ / $^{221}\text{Fr}$ / $^{222}\text{Fr}$ / $^{223}\text{Fr}$ / $^{224}\text{Fr}$ / $^{225}\text{Fr}$ / $^{226}\text{Fr}$ / $^{227}\text{Fr}$ / $^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
| $^{227}\text{Ac}$ | 2009M037 | RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612   |
| $^{227}\text{Th}$ | 2009M037 | RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612   |

**A=228**

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| $^{228}\text{At}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{228}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |

KEYNUMBERS AND KEYWORDS

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**A=228 (continued)**

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| $^{228}\text{Fr}$ | 2009PA49 | NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{X})^{122}\text{Cs} / ^{123}\text{Cs} / ^{124}\text{Cs} / ^{125}\text{Cs} / ^{126}\text{Cs} / ^{127}\text{Cs} / ^{128}\text{Cs} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{138}\text{Cs} / ^{139}\text{Cs} / ^{140}\text{Cs} / ^{141}\text{Cs} / ^{142}\text{Cs} / ^{143}\text{Cs} / ^{144}\text{Cs} / ^{145}\text{Cs} / ^{146}\text{Cs} / ^{147}\text{Cs} / ^{148}\text{Cs} / ^{202}\text{Fr} / ^{203}\text{Fr} / ^{204}\text{Fr} / ^{205}\text{Fr} / ^{206}\text{Fr} / ^{207}\text{Fr} / ^{208}\text{Fr} / ^{209}\text{Fr} / ^{210}\text{Fr} / ^{211}\text{Fr} / ^{212}\text{Fr} / ^{213}\text{Fr} / ^{214}\text{Fr} / ^{218}\text{Fr} / ^{219}\text{Fr} / ^{220}\text{Fr} / ^{221}\text{Fr} / ^{222}\text{Fr} / ^{223}\text{Fr} / ^{224}\text{Fr} / ^{225}\text{Fr} / ^{226}\text{Fr} / ^{227}\text{Fr} / ^{228}\text{Fr}$ , E=1 GeV; measured fission and spallation yields from different mass targets; deduced effect of target size. JOUR ZAANE 42 495 |
|                   | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
|                   | 2010LI02 | ATOMIC MASSES $^{85,86}\text{As}$ , $^{89}\text{Se}$ , $^{123}\text{Ag}$ , $^{138}\text{Te}$ , $^{140,141}\text{I}$ , $^{143}\text{Xe}$ , $^{221,222}\text{At}$ , $^{223}\text{Rn}$ , $^{228}\text{Fr}$ , $^{231}\text{Ra}$ ; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511  |
| $^{228}\text{Th}$ | 2008GRZN | RADIOACTIVITY $^{228}\text{Th}(\alpha)$ ; measured $\gamma$ polarization. Abstract only. CONF E.Lansing (NS2008),P111,Gros  |
|                   | 2008KEZX | NUCLEAR REACTIONS $^{232}\text{Th}(\text{n}, 5\text{n})$ , E=29-42 MeV; measured $E_\gamma$ , $I_\gamma(\theta)$ ; deduced $\sigma$ , $\sigma_\gamma$ (discrete transitions); calculated $\sigma$ using TALYS code. CONF Nice (Nucl Data for Sci and Technol) Proc,P1019  |
| $^{228}\text{U}$  | 2009SI36 | NUCLEAR REACTIONS $^{209}\text{Bi}(^{19}\text{F}, \text{X})^{228}\text{U}$ , E=100, 104, 108, 112, 116 MeV; measured neutrons by tof and fission fragments; deduced pre-scission and post-scission neutron multiplicity spectra and total neutron multiplicities from the fission of compound nucleus $^{228}\text{U}$ . Comparison with statistical model calculations using Bohr-Wheeler transition state fission width and Kramer dissipative dynamical fission width. JOUR PRVCA 80 064615  |

**A=229**

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|-------------------|----------|--|
| $^{229}\text{At}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
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KEYNUMBERS AND KEYWORDS

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**A=229 (continued)**

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| $^{229}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{229}\text{Fr}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |

**A=230**

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| $^{230}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| $^{230}\text{Fr}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602  |
| $^{230}\text{Pa}$ | 2008MEZV | NUCLEAR REACTIONS $^{209}\text{Bi}(\alpha, \text{x})$ , E=28.8, 32.8 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\text{E}\alpha$ , $\text{I}\alpha$ ; $^{186}\text{W}(\text{p}, \text{n})$ , E=7-15 MeV; deduced $\sigma$ ; calculated $\sigma$ ; $\text{Zn}(\text{d}, \text{x})^{61}\text{Cu}$ , E $\approx$ 3-19 MeV; $\text{Zn}(\text{d}, \text{x})^{64}\text{Cu}$ , E $\approx$ 3-19 MeV; $\text{Zn}(\text{d}, \text{x})^{66}\text{Ga}$ , E $\approx$ 3-19 MeV; $\text{Zn}(\text{d}, \text{x})^{67}\text{Ga}$ , E $\approx$ 3-19 MeV; $\text{Zn}(\text{d}, \text{x})^{65}\text{Zn}$ , E $\approx$ 3-19 MeV; $\text{Zn}(\text{d}, \text{x})^{69}\text{Zn}$ , E $\approx$ 3-19 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ ; deduced thin target yields; $^{103}\text{Rh}(\text{d}, 2\text{n})$ , E $\approx$ 3-20 MeV; $^{232}\text{Th}(\text{p}, 3\text{n})$ , E $\approx$ 13-31 MeV; calculated $\sigma$ . Calculations using EMPIRE II; compared to available data. CONF Nice (Nucl Data for Sci and Technol) Proc,P1403 |

KEYNUMBERS AND KEYWORDS

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**A=230 (continued)**

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| $^{230}\text{U}$ | 2009M037 | NUCLEAR REACTIONS $^{231}\text{Pa}(\text{d}, 3\text{n})^{230}\text{U}$ , E=11.2-19.9 MeV; measured $\gamma$ and $\alpha$ spectra; deduced $\sigma$ and thick target yields. Comparison with EMPIRE 3 code model calculations. $^{226}\text{Th}$ ; discussed production from $^{230}\text{U}(\alpha)$ for targeted $\alpha$ therapy. JOUR PRVCA 80 054612   |
|                  | 2009M037 | RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612   |
|                  | 2010NT01 | NUCLEAR REACTIONS $^{232}\text{Th}(\alpha, 4\text{n})$ , E=42 MeV; $^{232}\text{Th}(\alpha, 6\text{n})$ , E=61 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma\gamma(\text{recoil})$ -coin. $^{230,232}\text{U}$ ; deduced levels, J, $\pi$ , rotational bands, octupole bands, B(E1) / B(E2) ratios, electric dipole moments. Systematics of ground state and octupole bands in $^{226,228}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{230,232}\text{U}$ . Systematics of electric dipole moment in Ra, Th and U isotopes with N=130, 134, 138, 142 and 146; and comparison with Skyrme Hartree-Fock calculations in the literature. JOUR PRVCA 82 041305 |

**A=231**

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| $^{231}\text{Rn}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , E=1 GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{231}\text{Ra}$ | 2010LI02 | ATOMIC MASSES $^{85,86}\text{As}$ , $^{89}\text{Se}$ , $^{123}\text{Ag}$ , $^{138}\text{Te}$ , $^{140,141}\text{I}$ , $^{143}\text{Xe}$ , $^{221,222}\text{At}$ , $^{223}\text{Rn}$ , $^{228}\text{Fr}$ , $^{231}\text{Ra}$ ; measured atomic mass using storage ring mass spectrometry. JOUR APOBB 41 511   |
| $^{231}\text{Th}$ | 2010AD13 | NUCLEAR REACTIONS $^{232}\text{Th}(\text{n}, \gamma)$ , $(\text{n}, 2\text{n})$ , $(\text{n}, \text{F})^{99}\text{Mo}$ , $^{235,238}\text{U}(\text{n}, \gamma)$ , $(\text{n}, \text{F})^{99}\text{Mo}$ / $^{132}\text{Te}$ / $^{133}\text{I}$ / $^{135}\text{I}$ / $^{135}\text{Xe}$ / $^{140}\text{Ba}$ / $^{143}\text{Ce}$ , E=thermal-1000 MeV [from $^{208}\text{Pb}(\text{d}, \text{X})$ , E=1.6 GeV spallation source]; measured $E\gamma$ , $I\gamma$ using HPGe detectors; deduced $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159  |
| $^{231}\text{Pa}$ | 2009M037 | RADIOACTIVITY $^{231}\text{Pa}$ , $^{230}\text{U}$ , $^{226,227}\text{Th}$ , $^{222,223}\text{Ra}$ , $^{218,219}\text{Rn}$ , $^{214,215}\text{Po}$ , $^{211}\text{Bi}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 054612   |

KEYNUMBERS AND KEYWORDS

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**A=232**

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| $^{232}\text{Fr}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , $E=1$ GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{232}\text{Th}$ | 2010YE02 | NUCLEAR REACTIONS $^{235}\text{U}(\gamma, \gamma')$ $E=3.5, 4.4$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma(\theta)$ , integrated cross sections of $\gamma$ rays. $^{235}\text{U}$ ; deduced levels, B(M1), B(E1) strengths. $^{232}\text{Th}$ , $^{235,236,238}\text{U}$ ; systematics of M1 strength functions. JOUR PRVCA 81 044309   |
| $^{232}\text{Pa}$ | 2008FOZY | RADIOACTIVITY $^{232}\text{Pa}(\beta^-)$ [from $^{232}\text{Th}(p, n)$ , $E\approx 11.5$ MeV]; measured $E\gamma$ , $I\gamma(t)$ , e- $\gamma$ -coin.; deduced isomer half-life, decay modes. CONF Nice (Nucl Data for Sci and Technol) Proc,P119  |
| $^{232}\text{U}$  | 2008FOZY | RADIOACTIVITY $^{232}\text{Pa}(\beta^-)$ [from $^{232}\text{Th}(p, n)$ , $E\approx 11.5$ MeV]; measured $E\gamma$ , $I\gamma(t)$ , e- $\gamma$ -coin.; deduced isomer half-life, decay modes. CONF Nice (Nucl Data for Sci and Technol) Proc,P119  |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
|                   | 2010NT01 | NUCLEAR REACTIONS $^{232}\text{Th}(\alpha, 4n)$ , $E=42$ MeV; $^{232}\text{Th}(\alpha, 6n)$ , $E=61$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma^-$ , $\gamma\gamma(\text{recoil})$ -coin. $^{230,232}\text{U}$ ; deduced levels, J, $\pi$ , rotational bands, octupole bands, B(E1) / B(E2) ratios, electric dipole moments. Systematics of ground state and octupole bands in $^{226,228}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{230,232}\text{U}$ . Systematics of electric dipole moment in Ra, Th and U isotopes with $N=130, 134, 138, 142$ and $146$ ; and comparison with Skyrme Hartree-Fock calculations in the literature. JOUR PRVCA 82 041305   |

**A=233**

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| $^{233}\text{Fr}$ | 2010AL24 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})$ , $E=1$ GeV / nucleon; measured fragment residues using a high resolution magnetic spectrometer Fragment Separator, $\sigma$ , yields. $^{203,204,205}\text{Pt}$ , $^{207,208,209,210}\text{Au}$ , $^{210,211,212,213,214,215,216}\text{Hg}$ , $^{210,211,212,213,214,215,216,217}\text{Tl}$ , $^{214,215,216,217,218,219,220}\text{Pb}$ , $^{217,218,219,220,221,222,223,224}\text{Bi}$ , $^{220,221,222,223,224,225,226,227}\text{Po}$ , $^{222,223,224,225,226,227,228,229}\text{At}$ , $^{225,226,227,228,229,230,231}\text{Rn}$ , $^{228,229,230,232,232,233}\text{Fr}$ ; deduced yields, production $\sigma$ . Comparisons of $\sigma$ with the predictions obtained using the computer codes COFRA and EPAX. JOUR PRVCA 82 041602 |
| $^{233}\text{Th}$ | 2008BRZW | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(n, \gamma)$ , $E=\text{reactor spectrum}$ ; $^{242}\text{Am}$ , $^{245}\text{Cm}(n, f)$ , $E=\text{reactor spectrum}$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , A(fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619  |

KEYNUMBERS AND KEYWORDS

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**A=233 (continued)**

- 2008LEZO NUCLEAR REACTIONS  $^{170}\text{Er}$ ,  $^{180}\text{Hf}$ ,  $^{242}\text{Pu}$ ,  $^{232}\text{Th}(n, \gamma)$ , E=reactor spectrum; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $^{171}\text{Er}$ ,  $^{181}\text{Hf}$ ,  $^{243}\text{Pu}$ ,  $^{233}\text{Pa}$  integral  $\sigma$ ; compared to JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P521
- 2010AD13 NUCLEAR REACTIONS  $^{232}\text{Th}(n, \gamma)$ ,  $(n, 2n)$ ,  $(n, F)^{99}\text{Mo}$ ,  $^{235,238}\text{U}(n, \gamma)$ ,  $(n, F)^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ , E=thermal-1000 MeV [from  $^{208}\text{Pb}(d, X)$ , E=1.6 GeV spallation source]; measured  $E\gamma$ ,  $I\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- $^{233}\text{Pa}$  2010K027 RADIOACTIVITY  $^{233}\text{Pa}(\beta^-)$  [from  $^{237}\text{Np}(\alpha)$ ]; measured  $E\gamma$ ,  $\gamma$ ; deduced emission probabilities for x-rays and  $\gamma$ -ray transitions. JOUR ARISE 68 2382
- 2010LE01 RADIOACTIVITY  $^{238}\text{Np}$ ,  $^{60}\text{Co}(\beta^-)$ ,  $^{237}\text{Np}$ ,  $^{238}\text{Pu}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ; deduced  $\gamma$ -ray emission probabilities from  $\beta^-$ -decay of  $^{238}\text{Np}$ . JOUR ARISE 68 432
- $^{233}\text{U}$  2010K027 RADIOACTIVITY  $^{233}\text{Pa}(\beta^-)$  [from  $^{237}\text{Np}(\alpha)$ ]; measured  $E\gamma$ ,  $\gamma$ ; deduced emission probabilities for x-rays and  $\gamma$ -ray transitions. JOUR ARISE 68 2382

**A=234**

- $^{234}\text{Pa}$  2008BRZW NUCLEAR REACTIONS  $^{232}\text{Th}$ ,  $^{233}\text{Pa}$ ,  $^{234,235}\text{U}$ ,  $^{241,242}\text{Am}$ ,  $^{244}\text{Cm}$ ,  $^{237}\text{Np}$ ,  $^{238}\text{Pu}(n, \gamma)$ , E=reactor spectrum;  $^{242}\text{Am}$ ,  $^{245}\text{Cm}(n, f)$ , E=reactor spectrum; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ , A(fragment); deduced average  $\sigma$ ,  $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619
- $^{234}\text{U}$  2008BEZM NUCLEAR REACTIONS  $^{233}\text{U}(n, f)$ , E $\approx$ 1 eV-1 MeV;  $^{233}\text{U}(n, \gamma)$ , E $\approx$ 1 eV-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , E(fission) using TAC (Total Absorption Calorimeter); deduced  $\sigma$ . Compared to other data, ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P571
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010LE01 RADIOACTIVITY  $^{238}\text{Np}$ ,  $^{60}\text{Co}(\beta^-)$ ,  $^{237}\text{Np}$ ,  $^{238}\text{Pu}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ; deduced  $\gamma$ -ray emission probabilities from  $\beta^-$ -decay of  $^{238}\text{Np}$ . JOUR ARISE 68 432

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**A=235**

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| $^{235}\text{U}$  | 2008BRZW | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(n, \gamma)$ , E=reactor spectrum; $^{242}\text{Am}$ , $^{245}\text{Cm}(n, f)$ , E=reactor spectrum; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , A(fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619  |
|                   | 2008BRZX | NUCLEAR REACTIONS $^{235}\text{U}(n, f)$ , E=6-18 MeV; $^{235}\text{U}(n, \gamma)$ , E=6-18 MeV; measured $E\gamma$ , $I\gamma$ , (fragment)- $\gamma$ -coin.; deduced $\sigma$ with and without fission tagging; $^{234,236}\text{U}(n, \gamma)$ , E=0.01 eV-1 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to ENDF / B-VI. CONF Nice (Nucl Data for Sci and Technol) Proc,P607  |
|                   | 2010C002 | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , Pb, $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643  |
|                   | 2010YE02 | NUCLEAR REACTIONS $^{235}\text{U}(\gamma, \gamma')$ E=3.5, 4.4 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma(\theta)$ , integrated cross sections of $\gamma$ rays. $^{235}\text{U}$ ; deduced levels, B(M1), B(E1) strengths. $^{232}\text{Th}$ , $^{235,236,238}\text{U}$ ; systematics of M1 strength functions. JOUR PRVCA 81 044309   |
| $^{235}\text{Np}$ | 2008LAZT | NUCLEAR REACTIONS $^{234}\text{Np}(n, \gamma)$ , E=thermal-100 eV; measured $E\gamma$ , $I\gamma$ using TAC (Total Absorption Calorimeter) at n-TOF; deduced yield, neutron resonance parameters using SAMMY. Compared to ENDF / B-VI.8. CONF Nice (Nucl Data for Sci and Technol) Proc,P595   |
|                   | 2010HU02 | NUCLEAR REACTIONS $^{237}\text{Np}(^{116}\text{Sn}, ^{118}\text{Sn})^{235}\text{Np}$ , E=801 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -, (fragment)( fragment) $\gamma$ -coin, and angular distribution of $\gamma$ -ray yields for $^{116}\text{Sn}$ , $^{117}\text{Sn}$ and $^{118}\text{Sn}$ using the Gammasphere and CHICO arrays. $^{235}\text{Np}$ ; deduced levels, J, $\pi$ , bands, angular momentum, moment of inertia as functions of rotational frequency, configurations. $^{116,117,118}\text{Sn}$ ; measured $E\gamma$ , $\gamma\gamma$ -coin. Comparison with cranked shell-model calculations and with alignment plots for $^{237}\text{Np}$ and $^{241}\text{Am}$ . JOUR PRVCA 81 014312 |

**A=236**

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| $^{236}\text{Ac}$ | 2010CH19 | NUCLEAR REACTIONS Be( $^{238}\text{U}$ , X) $^{236}\text{Ac}$ / $^{224}\text{At}$ / $^{222}\text{Po}$ / $^{221}\text{Po}$ / $^{213}\text{Tl}$ , E=670 MeV / nucleon; measured revolution frequency of the cooled fragments; deduced $T_{1/2}$ . Comparison with theoretical models, Darmstadt storage-cooler ring ESR. JOUR PYLBB 691 234   |
|                   | 2010CH19 | ATOMIC MASSES $^{236}\text{Ac}$ , $^{224}\text{At}$ , $^{222}\text{Po}$ , $^{221}\text{Po}$ , $^{213}\text{Tl}$ ; measured revolution frequency of the cooled fragments; deduced atomic masses. JOUR PYLBB 691 234  |
| $^{236}\text{U}$  | 2008BRZW | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(n, \gamma)$ , E=reactor spectrum; $^{242}\text{Am}$ , $^{245}\text{Cm}(n, f)$ , E=reactor spectrum; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , A(fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619 |

KEYNUMBERS AND KEYWORDS

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**A=236 (continued)**

- 2008BRZX NUCLEAR REACTIONS  $^{235}\text{U}(\text{n}, \text{f})$ ,  $E=6-18$  MeV;  $^{235}\text{U}(\text{n}, \gamma)$ ,  $E=6-18$  MeV; measured  $E\gamma$ ,  $I\gamma$ , (fragment)- $\gamma$ -coin.; deduced  $\sigma$  with and without fission tagging;  $^{234,236}\text{U}(\text{n}, \gamma)$ ,  $E=0.01$  eV-1 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to ENDF / B-VI. CONF Nice (Nucl Data for Sci and Technol) Proc,P607
- 2008ESZY NUCLEAR REACTIONS  $^{238}\text{U}(^3\text{He}, \alpha)$ ,  $E=42$  MeV [surrogate for  $^{236}\text{U}(\text{n}, \text{f})$ ,  $E\approx 0.6-2.0$  MeV]; measured  $E\alpha$ ,  $I\alpha$ ,  $\theta(\alpha)$ ,  $E\gamma$ ,  $I\gamma$ .  $^{236}\text{U}$  deduced  $\gamma$  transitions in ground-state band. CONF Nice (Nucl Data for Sci and Technol) Proc,P325
- 2008JAZV NUCLEAR REACTIONS  $^{235}\text{U}(\text{n}, \gamma)$ ,  $E\approx$ thermal-500 keV;  $^{235}\text{U}(\text{n}, \text{f})E\approx$ thermal-500 keV;  $^{242}\text{Am}(\text{n}, \text{f})$ ,  $E\approx 3.5-10000$  eV; measured  $E\gamma$ ,  $I\gamma$ ,  $E(\text{fragment})$ ,  $I(\text{fragment})$ ; deduced (cluster)- $\gamma$ -multiplicity, total and average  $E\gamma$ . Compared to SF results; DANCE, PPAC fission-tagging detector;  $^{242}\text{Am}$  isomeric state. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P440
- 2008KOZP RADIOACTIVITY  $^{240}\text{Pu}$ ,  $^{245,246}\text{Cm}$ ,  $^{250}\text{Cf}(\alpha)$  [from  $^{250}\text{Cf}$ ]; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $T_{1/2}$ ,  $\alpha$ -decay energies,  $P\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93
- 2010AD13 NUCLEAR REACTIONS  $^{232}\text{Th}(\text{n}, \gamma)$ ,  $(\text{n}, 2\text{n})$ ,  $(\text{n}, \text{F})^{99}\text{Mo}$ ,  $^{235,238}\text{U}(\text{n}, \gamma)$ ,  $(\text{n}, \text{F})^{99}\text{Mo} / ^{132}\text{Te} / ^{133}\text{I} / ^{135}\text{I} / ^{135}\text{Xe} / ^{140}\text{Ba} / ^{143}\text{Ce}$ ,  $E=\text{thermal-1000}$  MeV [from  $^{208}\text{Pb}(\text{d}, \text{X})$ ,  $E=1.6$  GeV spallation source]; measured  $E\gamma$ ,  $I\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ ,  $\text{Pb}$ ,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(\text{n}, \gamma)$ ,  $E=0.001-1$  MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010YE02 NUCLEAR REACTIONS  $^{235}\text{U}(\gamma, \gamma')$   $E=3.5, 4.4$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma(\theta)$ , integrated cross sections of  $\gamma$  rays.  $^{235}\text{U}$ ; deduced levels,  $B(\text{M1})$ ,  $B(\text{E1})$  strengths.  $^{232}\text{Th}$ ,  $^{235,236,238}\text{U}$ ; systematics of M1 strength functions. JOUR PRVCA 81 044309
- $^{236}\text{Pu}$  2010DW01 ATOMIC MASSES  $^{232}\text{U}$ ,  $^{236,238}\text{Pu}$ ,  $^{240,241,242}\text{Cm}$ ,  $^{244,245,246}\text{Cf}$ ,  $^{248,249,250}\text{Fm}$ ,  $^{252,253,254}\text{No}$ ,  $^{256,257,258}\text{Rf}$ ,  $^{260,261,262}\text{Sg}$ ,  $^{264,265,266}\text{Hs}$ ,  $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=237**

- $^{237}\text{U}$  2008BRZX NUCLEAR REACTIONS  $^{235}\text{U}(\text{n}, \text{f})$ ,  $E=6-18$  MeV;  $^{235}\text{U}(\text{n}, \gamma)$ ,  $E=6-18$  MeV; measured  $E\gamma$ ,  $I\gamma$ , (fragment)- $\gamma$ -coin.; deduced  $\sigma$  with and without fission tagging;  $^{234,236}\text{U}(\text{n}, \gamma)$ ,  $E=0.01$  eV-1 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to ENDF / B-VI. CONF Nice (Nucl Data for Sci and Technol) Proc,P607



KEYNUMBERS AND KEYWORDS

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**A=237** (*continued*)

- 2008ESZY NUCLEAR REACTIONS  $^{238}\text{U}(^3\text{He}, \alpha)$ , E=42 MeV [surrogate for  $^{236}\text{U}(\text{n}, \text{f})$ , E $\approx$ 0.6-2.0 MeV]; measured E $\alpha$ , I $\alpha$ ,  $\theta(\alpha)$ , E $\gamma$ , I $\gamma$ .  $^{236}\text{U}$  deduced  $\gamma$  transitions in ground-state band. CONF Nice (Nucl Data for Sci and Technol) Proc,P325
- 2009MEZX NUCLEAR REACTIONS  $^{236}\text{U}(\text{n}, \gamma)$ , E=1 eV-10 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin., E(particle), I(particle); deduced capture yield. ToF spectra. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P381,Mezentseva
- 2009SUZY NUCLEAR REACTIONS  $^{236}\text{U}(\text{n}, \gamma)$ , E=low; measured E $\gamma$ , I $\gamma$ ; deduced  $\gamma$  strengths B(M1), B(E1), nuclear level density. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P577,Sukhovoij
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ , Pb,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(\text{n}, \gamma)$ , E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- 2010WA19 NUCLEAR REACTIONS  $^{238}\text{U}(\text{n}, 2\text{n})$ , E=13.5, 14.1, 14.7, 14.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with experimental data and evaluated neutron libraries. JOUR NIMAE 621 326
- $^{237}\text{Np}$  2008XXZY RADIOACTIVITY  $^{241}\text{Am}(\alpha)$ ,  $^{242}\text{Cm}(\alpha)$ [from  $^{241}\text{Am}(\text{n}, \gamma)^{242}\text{Am}(\beta^-)$ ]; measured E $\alpha$ , I $\alpha$ ; deduced  $^{242}\text{Cm}$  yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P425
- 2010LE01 RADIOACTIVITY  $^{238}\text{Np}$ ,  $^{60}\text{Co}(\beta^-)$ ,  $^{237}\text{Np}$ ,  $^{238}\text{Pu}(\alpha)$ ; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ; deduced  $\gamma$ -ray emission probabilities from  $\beta^-$ -decay of  $^{238}\text{Np}$ . JOUR ARISE 68 432
- 2010M001 RADIOACTIVITY  $^{241}\text{Am}(\alpha)$ ; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ,  $\alpha\gamma$ -coin.; deduced  $\gamma$ -ray emission probabilities per decay. Comparison with Monte-Carlo code. JOUR ARISE 68 596

**A=238**

- $^{238}\text{U}$  2009KAZT RADIOACTIVITY  $^{238}\text{U}(\text{SF})$ [from in-flight fission at 345 MeV / nucleon]; measured A(fragment), Z(fragment), E $\gamma$ , I $\gamma$ (t),  $\gamma\gamma$ -coin.; deduced  $^{94,95}\text{Br}$  isomeric transition T $_{1/2}$ . REPT RIKEN 2008 Annual,Pxv,Kameda
- 2009L0ZZ RADIOACTIVITY  $^{238}\text{U}(\text{SF})$ ; measured Sn fragments, E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin., ; deduced J,  $\pi$ , high-spin states, isomeric transitions, half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P164,Lozeva
- 2010NOZZ NUCLEAR REACTIONS  $^{238}\text{U}(\alpha, \text{xnF})$ , E=62 MeV; measured E $\gamma$ , I $\gamma$  from  $\beta$  decays of the  $^{28}\text{Mg}$ ,  $^{28}\text{Al}$ ,  $^{28}\text{Si}$  chain [from  $^{25}\text{Mg}(\text{xn}, (\text{x}-3)\text{n})^{28}\text{Mg}$ ].  $^{238}\text{U}$ ; deduced yields relation Y(xn) / Y(2-fission). Cyclotron, activation method, enriched target, Compton suppressed Ge-detector. CONF St.-Petersburg,P80,Novatsky
- 2010YE02 NUCLEAR REACTIONS  $^{235}\text{U}(\gamma, \gamma')$  E=3.5, 4.4 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma(\theta)$ , integrated cross sections of  $\gamma$  rays.  $^{235}\text{U}$ ; deduced levels, B(M1), B(E1) strengths.  $^{232}\text{Th}$ ,  $^{235,236,238}\text{U}$ ; systematics of M1 strength functions. JOUR PRVCA 81 044309

KEYNUMBERS AND KEYWORDS

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**A=238 (continued)**

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| 2010ZH09                   | NUCLEAR REACTIONS $^{238}\text{U}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , E=1400 MeV; measured $E\gamma$ , $\gamma\gamma$ -coin using Gammasphere array, unsafe Coulomb excitation. $^{238}\text{U}$ ; deduced levels, J, $\pi$ , bands, Routhians, double-octupole phonon excitation. Comparison with band structures in $^{240}\text{Pu}$ . JOUR PRVCA 81 041306  |
| $^{238}\text{Np}$ 2008BRZW | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(n, \gamma)$ , E=reactor spectrum; $^{242}\text{Am}$ , $^{245}\text{Cm}(n, f)$ , E=reactor spectrum; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , A(fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619                                       |
| 2008GUZN                   | NUCLEAR REACTIONS $^{237}\text{Np}$ , $^{240}\text{Pu}(n, \gamma)$ , E=1 eV-2 keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced yield, $\sigma$ , average resonance width. Compared to other data, ENDF / B-VII, JEFF-3.1, JENDL-3.3. Other data from transmission measurements. CONF Nice (Nucl Data for Sci and Technol) Proc,P627   |
| 2008KRZU                   | NUCLEAR REACTIONS $^{238}\text{U}(^{48}\text{Ca}, ^{48}\text{K})$ , E=330 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin; deduced $^{48}\text{K}$ E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P531   |
| 2008MIZR                   | NUCLEAR REACTIONS $^{237}\text{Np}(n, \gamma)$ , E=0.015-20 eV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ . Compared to JENDL-3.3. CONF Nice (Nucl Data for Sci and Technol) Proc,P591   |
| 2010C002                   | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , Pb, $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643 |
| 2010LE01                   | RADIOACTIVITY $^{238}\text{Np}$ , $^{60}\text{Co}(\beta^-)$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced $\gamma$ -ray emission probabilities from $\beta^-$ -decay of $^{238}\text{Np}$ . JOUR ARISE 68 432  |
| 2010LE01                   | NUCLEAR REACTIONS $^{237}\text{Np}$ , $^{59}\text{Co}(n, \gamma)$ , E not given; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR ARISE 68 432  |
| $^{238}\text{Pu}$ 2008WAZN | NUCLEAR REACTIONS $^{238,240,242}\text{Pu}(\gamma, \gamma')$ , E not given; measured Coulomb excitation $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced levels, J, $\pi$ , yrast, bands, inertia moments. Results on CD only. CONF E.Lansing (NS2008),P192,Wang   |
| 2008XXZY                   | RADIOACTIVITY $^{241}\text{Am}(\alpha)$ , $^{242}\text{Cm}(\alpha)$ [from $^{241}\text{Am}(n, \gamma)^{242}\text{Am}(\beta^-)$ ]; measured $E\alpha$ , $I\alpha$ ; deduced $^{242}\text{Cm}$ yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P425   |
| 2010DW01                   | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312   |
| 2010LE01                   | RADIOACTIVITY $^{238}\text{Np}$ , $^{60}\text{Co}(\beta^-)$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced $\gamma$ -ray emission probabilities from $\beta^-$ -decay of $^{238}\text{Np}$ . JOUR ARISE 68 432  |

KEYNUMBERS AND KEYWORDS

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**A=238 (continued)**

<sup>238</sup>Bk      2010AN08      RADIOACTIVITY <sup>242,243</sup>Es, <sup>246,247</sup>Md( $\alpha$ ), (SF); <sup>246</sup>Md(EC) [from <sup>209</sup>Bi(<sup>40</sup>Ar, 2n), (<sup>40</sup>Ar, 3n), E=187, 198 MeV and subsequent decays]; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ,  $\alpha\gamma$ -,  $\alpha\alpha$ -coin; deduced Q, branching ratios, T<sub>1/2</sub>. Comparison with other data and calculations. JOUR ZAANE 43 35

**A=239**

<sup>239</sup>U      2008GRZS      RADIOACTIVITY <sup>239</sup>U( $\beta^-$ )[from <sup>238</sup>U(n,  $\gamma$ )]; measured E $\gamma$ , I $\gamma$ (t);deduced  $\gamma$  intensities; X-ray intensities. Compared to literature. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P264

20080BZZ      NUCLEAR REACTIONS <sup>235</sup>U(n, f), E=thermal, fast; measured fission fragments in time; deduced T<sub>1/2</sub>; Pb(n, xn)<sup>206</sup>Pb, E=5.1, 6.2, 7.0 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced isomeric transition, spin population; <sup>234</sup>U(n, f), E=0.95, 1.27 MeV; measured fission fragments in time; deduced <sup>235</sup>U shape isomer  $\sigma$ , T<sub>1/2</sub>; U(n, x)<sup>239</sup>U, E $\approx$ 1 MeV; measured E $\gamma$ , I $\gamma$ (t); deduced <sup>239</sup>U superdeformation ground state, isomeric transitions. NEPTUNE spectrometer. CONF Nice (Nucl Data for Sci and Technol) Proc,P53

2009B0ZV      NUCLEAR REACTIONS <sup>238</sup>U(d, f), (d, pf), E=124 MeV; measured A $\approx$ 70-160 yields, TKE. <sup>238</sup>U(d, p), E=124 MeV; measured  $\sigma$ (E,  $\theta$ ). CONF Dub(Nucl Struct and Dynamics,09) Proc,P140

2010AD13      NUCLEAR REACTIONS <sup>232</sup>Th(n,  $\gamma$ ), (n, 2n), (n, F)<sup>99</sup>Mo, <sup>235,238</sup>U(n,  $\gamma$ ), (n, F)<sup>99</sup>Mo / <sup>132</sup>Te / <sup>133</sup>I / <sup>135</sup>I / <sup>135</sup>Xe / <sup>140</sup>Ba / <sup>143</sup>Ce, E=thermal-1000 MeV [from <sup>208</sup>Pb(d, X), E=1.6 GeV spallation source]; measured E $\gamma$ , I $\gamma$  using HPGe detectors; deduced  $\sigma$ , reaction and transmutation rates. Comparison with simulations and TARC experimental data. JOUR ZAANE 43 159

2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

<sup>239</sup>Np      2008GRZS      RADIOACTIVITY <sup>239</sup>U( $\beta^-$ )[from <sup>238</sup>U(n,  $\gamma$ )]; measured E $\gamma$ , I $\gamma$ (t);deduced  $\gamma$  intensities; X-ray intensities. Compared to literature. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P264

<sup>239</sup>Pu      2008BRZV      NUCLEAR REACTIONS <sup>232</sup>Th, <sup>233</sup>Pa, <sup>234,235</sup>U, <sup>241,242</sup>Am, <sup>244</sup>Cm, <sup>237</sup>Np, <sup>238</sup>Pu(n,  $\gamma$ ), E=reactor spectrum; <sup>242</sup>Am, <sup>245</sup>Cm(n, f), E=reactor spectrum; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , A(fragment); deduced average  $\sigma$ ,  $\sigma$ (E=25.3meV). CONF Nice (Nucl Data for Sci and Technol) Proc,P619

2009K0ZV      RADIOACTIVITY <sup>253,254</sup>Es( $\alpha$ ), <sup>255</sup>Fm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin.,  $\gamma\gamma$ -coin.; deduced <sup>249,250</sup>Bk, <sup>251</sup>Cf E, J,  $\pi$ , vibrational bands; <sup>243</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced  $\alpha$  emission probabilities; <sup>249</sup>Cf( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced <sup>245</sup>Cm half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev

KEYNUMBERS AND KEYWORDS

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**A=239 (continued)**

<sup>239</sup>Bk      2010AN08      RADIOACTIVITY <sup>242,243</sup>Es, <sup>246,247</sup>Md( $\alpha$ ), (SF); <sup>246</sup>Md(EC) [from <sup>209</sup>Bi(<sup>40</sup>Ar, 2n), (<sup>40</sup>Ar, 3n), E=187, 198 MeV and subsequent decays]; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ,  $\alpha\gamma$ -,  $\alpha\alpha$ -coin; deduced Q, branching ratios, T<sub>1/2</sub>. Comparison with other data and calculations. JOUR ZAANE 43 35

**A=240**

<sup>240</sup>Pu      2008KOZK      NUCLEAR REACTIONS <sup>240</sup>Pu(n, n'), E $\approx$ 0.95-1.15 eV; <sup>242</sup>Pu(n, n'), E $\approx$ 2.45-2.85 eV; measured En, In; deduced resonance width. Studied effect of temperature. CONF Nice (Nucl Data for Sci and Technol) Proc,P623

                 2008KOZP      RADIOACTIVITY <sup>240</sup>Pu, <sup>245,246</sup>Cm, <sup>250</sup>Cf( $\alpha$ ) [from <sup>250</sup>Cf]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>,  $\alpha$ -decay energies, P $\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93

                 2008WAZN      NUCLEAR REACTIONS <sup>238,240,242</sup>Pu( $\gamma$ ,  $\gamma'$ ), E not given; measured Coulomb excitation E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma$ -coin; deduced levels, J,  $\pi$ , yrast, bands, inertia moments. Results on CD only. CONF E.Lansing (NS2008),P192,Wang

<sup>240</sup>Am      2008VIZX      NUCLEAR REACTIONS <sup>241</sup>Am(n, 2n), E=7.6-14.5 MeV; <sup>241</sup>Am(n,  $\gamma$ ), E $\approx$ 0.03 eV - 100 keV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to other data, ENDF / B-VII, JENDL-3.3, JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P551

                 2010SA15      NUCLEAR REACTIONS <sup>241</sup>Am(n, 2n), E=8-21 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ ,  $\sigma$ (E) by activation method. Comparison with nuclear model calculations using the TALYS code, and with evaluated data such as ENSDF / B-VII. JOUR PRVCA 81 064604

<sup>240</sup>Cm      2010DW01      ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=241**

<sup>241</sup>Pu      2008GUZN      NUCLEAR REACTIONS <sup>237</sup>Np, <sup>240</sup>Pu(n,  $\gamma$ ), E=1 eV-2 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced yield,  $\sigma$ , average resonance width. Compared to other data, ENDF / B-VII, JEFF-3.1, JENDL-3.3. Other data from transmission measurements. CONF Nice (Nucl Data for Sci and Technol) Proc,P627

                 2008KOZP      RADIOACTIVITY <sup>240</sup>Pu, <sup>245,246</sup>Cm, <sup>250</sup>Cf( $\alpha$ ) [from <sup>250</sup>Cf]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>,  $\alpha$ -decay energies, P $\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93

                 2010C002      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>151</sup>Sm, Pb, <sup>204,206,207,208</sup>Pb, <sup>209</sup>Bi, <sup>139</sup>La, <sup>232</sup>Th, <sup>24,25,26</sup>Mg, <sup>90,91,92,93,94,95,96</sup>Zr, <sup>186,187,188</sup>Os, <sup>233,234,235,236,238</sup>U, <sup>237</sup>Np, <sup>240</sup>Pu, <sup>241,243</sup>Am, <sup>245</sup>Cm(n,  $\gamma$ ), E=0.001-1 MeV; measured E $\gamma$ , I $\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643

KEYNUMBERS AND KEYWORDS

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**A=241 (continued)**

$^{241}\text{Am}$	2008XXZY	RADIOACTIVITY $^{241}\text{Am}(\alpha)$ , $^{242}\text{Cm}(\alpha)$ [from $^{241}\text{Am}(n, \gamma)^{242}\text{Am}(\beta^-)$ ]; measured $E\alpha$ , $I\alpha$ ; deduced $^{242}\text{Cm}$ yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P425
	2010M001	RADIOACTIVITY $^{241}\text{Am}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -coin.; deduced $\gamma$ -ray emission probabilities per decay. Comparison with Monte-Carlo code. JOUR ARISE 68 596
$^{241}\text{Cm}$	2010DW01	ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=242**

$^{242}\text{Pu}$	2008KOZK	NUCLEAR REACTIONS $^{240}\text{Pu}(n, n')$ , $E \approx 0.95\text{-}1.15$ eV; $^{242}\text{Pu}(n, n')$ , $E \approx 2.45\text{-}2.85$ eV; measured $E_n$ , $I_n$ ; deduced resonance width. Studied effect of temperature. CONF Nice (Nucl Data for Sci and Technol) Proc,P623
	2008KOZP	RADIOACTIVITY $^{240}\text{Pu}$ , $^{245,246}\text{Cm}$ , $^{250}\text{Cf}(\alpha)$ [from $^{250}\text{Cf}$ ]; measured $E\alpha$ , $I\alpha$ ; deduced $T_{1/2}$ , $\alpha$ -decay energies, $P\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93
	2008WAZN	NUCLEAR REACTIONS $^{238,240,242}\text{Pu}(\gamma, \gamma')$ , $E$ not given; measured Coulomb excitation $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced levels, $J$ , $\pi$ , yrast, bands, inertia moments. Results on CD only. CONF E.Lansing (NS2008),P192,Wang
$^{242}\text{Am}$	2008BRZW	NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}(n, \gamma)$ , $E$ =reactor spectrum; $^{242}\text{Am}$ , $^{245}\text{Cm}(n, f)$ , $E$ =reactor spectrum; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $A$ (fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619
	2008JUZY	NUCLEAR REACTIONS $^{243}\text{Am}(^3\text{He}, d)$ , $E=24, 30$ MeV; $^{243}\text{Am}(^3\text{He}, t)$ , $E=24, 30$ MeV; $^{243}\text{Am}(^3\text{He}, \alpha)$ , $E=24, 30$ MeV; measured $E\gamma$ , $I\gamma$ , $E$ (fragment), $\theta$ (fragment), $I$ (fragment); deduced $^{241,242,243}\text{Am}(n, f)$ $\sigma$ . Compared to data, ENDFB-VII, JENDL-3.3, JEFF-3.1 / A. CONF Nice (Nucl Data for Sci and Technol) Proc,P331
	2008VIZX	NUCLEAR REACTIONS $^{241}\text{Am}(n, 2n)$ , $E=7.6\text{-}14.5$ MeV; $^{241}\text{Am}(n, \gamma)$ , $E \approx 0.03$ eV - 100 keV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to other data, ENDF / B-VII, JENDL-3.3, JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P551
	2008XXZY	NUCLEAR REACTIONS $^{241}\text{Am}(n, f)$ , $E$ =reactor spectrum; measured $I$ (fragment); deduced $\sigma$ , isomeric transition, yield; $^{241}\text{Am}(n, \gamma)$ , $E$ =reactor spectrum; measured $E\alpha$ , $I\alpha$ ; deduced $\sigma$ , isomeric transition. Compared to other data and ENDF / B-VII. CONF Nice (Nucl Data for Sci and Technol) Proc,P425
	2010C002	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , $\text{Pb}$ , $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , $E=0.001\text{-}1$ MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643

KEYNUMBERS AND KEYWORDS

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**A=242 (continued)**

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| 2010HA24          |          | NUCLEAR REACTIONS $^{242m}\text{Am}$ ( $^{40}\text{Ar}$ , $^{40}\text{Ar}'$ ), E=170.5 MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin using Gammasphere array. $^{242}\text{Am}$ ; deduced levels, J, $\pi$ , rotational bands, Nilsson configurations, band parameters, alignments, B(E1), B(E2) and B(E3) strengths. Coulomb excitation. Comparison of alignment of the observed bands in $^{242}\text{Am}$ with single-particle alignments in $^{241}\text{Am}$ and with particle-rotor model calculations. JOUR PRVCA 82 044319 |
| 2010KE05          |          | NUCLEAR REACTIONS $^{243}\text{Am}$ ( $^3\text{He}$ , d), ( $^3\text{He}$ , t), ( $^3\text{He}$ , $\alpha$ ), E=24, 30 MeV; $^{242,243}\text{Cm}$ , $^{241}\text{Am}$ (n, F), E<10 MeV; measured surrogate reaction products; deduced fission $\sigma$ . Comparison with experimental data, JENDL-3.3, ENDF / B-VII.0 and JEFF-3.1 libraries. JOUR PYLBB 692 297   |
| $^{242}\text{Cm}$ | 2008XXZY | RADIOACTIVITY $^{241}\text{Am}(\alpha)$ , $^{242}\text{Cm}(\alpha)$ [from $^{241}\text{Am}$ (n, $\gamma$ ) $^{242}\text{Am}(\beta^-)$ ]; measured $E\alpha$ , $I\alpha$ ; deduced $^{242}\text{Cm}$ yield. CONF Nice (Nucl Data for Sci and Technol) Proc,P425   |
| 2010DW01          |          | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
| $^{242}\text{Es}$ | 2010AN08 | NUCLEAR REACTIONS $^{209}\text{Bi}$ ( $^{40}\text{Ar}$ , 2n), ( $^{40}\text{Ar}$ , 3n), E=187, 198 MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -, $\alpha\alpha$ -coin; deduced $\sigma$ . $^{242}\text{Es}$ , $^{243}\text{Es}$ , $^{246}\text{Fm}$ , $^{246,247}\text{Md}$ ; deduced levels, J, $\pi$ , Q, branching ratios, $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35  |
|                   | 2010AN08 | RADIOACTIVITY $^{242,243}\text{Es}$ , $^{246,247}\text{Md}(\alpha)$ , (SF); $^{246}\text{Md}(\text{EC})$ [from $^{209}\text{Bi}$ ( $^{40}\text{Ar}$ , 2n), ( $^{40}\text{Ar}$ , 3n), E=187, 198 MeV and subsequent decays]; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -, $\alpha\alpha$ -coin; deduced Q, branching ratios, $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35  |

**A=243**

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| $^{243}\text{Pu}$ | 2008LEZO | NUCLEAR REACTIONS $^{170}\text{Er}$ , $^{180}\text{Hf}$ , $^{242}\text{Pu}$ , $^{232}\text{Th}$ (n, $\gamma$ ), E=reactor spectrum; measured $E\gamma$ , $I\gamma$ ; deduced $^{171}\text{Er}$ , $^{181}\text{Hf}$ , $^{243}\text{Pu}$ , $^{233}\text{Pa}$ integral $\sigma$ ; compared to JEFF-3.1. CONF Nice (Nucl Data for Sci and Technol) Proc,P521   |
| $^{243}\text{Am}$ | 2008BRZW | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{233}\text{Pa}$ , $^{234,235}\text{U}$ , $^{241,242}\text{Am}$ , $^{244}\text{Cm}$ , $^{237}\text{Np}$ , $^{238}\text{Pu}$ (n, $\gamma$ ), E=reactor spectrum; $^{242}\text{Am}$ , $^{245}\text{Cm}$ (n, f), E=reactor spectrum; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , A(fragment); deduced average $\sigma$ , $\sigma(E=25.3\text{meV})$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P619 |
|                   | 2008PAZR | NUCLEAR REACTIONS $^{151}\text{Eu}$ (n, $\gamma$ ), E=0.2 eV - 100 keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ ; $^{242}\text{Am}$ (n, $\gamma$ ), E $\approx$ 2-100 eV; measured $E\gamma$ , $I\gamma$ , E(fragment), I(fragment), (fragment)- $\gamma$ coin.; deduced $\sigma$ . Compared to other data. DICEBOX, GEANT-4, DANCE. CONF Nice (Nucl Data for Sci and Technol) Proc,P491                                  |

KEYNUMBERS AND KEYWORDS

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**A=243 (continued)**

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|                   | 2009JAZY | NUCLEAR REACTIONS $^{242}\text{Am}(n, \gamma)$ , $E \approx 2\text{-}9$ eV isomeric state; $^{243}\text{Am}(n, \gamma)$ , $E \approx 10$ eV-250 keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ . DANCE. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P220,Jandel  |
| $^{243}\text{Cm}$ | 2008JUZY | NUCLEAR REACTIONS $^{243}\text{Am}(^3\text{He}, d)$ , $E=24, 30$ MeV; $^{243}\text{Am}(^3\text{He}, t)$ , $E=24, 30$ MeV; $^{243}\text{Am}(^3\text{He}, \alpha)$ , $E=24, 30$ MeV; measured $E\gamma$ , $I\gamma$ , $E(\text{fragment})$ , $\theta(\text{fragment})$ , $I(\text{fragment})$ ; deduced $^{241,242,243}\text{Am}(n, f)$ $\sigma$ . Compared to data, ENDFB-VII, JENDL-3.3, JEFF-3.1 / A. CONF Nice (Nucl Data for Sci and Technol) Proc,P331   |
|                   | 2009KOZV | RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ E, J, $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev |
|                   | 2010KE05 | NUCLEAR REACTIONS $^{243}\text{Am}(^3\text{He}, d)$ , $(^3\text{He}, t)$ , $(^3\text{He}, \alpha)$ , $E=24, 30$ MeV; $^{242,243}\text{Cm}$ , $^{241}\text{Am}(n, f)$ , $E < 10$ MeV; measured surrogate reaction products; deduced fission $\sigma$ . Comparison with experimental data, JENDL-3.3, ENDF / B-VII.0 and JEFF-3.1 libraries. JOUR PYLBB 692 297  |
| $^{243}\text{Es}$ | 2010AN08 | NUCLEAR REACTIONS $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ , $(^{40}\text{Ar}, 3n)$ , $E=187, 198$ MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -, $\alpha\alpha$ -coin; deduced $\sigma$ . $^{242}\text{Es}$ , $^{243}\text{Es}$ , $^{246}\text{Fm}$ , $^{246,247}\text{Md}$ ; deduced levels, J, $\pi$ , Q, branching ratios, $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35   |
|                   | 2010AN08 | RADIOACTIVITY $^{242,243}\text{Es}$ , $^{246,247}\text{Md}(\alpha)$ , (SF); $^{246}\text{Md}(\text{EC})$ [from $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ , $(^{40}\text{Ar}, 3n)$ , $E=187, 198$ MeV and subsequent decays]; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $\alpha\gamma$ -, $\alpha\alpha$ -coin; deduced Q, branching ratios, $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35   |

**A=244**

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| $^{244}\text{Pu}$ | 2008TAZA | NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, X)$ , $E=1450$ MeV; $^{249}\text{Cf}(^{207}\text{Pb}, X)$ , $E=1430$ MeV; measured $Z(\text{particle})$ , $A(\text{particle})$ , $E\gamma$ , $I\gamma$ , $(\text{particle})(\text{particle})$ -coin. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ , $^{253}\text{No}$ deduced levels, J, $\pi$ , bands, band crossing. $^{247}\text{Cm}$ , $^{249}\text{Cf}$ deduced g-factor. $^{244}\text{Pu}$ deduced neutron alignment. Results on CD only. CONF E.Lansing (NS2008),P184,Tandel |
| $^{244}\text{Am}$ | 2009JAZY | NUCLEAR REACTIONS $^{242}\text{Am}(n, \gamma)$ , $E \approx 2\text{-}9$ eV isomeric state; $^{243}\text{Am}(n, \gamma)$ , $E \approx 10$ eV-250 keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $\sigma$ . DANCE. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P220,Jandel  |
|                   | 2010C002 | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{151}\text{Sm}$ , $\text{Pb}$ , $^{204,206,207,208}\text{Pb}$ , $^{209}\text{Bi}$ , $^{139}\text{La}$ , $^{232}\text{Th}$ , $^{24,25,26}\text{Mg}$ , $^{90,91,92,93,94,95,96}\text{Zr}$ , $^{186,187,188}\text{Os}$ , $^{233,234,235,236,238}\text{U}$ , $^{237}\text{Np}$ , $^{240}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{245}\text{Cm}(n, \gamma)$ , $E=0.001\text{-}1$ MeV; measured $E\gamma$ , $I\gamma$ , fission fragments; deduced $\sigma$ . JOUR ARISE 68 643                     |

KEYNUMBERS AND KEYWORDS

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**A=244 (continued)**

- <sup>244</sup>Cm 2008JUZY NUCLEAR REACTIONS <sup>243</sup>Am(<sup>3</sup>He, d), E=24, 30 MeV; <sup>243</sup>Am(<sup>3</sup>He, t), E=24, 30 MeV; <sup>243</sup>Am(<sup>3</sup>He, α), E=24, 30 MeV; measured E $\gamma$ , I $\gamma$ , E(fragment),  $\theta$ (fragment), I(fragment); deduced <sup>241,242,243</sup>Am(n, f)  $\sigma$ . Compared to data, ENDFB-VII, JENDL-3.3, JEFF-3.1 / A. CONF Nice (Nucl Data for Sci and Technol) Proc,P331
- 2010KE05 NUCLEAR REACTIONS <sup>243</sup>Am(<sup>3</sup>He, d), (<sup>3</sup>He, t), (<sup>3</sup>He, α), E=24, 30 MeV; <sup>242,243</sup>Cm, <sup>241</sup>Am(n, F), E<10 MeV; measured surrogate reaction products; deduced fission  $\sigma$ . Comparison with experimental data, JENDL-3.3, ENDF / B-VII.0 and JEFF-3.1 libraries. JOUR PYLBB 692 297
- <sup>244</sup>Cf 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=245**

- <sup>245</sup>Cm 2008BRZW NUCLEAR REACTIONS <sup>232</sup>Th, <sup>233</sup>Pa, <sup>234,235</sup>U, <sup>241,242</sup>Am, <sup>244</sup>Cm, <sup>237</sup>Np, <sup>238</sup>Pu(n,  $\gamma$ ), E=reactor spectrum; <sup>242</sup>Am, <sup>245</sup>Cm(n, f), E=reactor spectrum; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , A(fragment); deduced average  $\sigma$ ,  $\sigma$ (E=25.3meV). CONF Nice (Nucl Data for Sci and Technol) Proc,P619
- 2008KOZP RADIOACTIVITY <sup>240</sup>Pu, <sup>245,246</sup>Cm, <sup>250</sup>Cf( $\alpha$ ) [from <sup>250</sup>Cf]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>,  $\alpha$ -decay energies, P $\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93
- 2009KOZV RADIOACTIVITY <sup>253,254</sup>Es( $\alpha$ ), <sup>255</sup>Fm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin.,  $\gamma\gamma$ -coin.; deduced <sup>249,250</sup>Bk, <sup>251</sup>Cf E, J,  $\pi$ , vibrational bands; <sup>243</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced  $\alpha$  emission probabilities; <sup>249</sup>Cf( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced <sup>245</sup>Cm half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev
- 2010G024 NUCLEAR REACTIONS <sup>244</sup>Cm(n,  $\gamma$ ), E<200 eV; measured neutron time of flight, E $\gamma$ , I $\gamma$ ; deduced the neutron capture  $\sigma$  ratios of <sup>244</sup>Cm resonances. JOUR JNSTA 47 1097
- <sup>245</sup>Cf 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
- 2010YE06 RADIOACTIVITY <sup>249</sup>Fm(EC), ( $\alpha$ ); measured E $\gamma$ ,  $\gamma$ ; deduced energy spectrum of  $\gamma$ -rays, E(ce). JOUR PRAMC 75 3

**A=246**

- <sup>246</sup>Cm 2008KOZP RADIOACTIVITY <sup>240</sup>Pu, <sup>245,246</sup>Cm, <sup>250</sup>Cf( $\alpha$ ) [from <sup>250</sup>Cf]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>,  $\alpha$ -decay energies, P $\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93



KEYNUMBERS AND KEYWORDS

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A=246 (*continued*)

- 2008TAZE NUCLEAR REACTIONS  $^{208}\text{Pb}(^{48}\text{Ca}, x)^{254}\text{No}$ , E not given;  $^{206}\text{Pb}(^{48}\text{Ca}, x)^{252}\text{No}$ , E not given;  $^{204}\text{Hg}(^{48}\text{Ca}, x)^{250}\text{Fm}$ , E not given;  $^{248}\text{Cm}(^{209}\text{Bi}, x)^{248}\text{Cm}$ , E not given;  $^{248}\text{Cm}(^{209}\text{Bi}, x)^{246}\text{Cm}$ , E not given; measured  $E\gamma$ ,  $I\gamma(t)$ ,  $I(\text{ce})$ ; deduced K-isomer decay,  $T_{1/2}$ , 2qp configurations. Compared to calculations of the same group (another presentation at the conference). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P105
- 2010C002 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{151}\text{Sm}$ , Pb,  $^{204,206,207,208}\text{Pb}$ ,  $^{209}\text{Bi}$ ,  $^{139}\text{La}$ ,  $^{232}\text{Th}$ ,  $^{24,25,26}\text{Mg}$ ,  $^{90,91,92,93,94,95,96}\text{Zr}$ ,  $^{186,187,188}\text{Os}$ ,  $^{233,234,235,236,238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{240}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{245}\text{Cm}(n, \gamma)$ , E=0.001-1 MeV; measured  $E\gamma$ ,  $I\gamma$ , fission fragments; deduced  $\sigma$ . JOUR ARISE 68 643
- $^{246}\text{Cf}$  2010DW01 ATOMIC MASSES  $^{232}\text{U}$ ,  $^{236,238}\text{Pu}$ ,  $^{240,241,242}\text{Cm}$ ,  $^{244,245,246}\text{Cf}$ ,  $^{248,249,250}\text{Fm}$ ,  $^{252,253,254}\text{No}$ ,  $^{256,257,258}\text{Rf}$ ,  $^{260,261,262}\text{Sg}$ ,  $^{264,265,266}\text{Hs}$ ,  $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
- $^{246}\text{Fm}$  2010AN08 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ ,  $(^{40}\text{Ar}, 3n)$ , E=187, 198 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma^-$ ,  $\alpha\alpha$ -coin; deduced  $\sigma$ .  $^{242}\text{Es}$ ,  $^{243}\text{Es}$ ,  $^{246}\text{Fm}$ ,  $^{246,247}\text{Md}$ ; deduced levels, J,  $\pi$ , Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35
- 2010AN08 RADIOACTIVITY  $^{242,243}\text{Es}$ ,  $^{246,247}\text{Md}(\alpha)$ , (SF);  $^{246}\text{Md}(\text{EC})$  [from  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ ,  $(^{40}\text{Ar}, 3n)$ , E=187, 198 MeV and subsequent decays]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma^-$ ,  $\alpha\alpha$ -coin; deduced Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35
- 2010SV01 RADIOACTIVITY  $^{246}\text{Fm}(\text{SF})$  [from  $^{208}\text{Pb}(^{40}\text{Ar}, 2n)$ , E=186 MeV]; measured  $E_n$ ,  $\ln(\theta)$ ,  $E\alpha$ ,  $I\alpha$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ , (particle)n-coin; deduced neutron multiplicity,  $T_{1/2}$ , spontaneous fission branching ratio. JOUR ZAANE 44 393
- 2010SV01 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{40}\text{Ar}, 2n)$ , E=186 MeV; measured  $\sigma$ . JOUR ZAANE 44 393
- 2010SVZZ RADIOACTIVITY  $^{246}\text{Fm}(\text{SF})$  [from  $^{208}\text{Pb}(^{40}\text{Ar}, 2n)$ , E not given]; measured fission neutrons,  $T_{1/2}$ .  $^{246}\text{Fm}$ ; deduced SF-branching, medium neutrons per SF. Cyclotron, mass-separator, neutron detector. CONF St.-Petersburg,P199,Svirikhin
- $^{246}\text{Md}$  2010AN08 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ ,  $(^{40}\text{Ar}, 3n)$ , E=187, 198 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma^-$ ,  $\alpha\alpha$ -coin; deduced  $\sigma$ .  $^{242}\text{Es}$ ,  $^{243}\text{Es}$ ,  $^{246}\text{Fm}$ ,  $^{246,247}\text{Md}$ ; deduced levels, J,  $\pi$ , Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35
- 2010AN08 RADIOACTIVITY  $^{242,243}\text{Es}$ ,  $^{246,247}\text{Md}(\alpha)$ , (SF);  $^{246}\text{Md}(\text{EC})$  [from  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ ,  $(^{40}\text{Ar}, 3n)$ , E=187, 198 MeV and subsequent decays]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma^-$ ,  $\alpha\alpha$ -coin; deduced Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35

## A=247

- $^{247}\text{Cm}$  2008TAZA NUCLEAR REACTIONS  $^{248}\text{Cm}(^{209}\text{Bi}, \text{X})$ , E=1450 MeV;  $^{249}\text{Cf}(^{207}\text{Pb}, \text{X})$ , E=1430 MeV; measured Z(particle), A(particle),  $E\gamma$ ,  $I\gamma$ , (particle)(particle)-coin.  $^{247,249}\text{Cm}$ ,  $^{249}\text{Cf}$ ,  $^{253}\text{No}$  deduced levels, J,  $\pi$ , bands, band crossing.  $^{247}\text{Cm}$ ,  $^{249}\text{Cf}$  deduced g-factor.  $^{244}\text{Pu}$  deduced neutron alignment. Results on CD only. CONF E.Lansing (NS2008),P184,Tandel
- 2010TA22 NUCLEAR REACTIONS  $^{248}\text{Cm}(^{209}\text{Bi}, ^{210}\text{Bi})^{247}\text{Cm}$ , E=1450 MeV;  $^{250}\text{Cm}(^{209}\text{Bi}, ^{208}\text{Bi})^{249}\text{Cm}$ , E=1450 MeV;  $^{249}\text{Cf}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , E=1430 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{247,249}\text{Cm}$ ,  $^{249}\text{Cf}$ ; deduced levels, J,  $\pi$ , ( $g_K-g_R$ ) /  $Q_0$ , alignments, Nilsson configurations, and rotational bands.  $^{197}\text{Au}$ ,  $^{207}\text{Pb}$ ,  $^{208}\text{Bi}$ ,  $^{210}\text{Bi}$ ; measured  $E\gamma$ . Systematics of alignments for  $^{244}\text{Pu}$ ,  $^{246}\text{Cm}$ ,  $^{248}\text{Cf}$ ,  $^{250}\text{Fm}$  and  $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301
- $^{247}\text{Md}$  2010AN08 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ , ( $^{40}\text{Ar}, 3n$ ), E=187, 198 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma$ -,  $\alpha\alpha$ -coin; deduced  $\sigma$ .  $^{242}\text{Es}$ ,  $^{243}\text{Es}$ ,  $^{246}\text{Fm}$ ,  $^{246,247}\text{Md}$ ; deduced levels, J,  $\pi$ , Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35
- 2010AN08 RADIOACTIVITY  $^{242,243}\text{Es}$ ,  $^{246,247}\text{Md}(\alpha)$ , (SF);  $^{246}\text{Md}(\text{EC})$  [from  $^{209}\text{Bi}(^{40}\text{Ar}, 2n)$ , ( $^{40}\text{Ar}, 3n$ ), E=187, 198 MeV and subsequent decays]; measured  $E\gamma$ ,  $I\gamma$ ,  $E\alpha$ ,  $I\alpha$ ,  $\alpha\gamma$ -,  $\alpha\alpha$ -coin; deduced Q, branching ratios,  $T_{1/2}$ . Comparison with other data and calculations. JOUR ZAANE 43 35

## A=248

- $^{248}\text{Cm}$  2008TAZE NUCLEAR REACTIONS  $^{208}\text{Pb}(^{48}\text{Ca}, x)^{254}\text{No}$ , E not given;  $^{206}\text{Pb}(^{48}\text{Ca}, x)^{252}\text{No}$ , E not given;  $^{204}\text{Hg}(^{48}\text{Ca}, x)^{250}\text{Fm}$ , E not given;  $^{248}\text{Cm}(^{209}\text{Bi}, x)^{248}\text{Cm}$ , E not given;  $^{248}\text{Cm}(^{209}\text{Bi}, x)^{246}\text{Cm}$ , E not given; measured  $E\gamma$ ,  $I\gamma(t)$ , I(ce); deduced K-isomer decay,  $T_{1/2}$ , 2qp configurations. Compared to calculations of the same group (another presentation at the conference). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P105
- 2009RZ02 RADIOACTIVITY  $^{248}\text{Cm}$ ,  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ,  $\gamma(t)$ , and isomer half-lives using EUROGAM2 array.  $^{142,144}\text{Cs}$ ; deduced levels, J,  $\pi$ , bands, isomers and configurations. Comparison with quasiparticle rotor model (QPRM) calculations. JOUR PRVCA 80 064317
- 2010RZ01 RADIOACTIVITY  $^{248}\text{Cm}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using EUROGAM2 array.  $^{145}\text{Cs}$ ; deduced levels, J,  $\pi$ , multiplicities, bands, configurations, electric dipole moment  $D_0$ .  $^{101,102}\text{Nb}$ ; measured  $E\gamma$ . Comparison with quasiparticle-rotor model calculations. Z=54-64, N=84-92; systematics of  $D_0$  parameter for even nuclei of even neutron number. JOUR PRVCA 82 017301

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**A=248 (continued)**

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| 2010SI03          |          | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ ; deduced levels, J, $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations. $^{151}\text{Ce}$ , $^{153}\text{Nd}$ , $^{155}\text{Sm}$ , $^{157}\text{Gd}$ , $^{159}\text{Dy}$ ; systematics of bandheads. JOUR PRVCA 81 024313  |
| 2010SI17          |          | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays. $^{91,93,95}\text{Rb}$ ; deduced levels, J, $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in $^{89,91,93,95}\text{Rb}$ . $^{93}\text{Rb}$ , $^{95}\text{Y}$ ; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302  |
| $^{248}\text{Cf}$ | 2010TA10 | NUCLEAR REACTIONS $^{249,250,251}\text{Cf}(\text{}^{18}\text{O}, \text{}^{16}\text{O})$ , $(\text{}^{18}\text{O}, \text{n}^{16}\text{O})$ , $(\text{}^{18}\text{O}, \text{}^{17}\text{O})$ , $(\text{}^{18}\text{O}, \text{n}^{17}\text{O})$ , $(\text{}^{18}\text{O}, \text{}^{18}\text{O})$ , $(\text{}^{18}\text{O}, \text{n}^{18}\text{O})$ , $(\text{}^{18}\text{O}, \text{n}^{18}\text{O})$ , , E=153 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin. $^{248,250,252}\text{Cf}$ ; deduced levels, J, $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63% $^{249}\text{Cf}$ , 13% $^{250}\text{Cf}$ , 24% $^{251}\text{Cf}$ . JOUR PRVCA 81 057303 |
| $^{248}\text{Es}$ | 2010ZH36 | NUCLEAR REACTIONS $^{48}\text{Ca}(\text{}^{48}\text{Ca}, \pi^+)$ , $(\text{}^{48}\text{Ca}, \pi^-)$ , $^{124}\text{Sn}(\text{}^{124}\text{Sn}, \pi^+)$ , $(\text{}^{124}\text{Sn}, \pi^-)$ , $^{197}\text{Au}(\text{}^{197}\text{Au}, \pi^+)$ , $(\text{}^{197}\text{Au}, \pi^-)$ , E=0.25-0.6 GeV / nucleon; measured pion production yield ratios; deduced radii, symmetry energy. Comparison with isobar model. JOUR NUPAB 834 567c   |
| $^{248}\text{Fm}$ | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
| $^{248}\text{Md}$ | 2010ZH36 | NUCLEAR REACTIONS $^{48}\text{Ca}(\text{}^{48}\text{Ca}, \pi^+)$ , $(\text{}^{48}\text{Ca}, \pi^-)$ , $^{124}\text{Sn}(\text{}^{124}\text{Sn}, \pi^+)$ , $(\text{}^{124}\text{Sn}, \pi^-)$ , $^{197}\text{Au}(\text{}^{197}\text{Au}, \pi^+)$ , $(\text{}^{197}\text{Au}, \pi^-)$ , E=0.25-0.6 GeV / nucleon; measured pion production yield ratios; deduced radii, symmetry energy. Comparison with isobar model. JOUR NUPAB 834 567c   |

**A=249**

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| $^{249}\text{Cm}$ | 2008TAZA | NUCLEAR REACTIONS $^{248}\text{Cm}(\text{}^{209}\text{Bi}, \text{X})$ , E=1450 MeV; $^{249}\text{Cf}(\text{}^{207}\text{Pb}, \text{X})$ , E=1430 MeV; measured Z(particle), A(particle), $E\gamma$ , $I\gamma$ , (particle)(particle)-coin. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ , $^{253}\text{No}$ deduced levels, J, $\pi$ , bands, band crossing. $^{247}\text{Cm}$ , $^{249}\text{Cf}$ deduced g-factor. $^{244}\text{Pu}$ deduced neutron alignment. Results on CD only. CONF E.Lansing (NS2008),P184,Tandel   |
|                   | 2010TA22 | NUCLEAR REACTIONS $^{248}\text{Cm}(\text{}^{209}\text{Bi}, \text{}^{210}\text{Bi})^{247}\text{Cm}$ , E=1450 MeV; $^{250}\text{Cm}(\text{}^{209}\text{Bi}, \text{}^{208}\text{Bi})^{249}\text{Cm}$ , E=1450 MeV; $^{249}\text{Cf}(\text{}^{207}\text{Pb}, \text{}^{207}\text{Pb}')$ , E=1430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ ; deduced levels, J, $\pi$ , ( $g_K$ - $g_R$ ) / $Q_0$ , alignments, Nilsson configurations, and rotational bands. $^{197}\text{Au}$ , $^{207}\text{Pb}$ , $^{208}\text{Bi}$ , $^{210}\text{Bi}$ ; measured $E\gamma$ . Systematics of alignments for $^{244}\text{Pu}$ , $^{246}\text{Cm}$ , $^{248}\text{Cf}$ , $^{250}\text{Fm}$ and $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301 |

KEYNUMBERS AND KEYWORDS

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**A=249 (continued)**

$^{249}\text{Bk}$	2009KOZV	RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ E, J, $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev
$^{249}\text{Cf}$	2008TAZA	NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, \text{X})$ , $E=1450$ MeV; $^{249}\text{Cf}(^{207}\text{Pb}, \text{X})$ , $E=1430$ MeV; measured Z(particle), A(particle), $E\gamma$ , $I\gamma$ , (particle)(particle)-coin. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ , $^{253}\text{No}$ deduced levels, J, $\pi$ , bands, band crossing. $^{247}\text{Cm}$ , $^{249}\text{Cf}$ deduced g-factor. $^{244}\text{Pu}$ deduced neutron alignment. Results on CD only. CONF E.Lansing (NS2008),P184,Tandel
	2009KOZV	RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ E, J, $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev
	2010TA10	NUCLEAR REACTIONS $^{249,250,251}\text{Cf}(^{18}\text{O}, ^{16}\text{O})$ , $(^{18}\text{O}, n^{16}\text{O})$ , $(^{18}\text{O}, ^{17}\text{O})$ , $(^{18}\text{O}, n^{17}\text{O})$ , $(^{18}\text{O}, ^{18}\text{O})$ , $(^{18}\text{O}, n^{18}\text{O})$ , $(^{18}\text{O}, n^{18}\text{O})$ , $E=153$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin. $^{248,250,252}\text{Cf}$ ; deduced levels, J, $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63% $^{249}\text{Cf}$ , 13% $^{250}\text{Cf}$ , 24% $^{251}\text{Cf}$ . JOUR PRVCA 81 057303
	2010TA22	NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, ^{210}\text{Bi})^{247}\text{Cm}$ , $E=1450$ MeV; $^{250}\text{Cm}(^{209}\text{Bi}, ^{208}\text{Bi})^{249}\text{Cm}$ , $E=1450$ MeV; $^{249}\text{Cf}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , $E=1430$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ ; deduced levels, J, $\pi$ , ( $g_K-g_R$ ) / $Q_0$ , alignments, Nilsson configurations, and rotational bands. $^{197}\text{Au}$ , $^{207}\text{Pb}$ , $^{208}\text{Bi}$ , $^{210}\text{Bi}$ ; measured $E\gamma$ . Systematics of alignments for $^{244}\text{Pu}$ , $^{246}\text{Cm}$ , $^{248}\text{Cf}$ , $^{250}\text{Fm}$ and $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301
$^{249}\text{Es}$	2010YE06	RADIOACTIVITY $^{249}\text{Fm}(\text{EC})$ , ( $\alpha$ ); measured $E\gamma$ , $\gamma$ ; deduced energy spectrum of $\gamma$ -rays, $E(\text{ce})$ . JOUR PRAMC 75 3
$^{249}\text{Fm}$	2010DW01	ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
	2010YE06	RADIOACTIVITY $^{249}\text{Fm}(\text{EC})$ , ( $\alpha$ ); measured $E\gamma$ , $\gamma$ ; deduced energy spectrum of $\gamma$ -rays, $E(\text{ce})$ . JOUR PRAMC 75 3
$^{249}\text{Md}$	2010HE11	RADIOACTIVITY $^{253}\text{Lr}$ , $^{257}\text{Db}$ , $^{261}\text{Bh}(\alpha)$ [ $^{209}\text{Bi}(^{54}\text{Cr}, 2n)$ , $E=271$ MeV]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $\alpha\gamma$ -coin; calculated $T_{1/2}$ , hindrance factors. $^{257}\text{Db}$ , $^{261}\text{Bh}$ ; deduced levels, J, $\pi$ . JOUR ZAANE 43 175

## A=250

- <sup>250</sup>Bk 2009KOZV RADIOACTIVITY <sup>253,254</sup>Es( $\alpha$ ), <sup>255</sup>Fm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin.,  $\gamma\gamma$ -coin.; deduced <sup>249,250</sup>Bk, <sup>251</sup>Cf E, J,  $\pi$ , vibrational bands; <sup>243</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced  $\alpha$  emission probabilities; <sup>249</sup>Cf( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced <sup>245</sup>Cm half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev
- 2010GU05 NUCLEAR MOMENTS <sup>253,254</sup>Es, <sup>255</sup>Fm, <sup>250</sup>Bk; measured hyperfine spectra, angular distributions of  $\alpha$  particles and  $\gamma$ -rays; deduced magnetic moments. JOUR BRSPÉ 74 535
- <sup>250</sup>Cf 2008KOZP RADIOACTIVITY <sup>240</sup>Pu, <sup>245,246</sup>Cm, <sup>250</sup>Cf( $\alpha$ ) [from <sup>250</sup>Cf]; measured E $\alpha$ , I $\alpha$ ; deduced T<sub>1/2</sub>,  $\alpha$ -decay energies, P $\alpha$ . Compared to published data. CONF Nice (Nucl Data for Sci and Technol) Proc,P93
- 2010TA10 NUCLEAR REACTIONS <sup>249,250,251</sup>Cf(<sup>18</sup>O, <sup>16</sup>O), (<sup>18</sup>O, n<sup>16</sup>O), (<sup>18</sup>O, <sup>17</sup>O), (<sup>18</sup>O, n<sup>17</sup>O), (<sup>18</sup>O, <sup>18</sup>O), (<sup>18</sup>O, n<sup>18</sup>O), (<sup>18</sup>O, n<sup>18</sup>O), , E=153 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin. <sup>248,250,252</sup>Cf; deduced levels, J,  $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63% <sup>249</sup>Cf, 13% <sup>250</sup>Cf, 24% <sup>251</sup>Cf. JOUR PRVCA 81 057303
- 2010VE03 RADIOACTIVITY <sup>250,252</sup>Cf(SF); measured ternary  $\alpha$ , triton and <sup>6</sup>He emission probabilities, fission spectra,  $\alpha$ -spectra, triton-spectra and <sup>6</sup>He-spectra using energy loss telescope detectors. Comparison with other data and systematics. JOUR NUPAB 837 176
- <sup>250</sup>Es 2010HE10 RADIOACTIVITY <sup>254</sup>Md, <sup>254</sup>No( $\alpha$ ), (EC) [from <sup>208</sup>Pb(<sup>48</sup>Ca, 2n), E=213.6, 218.4 MeV]; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , E(ce), I(ce),  $\gamma\gamma$ -,  $\gamma$ (ce)-coin; deduced branching ratios, bands, levels, J,  $\pi$ , T<sub>1/2</sub>, configurations. JOUR ZAANE 43 55
- <sup>250</sup>Fm 2008ROZW NUCLEAR REACTIONS <sup>204</sup>Hg(<sup>48</sup>Ca, 2n), E=211 MeV; measured E(ce), I(ce), E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, delayed E $\gamma$ , delayed I $\gamma$ ; deduced levels, J,  $\pi$ , branching, g-factor, B(M1), B(E2), isomeric transition. Comparison with <sup>252,254</sup>No. Results on CD only. CONF E.Lansing (NS2008),P171,Rostron
- 2008TAZE NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>48</sup>Ca, x)<sup>254</sup>No, E not given; <sup>206</sup>Pb(<sup>48</sup>Ca, x)<sup>252</sup>No, E not given; <sup>204</sup>Hg(<sup>48</sup>Ca, x)<sup>250</sup>Fm, E not given; <sup>248</sup>Cm(<sup>209</sup>Bi, x)<sup>248</sup>Cm, E not given; <sup>248</sup>Cm(<sup>209</sup>Bi, x)<sup>246</sup>Cm, E not given; measured E $\gamma$ , I $\gamma$ (t), I(ce); deduced K-isomer decay, T<sub>1/2</sub>, 2qp configurations. Compared to calculations of the same group (another presentation at the conference). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P105
- 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
- 2010HE10 RADIOACTIVITY <sup>254</sup>Md, <sup>254</sup>No( $\alpha$ ), (EC) [from <sup>208</sup>Pb(<sup>48</sup>Ca, 2n), E=213.6, 218.4 MeV]; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , E(ce), I(ce),  $\gamma\gamma$ -,  $\gamma$ (ce)-coin; deduced branching ratios, bands, levels, J,  $\pi$ , T<sub>1/2</sub>, configurations. JOUR ZAANE 43 55

KEYNUMBERS AND KEYWORDS

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**A=251**

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| $^{251}\text{Cm}$ | 2010TA22 | NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, ^{210}\text{Bi})^{247}\text{Cm}$ , E=1450 MeV; $^{250}\text{Cm}(^{209}\text{Bi}, ^{208}\text{Bi})^{249}\text{Cm}$ , E=1450 MeV; $^{249}\text{Cf}(^{207}\text{Pb}, ^{207}\text{Pb}')$ , E=1430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ ; deduced levels, J, $\pi$ , ( $g_K$ - $g_R$ ) / $Q_0$ , alignments, Nilsson configurations, and rotational bands. $^{197}\text{Au}$ , $^{207}\text{Pb}$ , $^{208}\text{Bi}$ , $^{210}\text{Bi}$ ; measured $E\gamma$ . Systematics of alignments for $^{244}\text{Pu}$ , $^{246}\text{Cm}$ , $^{248}\text{Cf}$ , $^{250}\text{Fm}$ and $^{252}\text{No}$ , Comparison with Woods-Saxon cranking calculations. JOUR PRVCA 82 041301 |
| $^{251}\text{Cf}$ | 2009KOZV | RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ E, J, $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev  |
|                   | 2010TA10 | NUCLEAR REACTIONS $^{249,250,251}\text{Cf}(^{18}\text{O}, ^{16}\text{O})$ , ( $^{18}\text{O}, n^{16}\text{O}$ ), ( $^{18}\text{O}, ^{17}\text{O}$ ), ( $^{18}\text{O}, n^{17}\text{O}$ ), ( $^{18}\text{O}, ^{18}\text{O}$ ), ( $^{18}\text{O}, n^{18}\text{O}$ ), ( $^{18}\text{O}, n^{18}\text{O}$ ), , E=153 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin. $^{248,250,252}\text{Cf}$ ; deduced levels, J, $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63% $^{249}\text{Cf}$ , 13% $^{250}\text{Cf}$ , 24% $^{251}\text{Cf}$ . JOUR PRVCA 81 057303  |
| $^{251}\text{Md}$ | 2008JEZZ | RADIOACTIVITY $^{256}\text{Rf}$ [from $^{208}\text{Pb}(^{50}\text{Ti}, 2n)$ , E=243 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, E(e), I(e), (e)(e)-coin, (e) $\gamma$ -coin, particle- $\gamma$ -coin; deduced E, J, $\pi$ , isomeric transitions; calculated E, J, $\pi$ ; $^{255}\text{Lr}(\alpha)$ [from $^{209}\text{Bi}(^{48}\text{Ca}, 2n)$ ]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, E(e), I(e), $E\alpha$ , $I\alpha$ , (e) $\alpha$ -coin, (e) $\gamma$ -coin, X-rays, particle- $\gamma$ -coin; deduced $^{255}\text{Lr}$ E, J, $\pi$ , rotational band, isomer decay $T_{1/2}$ , moment of inertia. Results on CD only. CONF E.Lansing (NS2008),P29,Jeppesen  |

**A=252**

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| $^{252}\text{Cf}$ | 2008BLZX | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $\gamma$ multiplicity distribution. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P200   |
|                   | 2008DAZT | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced $^{100,102}\text{Zr}$ , $^{104,106,108}\text{Mo}$ , $^{146,148}\text{Ce}$ $T_{1/2}$ , g-factor. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P363   |
|                   | 2008GOZQ | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -coin; deduced $^{142}\text{Xe}$ , $^{152}\text{Nd}$ angular correlations, g-factor, $^{114}\text{Pd}$ mixing ratio, $^{108,110}\text{Ru}$ E, J, $\pi$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P607 |
|                   | 2008HAZD | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; calculated average neutron energy, neutron multiplicity in coin with fragment mass. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P401  |
|                   | 2008HAZH | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ - $\gamma$ -coin.; $^{108,110,112}\text{Ru}$ , $^{106}\text{Mo}$ ; deduced band structures, possible chiral doublets. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P387,Hamilton  |

**A=252 (continued)**

- 2008JAZV RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, (cluster) $\gamma$ -coin; deduced (cluster)- $\gamma$ -multiplicity, total and average  $E_\gamma$ . CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P440
- 2008JOZW RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma\text{-}\gamma$ -coin.;  $^{144}\text{Cs}$ ; deduced energy levels. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P395,Jones
- 2008LUZW RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $^{110,111}\text{Tc}$  E, J,  $\pi$ ; calculated  $^{110,111}\text{Tc}$  E, J,  $\pi$ , deformation parameters ( $\varepsilon_2$ ,  $\gamma$ ) using RTRP model. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P709
- 2008LUZX RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ ,  $\gamma\gamma(\theta)$ -coin;  $^{110,112}\text{Ru}$  deduced E, J,  $\pi$ , bands, moment of inertia. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P593
- 2008LUZY RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin; deduced  $^{137,138}\text{Cs}$  E, J,  $\pi$ , Cs, N=82, N=83 yrast states,  $^{138}\text{Cs}$  internal conversion coefficients,  $\gamma$ -multipolarity. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P65
- 2008ORZY RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin; deduced  $^{100,101,102}\text{Zr}$ ,  $^{102,103,104,105,106,108}\text{Mo}$  g-factor; calculated g-factor using IBA2. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P355
- 2008RAZY RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.;  $^{148}\text{Ce}$ ,  $^{108}\text{Ru}$ ; deduced angular correlation of  $\gamma$  cascades, mixing ratio. CONF Vico Equense(Chang.Facets of Nucl.Struct.) Proc,P57,Ramayya
- 2008ZHZZ RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin; deduced  $^{105,108}\text{Mo}$ ,  $^{112}\text{Ru}$  E, J,  $\pi$ , bands, yrast. Compared to other Mo isotopes. CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P612
- 2009DI12 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{109}\text{Ru}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.; deduced high-spin states, level scheme, ground state and negative and positive parity bands. JOUR CPCHC 33 s01 154
- 2009GU32 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{106}\text{Tc}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , collective bands. Total Routhian surface (TRS) calculations. JOUR CPCHC 33 s01 182
- 2009RZ02 RADIOACTIVITY  $^{248}\text{Cm}$ ,  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ,  $\gamma(t)$ , and isomer half-lives using EUROAM2 array.  $^{142,144}\text{Cs}$ ; deduced levels, J,  $\pi$ , bands, isomers and configurations. Comparison with quasiparticle rotor model (QPRM) calculations. JOUR PRVCA 80 064317
- 2009WA31 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{104}\text{Nb}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , rotational bands. Comparison with experimental data. JOUR CPCHC 33 s01 158
- 2009YA26 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{102}\text{Mo}$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\text{-}\gamma$ -coin.; deduced high-spin states, level scheme, J,  $\pi$ , bands. Systematic comparison with experimental data. JOUR CPCHC 33 s01 199

**A=252 (continued)**

- 2009ZH50 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{106}\text{Mo}$ ,  $^{110,112}\text{Ru}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma$ - $\gamma$ -coin.; deduced high-spin states, chiral doublet vibrational bands, J,  $\pi$ , energies,  $B(E2) / B(M1)$ , branching ratios. 3D-Tilted Axis Cranking (TAC) calculations. JOUR CPCHC 33 s01 145
- 2010ER04 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin., neutron- $\gamma$ -coin.; deduced high-energy bremsstrahlung emission during spontaneous fission, energy spectrum of photons. JOUR IMPEE 19 1183
- 2010GU07 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.;  $^{109}\text{Tc}$ ; deduced level scheme, high spin states, yrast bands interpretation. Cranked shell model calculations. JOUR CPLEE 27 062501
- 2010HW03 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ , (x ray)- $\gamma$  coin, half-lives by  $\gamma(t)$  using Gammasphere array.  $^{93}\text{Kr}$ ,  $^{151,153}\text{Pr}$ ,  $^{157}\text{Sm}$ ; deduced levels, J,  $\pi$ , bands, configurations, conversion coefficients,  $B(E1) / B(E2)$  ratios.  $^{96,97,98,99}\text{Y}$ ,  $^{149,150}\text{Pr}$ ; measured  $E\gamma$ . JOUR PRVCA 82 034308
- 2010LI03 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{135}\text{Te}$ ,  $^{136}\text{I}$ ,  $^{137}\text{Xe}$ ,  $^{138}\text{Cs}$ ; deduced levels, J,  $\pi$ . Comparison with shell model calculations. JOUR PRVCA 81 014316
- 2010LI10 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{140}\text{Cs}$ ; deduced levels, J,  $\pi$ , configurations.  $^{107,108,109,110}\text{Tc}$ ; measured  $E\gamma$ . Comparison with level structure of  $^{138}\text{I}$  and with systematics of N=85 isotones of  $^{137}\text{Te}$ ,  $^{138}\text{I}$ ,  $^{139}\text{Xe}$ ,  $^{140}\text{Cs}$ ,  $^{141}\text{Ba}$ ,  $^{145}\text{Nd}$ ,  $^{146}\text{Pm}$ ,  $^{147}\text{Sm}$ ,  $^{148}\text{Eu}$  and  $^{149}\text{Gd}$ . JOUR PRVCA 81 037302
- 2010LI14 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ .  $^{142}\text{Cs}$ ; deduced levels, J,  $\pi$ , multipolarity, bands,  $B(E1)$ ,  $B(E2)$ , electric dipole moments.  $^{106,107}\text{Tc}$ ; measured  $E\gamma$ . Systematics of electric dipole moments for Xe (N=85-88), Cs (N=86-88), Ba (N=85-90), La (N=88, 90), Ce (N=86, 88, 90), Nd (N=86, 88, 90), Sm (N=86, 88). JOUR PRVCA 81 057304
- 2010LI24 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma(\theta)$ ,  $\gamma\gamma$ -coin.  $^{139,142}\text{Cs}$ ; deduced high-spin states, levels, J,  $\pi$ , bands, ICC,  $\delta$ .  $^{139}\text{Cs}$  calculated levels, J,  $\pi$ ,  $\delta$  using shell model. JOUR NUPAB 834 78c
- 2010LU02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$  using Gammasphere.  $^{141,144}\text{Cs}$ ; deduced levels, J, p, conversion coefficients, multipolarities, bands, parity doublets, simplex structure,  $B(E1) / B(E2)$ , dipole moment. Comparison with level structure of  $^{143}\text{Cs}$  and with systematics of adjacent N=85-92 nuclei.  $^{105,106,107,108}\text{Tc}$ ; measured  $E\gamma$ . JOUR NUPAB 838 1
- 2010LUZZ RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{108,110,112}\text{Ru}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced level schemes, mixing ratios, bands, J,  $\pi$ , angular correlations, level energies, corrected values for  $\gamma$ -cascade in  $^{110}\text{Ru}$ . PC J H. Hamilton, 2/11/2010
- 2010PA08 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured decay products; deduced tripartition in fission. JOUR IMPEE 19 718



**A=252 (continued)**

- 2010PA15 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced photon yields, energy spectrum, the width of the giant dipole resonance (GDR). Comparison with thermal shape fluctuation model (TSFM). JOUR PYLBB 690 473
- 2010PY02 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E(\text{fragment})$ ,  $I(\text{fragment}, \theta)$ ,  $(\text{fragment})(\text{fragment})$ -coin from fission; deduced fission fragment mass correlations. JOUR ZAANE 45 29
- 2010R004 NUCLEAR REACTIONS  $^{235}\text{U}(\text{n}, \text{F})$ ,  $E=0.1\text{-}1$  keV; measured fission fragments, fission  $\sigma$ , yield, TKE trends and fission mode ratio trends in resonance region, pre- and post-neutron emission mass distributions in lead-slowing down spectrometer (LSDS).  $^{252}\text{Cf}(\text{SF})$ ; used as a reference. Comparisons with ENDF / B-VII.0. JOUR PRVCA 81 014607
- 2010SI03 RADIOACTIVITY  $^{248}\text{Cm}$ ,  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, and half-lives using Gammasphere and Eurogam-II arrays.  $^{151}\text{Ce}$ ,  $^{153}\text{Nd}$ ; deduced levels,  $J$ ,  $\pi$ , bands, and configurations. Comparison with quasiparticle-rotor-model (QPRM) calculations.  $^{151}\text{Ce}$ ,  $^{153}\text{Nd}$ ,  $^{155}\text{Sm}$ ,  $^{157}\text{Gd}$ ,  $^{159}\text{Dy}$ ; systematics of bandheads. JOUR PRVCA 81 024313
- 2010SI17 RADIOACTIVITY  $^{248}\text{Cm}$ ,  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , and half-lives using EUROGAM-II and Gammasphere arrays.  $^{91,93,95}\text{Rb}$ ; deduced levels,  $J$ ,  $\pi$ , isomers, transition probabilities, and configurations. Comparison with shell-model calculations. Systematics of low-lying levels in  $^{89,91,93,95}\text{Rb}$ .  $^{93}\text{Rb}$ ,  $^{95}\text{Y}$ ; comparison of experimental and calculated spectra. JOUR PRVCA 82 024302
- 2010TA10 NUCLEAR REACTIONS  $^{249,250,251}\text{Cf}(\text{}^{18}\text{O}, \text{}^{16}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{n}^{16}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{}^{17}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{n}^{17}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{}^{18}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{n}^{18}\text{O})$ ,  $(\text{}^{18}\text{O}, \text{n}^{18}\text{O})$ ,  $E=153$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin.  $^{248,250,252}\text{Cf}$ ; deduced levels,  $J$ ,  $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63%  $^{249}\text{Cf}$ , 13%  $^{250}\text{Cf}$ , 24%  $^{251}\text{Cf}$ . JOUR PRVCA 81 057303
- 2010VE03 RADIOACTIVITY  $^{250,252}\text{Cf}(\text{SF})$ ; measured ternary  $\alpha$ , triton and  $^6\text{He}$  emission probabilities, fission spectra,  $\alpha$ -spectra, triton-spectra and  $^6\text{He}$ -spectra using energy loss telescope detectors. Comparison with other data and systematics. JOUR NUPAB 837 176
- 2010WA26 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.  $^{103}\text{Nb}$ ,  $^{105}\text{Mo}$ ,  $^{107}\text{Tc}$ ; deduced levels,  $J$ ,  $\pi$ , high-spin states,  $2\gamma$ -vibrational bands. JOUR NUPAB 834 94c
- 2010YE08 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{104}\text{Zr}$ ; deduced levels,  $J$ ,  $\pi$ , bands, yrast structure, configurations. Comparison with projected shell model (PSM) calculations. JOUR PRVCA 82 027302
- 2010ZE04 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured fission fragments; deduced mass yield, angular distribution, prompt fission neutron energy spectrum. Comparison with maxwellian spectrum. JOUR BRSPE 74 800

KEYNUMBERS AND KEYWORDS

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**A=252 (continued)**

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| $^{252}\text{No}$ | 2008ROZX | RADIOACTIVITY $^{252}\text{No}$ ; measured $E\gamma$ , $I\gamma(t)$ ; deduced rotational band, isomeric decay; $^{256}\text{Rf}(\text{SF})$ ; measured decay products; deduced isomeric transition, $T_{1/2}$ ; $N=150$ ; calculated $E$ , $J$ , $\pi$ , mass excess using Woods-Saxon and density functional with Skyrme interactions. Density functional does not describe gaps at $Z=100$ and $N=152$ . Results on CD only. CONF E.Lansing (NS2008),P30,Robinson   |
|                   | 2008TAZE | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, x)^{254}\text{No}$ , $E$ not given; $^{206}\text{Pb}(^{48}\text{Ca}, x)^{252}\text{No}$ , $E$ not given; $^{204}\text{Hg}(^{48}\text{Ca}, x)^{250}\text{Fm}$ , $E$ not given; $^{248}\text{Cm}(^{209}\text{Bi}, x)^{248}\text{Cm}$ , $E$ not given; $^{248}\text{Cm}(^{209}\text{Bi}, x)^{246}\text{Cm}$ , $E$ not given; measured $E\gamma$ , $I\gamma(t)$ , $I(\text{ce})$ ; deduced K-isomer decay, $T_{1/2}$ , 2qp configurations. Compared to calculations of the same group (another presentation at the conference). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P105 |
|                   | 2010BL03 | ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron resonance curves; deduced masses. JOUR HYIND 196 225   |
|                   | 2010BL04 | ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured masses by Penning-trap method at GSI, using $^{133}\text{Cs}$ as standard. JOUR NATUA 463 785  |
|                   | 2010DW01 | ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron frequencies using SHIPTRAP Penning-trap system; deduced mean frequency ratios and mass excesses. Comparison with AME2003 and re-evaluation. JOUR PRVCA 81 064312   |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312   |
|                   | 2010DW01 | NUCLEAR REACTIONS $^{206,207,208}\text{Pb}(^{48}\text{Ca}, 2n)^{252}\text{No}$ / $^{253}\text{No}$ / $^{254}\text{No}$ , $E=4.55$ MeV / nucleon; measured production $\sigma$ . JOUR PRVCA 81 064312  |

**A=253**

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| $^{253}\text{Cf}$ | 2010TA10 | NUCLEAR REACTIONS $^{249,250,251}\text{Cf}(^{18}\text{O}, ^{16}\text{O})$ , $(^{18}\text{O}, n^{16}\text{O})$ , $(^{18}\text{O}, ^{17}\text{O})$ , $(^{18}\text{O}, n^{17}\text{O})$ , $(^{18}\text{O}, ^{18}\text{O})$ , $(^{18}\text{O}, n^{18}\text{O})$ , $(^{18}\text{O}, n^{18}\text{O})$ , $E=153$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin. $^{248,250,252}\text{Cf}$ ; deduced levels, $J$ , $\pi$ , ground-state rotational bands, moments of inertia. Radioactive Cf target with 63% $^{249}\text{Cf}$ , 13% $^{250}\text{Cf}$ , 24% $^{251}\text{Cf}$ . JOUR PRVCA 81 057303 |
| $^{253}\text{Es}$ | 2009K0ZV | RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ $E$ , $J$ , $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev  |
|                   | 2010GU05 | NUCLEAR MOMENTS $^{253,254}\text{Es}$ , $^{255}\text{Fm}$ , $^{250}\text{Bk}$ ; measured hyperfine spectra, angular distributions of $\alpha$ particles and $\gamma$ -rays; deduced magnetic moments. JOUR BRSPE 74 535   |

KEYNUMBERS AND KEYWORDS

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**A=253 (continued)**

$^{253}\text{No}$	2008TAZA	NUCLEAR REACTIONS $^{248}\text{Cm}(^{209}\text{Bi}, \text{X})$ , E=1450 MeV; $^{249}\text{Cf}(^{207}\text{Pb}, \text{X})$ , E=1430 MeV; measured Z(particle), A(particle), E $\gamma$ , I $\gamma$ , (particle)(particle)-coin. $^{247,249}\text{Cm}$ , $^{249}\text{Cf}$ , $^{253}\text{No}$ deduced levels, J, $\pi$ , bands, band crossing. $^{247}\text{Cm}$ , $^{249}\text{Cf}$ deduced g-factor. $^{244}\text{Pu}$ deduced neutron alignment. Results on CD only. CONF E.Lansing (NS2008),P184,Tandel	
	2009HE23	NUCLEAR REACTIONS $^{207}\text{Pb}(^{48}\text{Ca}, 2\text{n})$ , E=219 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (recoil) $\gamma$ -coin with JUROGRAM and RITU; analyzed conversion electron spectra from SACRED detector. $^{253}\text{No}$ ; deduced T $_{1/2}$ , J, $\pi$ , level energies, multipolarities, branching ratios. Comparison with rotational model. JOUR ZAANE 42 333	
	2010BE16	RADIOACTIVITY $^{256}\text{Rf}(\text{SF})$ ; $^{257}\text{Rf}$ , $^{261}\text{Sg}(\alpha)$ ; measured E $\alpha$ , half-lives. JOUR PRVCA 81 064325	
	2010BL03	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron resonance curves; deduced masses. JOUR HYIND 196 225	
	2010BL04	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured masses by Penning-trap method at GSI, using $^{133}\text{Cs}$ as standard. JOUR NATUA 463 785	
	2010DW01	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron frequencies using SHIPTRAP Penning-trap system; deduced mean frequency ratios and mass excesses. Comparison with AME2003 and re-evaluation. JOUR PRVCA 81 064312	
	2010DW01	ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312	
	2010DW01	NUCLEAR REACTIONS $^{206,207,208}\text{Pb}(^{48}\text{Ca}, 2\text{n})^{252}\text{No} / ^{253}\text{No} / ^{254}\text{No}$ , E=4.55 MeV / nucleon; measured production $\sigma$ . JOUR PRVCA 81 064312	
	$^{253}\text{Lr}$	2010HE11	RADIOACTIVITY $^{253}\text{Lr}$ , $^{257}\text{Db}$ , $^{261}\text{Bh}(\alpha)$ [ $^{209}\text{Bi}(^{54}\text{Cr}, 2\text{n})$ , E=271 MeV]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , $\alpha\gamma$ -coin; calculated T $_{1/2}$ , hindrance factors. $^{257}\text{Db}$ , $^{261}\text{Bh}$ ; deduced levels, J, $\pi$ . JOUR ZAANE 43 175

**A=254**

$^{254}\text{Es}$	2009K0ZV	RADIOACTIVITY $^{253,254}\text{Es}(\alpha)$ , $^{255}\text{Fm}(\alpha)$ ; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ , $\alpha\gamma$ -coin., $\gamma\gamma$ -coin.; deduced $^{249,250}\text{Bk}$ , $^{251}\text{Cf}$ E, J, $\pi$ , vibrational bands; $^{243}\text{Cm}(\alpha)$ ; measured E $\alpha$ , I $\alpha$ ; deduced $\alpha$ emission probabilities; $^{249}\text{Cf}(\alpha)$ ; measured E $\alpha$ , I $\alpha$ ; deduced $^{245}\text{Cm}$ half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc,P199,Kondev
	2010GU05	NUCLEAR MOMENTS $^{253,254}\text{Es}$ , $^{255}\text{Fm}$ , $^{250}\text{Bk}$ ; measured hyperfine spectra, angular distributions of $\alpha$ particles and $\gamma$ -rays; deduced magnetic moments. JOUR BRSPE 74 535
$^{254}\text{Fm}$	2010HE10	RADIOACTIVITY $^{254}\text{Md}$ , $^{254}\text{No}(\alpha)$ , (EC) [from $^{208}\text{Pb}(^{48}\text{Ca}, 2\text{n})$ , E=213.6, 218.4 MeV]; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , E(ce), I(ce), $\gamma\gamma$ -, $\gamma$ (ce)-coin; deduced branching ratios, bands, levels, J, $\pi$ , T $_{1/2}$ , configurations. JOUR ZAANE 43 55

KEYNUMBERS AND KEYWORDS

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**A=254 (continued)**

$^{254}\text{Md}$	2010HE10	RADIOACTIVITY $^{254}\text{Md}$ , $^{254}\text{No}(\alpha)$ , (EC) [from $^{208}\text{Pb}(^{48}\text{Ca}, 2n)$ , $E=213.6, 218.4$ MeV]; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $E(\text{ce})$ , $I(\text{ce})$ , $\gamma\gamma^-$ , $\gamma(\text{ce})$ -coin; deduced branching ratios, bands, levels, $J$ , $\pi$ , $T_{1/2}$ , configurations. JOUR ZAANE 43 55
$^{254}\text{No}$	2008TAZE	NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, x)^{254}\text{No}$ , $E$ not given; $^{206}\text{Pb}(^{48}\text{Ca}, x)^{252}\text{No}$ , $E$ not given; $^{204}\text{Hg}(^{48}\text{Ca}, x)^{250}\text{Fm}$ , $E$ not given; $^{248}\text{Cm}(^{209}\text{Bi}, x)^{248}\text{Cm}$ , $E$ not given; $^{248}\text{Cm}(^{209}\text{Bi}, x)^{246}\text{Cm}$ , $E$ not given; measured $E\gamma$ , $I\gamma(t)$ , $I(\text{ce})$ ; deduced K-isomer decay, $T_{1/2}$ , 2qp configurations. Compared to calculations of the same group (another presentation at the conference). CONF Sanibel (Fission and Properties of Neutron-Rich Nuclei) Proc,P105
	2010BL03	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron resonance curves; deduced masses. JOUR HYIND 196 225
	2010BL04	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured masses by Penning-trap method at GSI, using $^{133}\text{Cs}$ as standard. JOUR NATUA 463 785
	2010CL01	RADIOACTIVITY $^{254}\text{No}(\text{IT})$ [from $^{208}\text{Pb}(^{48}\text{Ca}, 2n)$ , $E=221$ MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma$ -particle-coin.; deduced $J$ , $\pi$ , level energies, rotational bands, decay of isomer state. JOUR PYLBB 690 19
	2010DW01	ATOMIC MASSES $^{252,253,254}\text{No}$ ; measured cyclotron frequencies using SHIPTRAP Penning-trap system; deduced mean frequency ratios and mass excesses. Comparison with AME2003 and re-evaluation. JOUR PRVCA 81 064312
	2010DW01	ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
	2010DW01	NUCLEAR REACTIONS $^{206,207,208}\text{Pb}(^{48}\text{Ca}, 2n)^{252}\text{No} / ^{253}\text{No} / ^{254}\text{No}$ , $E=4.55$ MeV / nucleon; measured production $\sigma$ . JOUR PRVCA 81 064312
	2010HE10	NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, 2n)$ , $E=213.6, 218.4$ MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $E(\text{ce})$ , $I(\text{ce})$ , $\gamma\gamma^-$ , $\gamma(\text{ce})$ -coin. $^{254}\text{No}$ ; deduced branching ratios, bands, levels, $J$ , $\pi$ , $T_{1/2}$ , configurations. JOUR ZAANE 43 55
	2010HE10	RADIOACTIVITY $^{254}\text{Md}$ , $^{254}\text{No}(\alpha)$ , (EC) [from $^{208}\text{Pb}(^{48}\text{Ca}, 2n)$ , $E=213.6, 218.4$ MeV]; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $E(\text{ce})$ , $I(\text{ce})$ , $\gamma\gamma^-$ , $\gamma(\text{ce})$ -coin; deduced branching ratios, bands, levels, $J$ , $\pi$ , $T_{1/2}$ , configurations. JOUR ZAANE 43 55
	2010JU02	RADIOACTIVITY $^{180}\text{Pb}(\alpha)$ [from $^{92}\text{Mo}(^{90}\text{Zr}, 2n)$ ]; $^{176}\text{Hg}(\alpha)$ [from $^{180}\text{Pb}(\alpha)$ ]; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin. $^{180,182,184,186,188}\text{Pb}(\alpha)$ , $(\beta^+)$ ; measured $E\gamma$ , $I\gamma$ ; deduced prolate bands aligned angular momentum. $^{254}\text{No}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced rotational bands. JOUR NUPAB 834 15c

## A=255

- <sup>255</sup>Fm 2009K0ZV RADIOACTIVITY <sup>253,254</sup>Es( $\alpha$ ), <sup>255</sup>Fm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin.,  $\gamma\gamma$ -coin.; deduced <sup>249,250</sup>Bk, <sup>251</sup>Cf E, J,  $\pi$ , vibrational bands; <sup>243</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced  $\alpha$  emission probabilities; <sup>249</sup>Cf( $\alpha$ ); measured E $\alpha$ , I $\alpha$ ; deduced <sup>245</sup>Cm half-life. CONF Cologne (Capture Gamma-Ray Spectroscopy) Proc.P199,Kondev
- 2010GU05 NUCLEAR MOMENTS <sup>253,254</sup>Es, <sup>255</sup>Fm, <sup>250</sup>Bk; measured hyperfine spectra, angular distributions of  $\alpha$  particles and  $\gamma$ -rays; deduced magnetic moments. JOUR BRSPPE 74 535
- <sup>255</sup>No 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E $\approx$ 200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E $\approx$ 200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- 2010NI14 RADIOACTIVITY <sup>267,268</sup>Hs( $\alpha$ )[from <sup>238</sup>U(<sup>34</sup>S, X), E=163.0 MeV]; <sup>263</sup>Sg, <sup>259</sup>Rf( $\alpha$ ); <sup>264</sup>Sg(SF); measured E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced Q $\alpha$ . Systematics of Q $\alpha$  values for even-even Z=104-114 and N=150-170 nuclei. JOUR PRVCA 82 024611
- <sup>255</sup>Lr 2008JEZZ RADIOACTIVITY <sup>256</sup>Rf[from <sup>208</sup>Pb(<sup>50</sup>Ti, 2n), E=243 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(e), I(e), (e)(e)-coin, (e) $\gamma$ -coin, particle- $\gamma$ -coin; deduced E, J,  $\pi$ , isomeric transitions; calculated E, J,  $\pi$ ; <sup>255</sup>Lr( $\alpha$ )[from <sup>209</sup>Bi(<sup>48</sup>Ca, 2n)]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(e), I(e), E $\alpha$ , I $\alpha$ , (e) $\alpha$ -coin, (e) $\gamma$ -coin, X-rays, particle- $\gamma$ -coin; deduced <sup>255</sup>Lr E, J,  $\pi$ , rotational band, isomer decay T<sub>1/2</sub>, moment of inertia. Results on CD only. CONF E.Lansing (NS2008),P29,Jeppesen
- 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E $\approx$ 200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E $\approx$ 200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

## A=256

- <sup>256</sup>No 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E $\approx$ 200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E $\approx$ 200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

KEYNUMBERS AND KEYWORDS

A=256 (continued)

- <sup>256</sup>Lr 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- <sup>256</sup>Rf 2008JEZZ RADIOACTIVITY <sup>256</sup>Rf[from <sup>208</sup>Pb(<sup>50</sup>Ti, 2n), E=243 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(e), I(e), (e)(e)-coin, (e) $\gamma$ -coin, particle- $\gamma$ -coin; deduced E, J,  $\pi$ , isomeric transitions; calculated E, J,  $\pi$ ; <sup>255</sup>Lr( $\alpha$ )[from <sup>209</sup>Bi(<sup>48</sup>Ca, 2n)]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, E(e), I(e), E $\alpha$ , I $\alpha$ , (e) $\alpha$ -coin, (e) $\gamma$ -coin, X-rays, particle- $\gamma$ -coin; deduced <sup>255</sup>Lr E, J,  $\pi$ , rotational band, isomer decay T<sub>1/2</sub>, moment of inertia. Results on CD only. CONF E.Lansing (NS2008),P29,Jeppesen
- 2008ROZX RADIOACTIVITY <sup>252</sup>No; measured E $\gamma$ , I $\gamma$ (t); deduced rotational band, isomeric decay; <sup>256</sup>Rf(SF); measured decay products; deduced isomeric transition, T<sub>1/2</sub>; N=150; calculated E, J,  $\pi$ , mass excess using Woods-Saxon and density functional with Skyrme interactions. Density functional does not describe gaps at Z=100 and N=152. Results on CD only. CONF E.Lansing (NS2008),P30,Robinson
- 2009SAZV RADIOACTIVITY <sup>264</sup>Hs( $\alpha$ )[from <sup>208</sup>Pb(<sup>58</sup>Fe, 2n), E=227.2 MeV and <sup>207</sup>Pb(<sup>58</sup>Fe, n), E=220.5 MeV]; measured E $\alpha$ ; deduced  $\sigma$ , T<sub>1/2</sub>; <sup>260</sup>Sg[from <sup>264</sup>Hs]; <sup>256</sup>Rf[from <sup>260</sup>Sg]; measured decay products; deduced T<sub>1/2</sub>. Two half-lives for each of <sup>260</sup>Sg and <sup>256</sup>Rf. REPT RIKEN 2008 Annual,P16,Sato
- 2010BE16 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>54</sup>Cr, n), E=261 MeV; <sup>208</sup>Pb(<sup>50</sup>Ti, n), (<sup>50</sup>Ti, 2n), E=238 MeV; measured E $\gamma$ , E(ce), E $\alpha$ , (recoil)(ce)( $\alpha$ )-, (recoil)(ce)(x ray)( $\alpha$ )-, (recoil)(ce)-, (recoil)(ce)(fission)-,  $\gamma$ (recoil)(ce)( $\alpha$ )-,  $\gamma$ (recoil)(ce)(x ray)( $\alpha$ )-, (recoil)(ce)( $\alpha$ )( $\alpha$ )-coin, half-lives. <sup>257</sup>Rf, <sup>261</sup>Sg; deduced levels, J,  $\pi$ , isomer, band, configurations. Comparison with calculated energy levels of <sup>261</sup>Sg. JOUR PRVCA 81 064325
- 2010BE16 RADIOACTIVITY <sup>256</sup>RF(SF); <sup>257</sup>Rf, <sup>261</sup>Sg( $\alpha$ ); measured E $\alpha$ , half-lives. JOUR PRVCA 81 064325
- 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

KEYNUMBERS AND KEYWORDS

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**A=257**

- <sup>257</sup>Rf 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- 2010BE16 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>54</sup>Cr, n), E=261 MeV; <sup>208</sup>Pb(<sup>50</sup>Ti, n), (<sup>50</sup>Ti, 2n), E=238 MeV; measured E $\gamma$ , E(ce), E $\alpha$ , (recoil)(ce)( $\alpha$ )-, (recoil)(ce)(x ray)( $\alpha$ )-, (recoil)(ce)-, (recoil)(ce)(fission)-,  $\gamma$ (recoil)(ce)( $\alpha$ )-,  $\gamma$ (recoil)(ce)(x ray)( $\alpha$ )-, (recoil)(ce)( $\alpha$ )( $\alpha$ )-coin, half-lives. <sup>257</sup>Rf, <sup>261</sup>Sg; deduced levels, J,  $\pi$ , isomer, band, configurations. Comparison with calculated energy levels of <sup>261</sup>Sg. JOUR PRVCA 81 064325
- 2010BE16 RADIOACTIVITY <sup>256</sup>Rf(SF); <sup>257</sup>Rf, <sup>261</sup>Sg( $\alpha$ ); measured E $\alpha$ , half-lives. JOUR PRVCA 81 064325
- 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
- <sup>257</sup>Db 2010HE11 RADIOACTIVITY <sup>253</sup>Lr, <sup>257</sup>Db, <sup>261</sup>Bh( $\alpha$ ) [<sup>209</sup>Bi(<sup>54</sup>Cr, 2n), E=271 MeV]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ ,  $\alpha\gamma$ -coin; calculated T<sub>1/2</sub>, hindrance factors. <sup>257</sup>Db, <sup>261</sup>Bh; deduced levels, J,  $\pi$ . JOUR ZAANE 43 175

**A=258**

- <sup>258</sup>Rf 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312
- <sup>258</sup>Db 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=259**

- <sup>259</sup>Rf 2010NI14 RADIOACTIVITY <sup>267,268</sup>Hs( $\alpha$ )[from <sup>238</sup>U(<sup>34</sup>S, X), E=163.0 MeV]; <sup>263</sup>Sg, <sup>259</sup>Rf( $\alpha$ ); <sup>264</sup>Sg(SF); measured E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced Q $\alpha$ . Systematics of Q $\alpha$  values for even-even Z=104-114 and N=150-170 nuclei. JOUR PRVCA 82 024611

KEYNUMBERS AND KEYWORDS

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**A=259 (continued)**

<sup>259</sup>Db      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=260**

<sup>260</sup>Rf      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

<sup>260</sup>Sg      2009SAZV      RADIOACTIVITY <sup>264</sup>Hs( $\alpha$ )[from <sup>208</sup>Pb(<sup>58</sup>Fe, 2n), E=227.2 MeV and <sup>207</sup>Pb(<sup>58</sup>Fe, n), E=220.5 MeV]; measured E $\alpha$ ; deduced  $\sigma$ , T<sub>1/2</sub>; <sup>260</sup>Sg[from <sup>264</sup>Hs]; <sup>256</sup>Rf[from <sup>260</sup>Sg]; measured decay products; deduced T<sub>1/2</sub>. Two half-lives for each of <sup>260</sup>Sg and <sup>256</sup>Rf. REPT RIKEN 2008 Annual,P16,Sato

2010DW01      ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=261**

<sup>261</sup>Rf      2010GR04      RADIOACTIVITY <sup>268,269,270,271</sup>Hs, <sup>265,267</sup>Sg( $\alpha$ ); measured E $\alpha$ , half-lives,  $\alpha\alpha$  correlations. <sup>261,263</sup>Rf, <sup>264</sup>Sg(SF); measured  $\alpha$ -SF correlations. JOUR PRVCA 81 061601

<sup>261</sup>Db      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361



KEYNUMBERS AND KEYWORDS

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**A=261 (continued)**

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|-------------------|----------|--|
| $^{261}\text{Sg}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, n)$ , $(^{50}\text{Ti}, n)$ , $(^{54}\text{Cr}, n)$ , $(^{58}\text{Fe}, n)$ , $(^{62}\text{Ni}, n)$ , $(^{64}\text{Ni}, n)$ , $(^{70}\text{Zn}, n)$ , $E \approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4n)$ , $(^{26}\text{Mg}, 4n)$ , $(^{34}\text{S}, 5n)$ , $(^{48}\text{Ca}, 3n)$ , $(^{48}\text{Ca}, 4n)$ , $E \approx 200\text{-}300$ MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
|                   | 2010BE16 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{54}\text{Cr}, n)$ , $E=261$ MeV; $^{208}\text{Pb}(^{50}\text{Ti}, n)$ , $(^{50}\text{Ti}, 2n)$ , $E=238$ MeV; measured $E\gamma$ , $E(\text{ce})$ , $E\alpha$ , $(\text{recoil})(\text{ce})(\alpha)-$ , $(\text{recoil})(\text{ce})(\text{x ray})(\alpha)-$ , $(\text{recoil})(\text{ce})-$ , $(\text{recoil})(\text{ce})(\text{fission})-$ , $\gamma(\text{recoil})(\text{ce})(\alpha)-$ , $\gamma(\text{recoil})(\text{ce})(\text{x ray})(\alpha)-$ , $(\text{recoil})(\text{ce})(\alpha)(\alpha)\text{-coin}$ , half-lives. $^{257}\text{Rf}$ , $^{261}\text{Sg}$ ; deduced levels, J, $\pi$ , isomer, band, configurations. Comparison with calculated energy levels of $^{261}\text{Sg}$ . JOUR PRVCA 81 064325  |
|                   | 2010BE16 | RADIOACTIVITY $^{256}\text{Rf}(\text{SF})$ ; $^{257}\text{Rf}$ , $^{261}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 81 064325   |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
| $^{261}\text{Bh}$ | 2010HE11 | RADIOACTIVITY $^{253}\text{Lr}$ , $^{257}\text{Db}$ , $^{261}\text{Bh}(\alpha)$ [ $^{209}\text{Bi}(^{54}\text{Cr}, 2n)$ , $E=271$ MeV]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $\alpha\gamma\text{-coin}$ ; calculated $T_{1/2}$ , hindrance factors. $^{257}\text{Db}$ , $^{261}\text{Bh}$ ; deduced levels, J, $\pi$ . JOUR ZAANE 43 175   |

**A=262**

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| $^{262}\text{Rf}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, n)$ , $(^{50}\text{Ti}, n)$ , $(^{54}\text{Cr}, n)$ , $(^{58}\text{Fe}, n)$ , $(^{62}\text{Ni}, n)$ , $(^{64}\text{Ni}, n)$ , $(^{70}\text{Zn}, n)$ , $E \approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4n)$ , $(^{26}\text{Mg}, 4n)$ , $(^{34}\text{S}, 5n)$ , $(^{48}\text{Ca}, 3n)$ , $(^{48}\text{Ca}, 4n)$ , $E \approx 200\text{-}300$ MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
| $^{262}\text{Sg}$ | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
| $^{262}\text{Bh}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, n)$ , $(^{50}\text{Ti}, n)$ , $(^{54}\text{Cr}, n)$ , $(^{58}\text{Fe}, n)$ , $(^{62}\text{Ni}, n)$ , $(^{64}\text{Ni}, n)$ , $(^{70}\text{Zn}, n)$ , $E \approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4n)$ , $(^{26}\text{Mg}, 4n)$ , $(^{34}\text{S}, 5n)$ , $(^{48}\text{Ca}, 3n)$ , $(^{48}\text{Ca}, 4n)$ , $E \approx 200\text{-}300$ MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |

KEYNUMBERS AND KEYWORDS

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**A=263**

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| $^{263}\text{Rf}$ | 2010GR04 | RADIOACTIVITY $^{268,269,270,271}\text{Hs}$ , $^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}$ , $^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
| $^{263}\text{Sg}$ | 2009OG07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{54}\text{Cr}, \text{n})$ , $(^{58}\text{Fe}, \text{n})$ , $(^{62}\text{Ni}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $E\approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ , $(^{26}\text{Mg}, 4\text{n})$ , $(^{34}\text{S}, 5\text{n})$ , $(^{48}\text{Ca}, 3\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , $E\approx 200\text{-}300$ MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
|                   | 2010NI14 | RADIOACTIVITY $^{267,268}\text{Hs}(\alpha)$ [from $^{238}\text{U}(^{34}\text{S}, \text{X})$ , $E=163.0$ MeV]; $^{263}\text{Sg}$ , $^{259}\text{Rf}(\alpha)$ ; $^{264}\text{Sg}(\text{SF})$ ; measured $E\alpha$ , $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced $Q\alpha$ . Systematics of $Q\alpha$ values for even-even $Z=104\text{-}114$ and $N=150\text{-}170$ nuclei. JOUR PRVCA 82 024611   |
| $^{263}\text{Hs}$ | 2009KAZU | NUCLEAR REACTIONS $^{206}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $E=287.7$ MeV; $^{208}\text{Pb}(^{56}\text{Fe}, \text{n})$ , $E=280.4$ MeV; measured reaction products; deduced $^{263}\text{Hs}$ $T_{1/2}$ , $\sigma$ , decay chain $^{263}\text{Hs}(\alpha)\text{-}>^{259}\text{Sg}(\alpha)\text{-}>^{255}\text{Rf}(\alpha)$ . REPT RIKEN 2008 Annual,Pxiii,Kaji   |

**A=264**

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|-------------------|----------|--|
| $^{264}\text{Sg}$ | 2009OG07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{54}\text{Cr}, \text{n})$ , $(^{58}\text{Fe}, \text{n})$ , $(^{62}\text{Ni}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $E\approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ , $(^{26}\text{Mg}, 4\text{n})$ , $(^{34}\text{S}, 5\text{n})$ , $(^{48}\text{Ca}, 3\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , $E\approx 200\text{-}300$ MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
|                   | 2010GR04 | RADIOACTIVITY $^{268,269,270,271}\text{Hs}$ , $^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}$ , $^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
|                   | 2010NI14 | RADIOACTIVITY $^{267,268}\text{Hs}(\alpha)$ [from $^{238}\text{U}(^{34}\text{S}, \text{X})$ , $E=163.0$ MeV]; $^{263}\text{Sg}$ , $^{259}\text{Rf}(\alpha)$ ; $^{264}\text{Sg}(\text{SF})$ ; measured $E\alpha$ , $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced $Q\alpha$ . Systematics of $Q\alpha$ values for even-even $Z=104\text{-}114$ and $N=150\text{-}170$ nuclei. JOUR PRVCA 82 024611   |
| $^{264}\text{Hs}$ | 2009SAZV | RADIOACTIVITY $^{264}\text{Hs}(\alpha)$ [from $^{208}\text{Pb}(^{58}\text{Fe}, 2\text{n})$ , $E=227.2$ MeV and $^{207}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $E=220.5$ MeV]; measured $E\alpha$ ; deduced $\sigma$ , $T_{1/2}$ ; $^{260}\text{Sg}$ [from $^{264}\text{Hs}$ ]; $^{256}\text{Rf}$ [from $^{260}\text{Sg}$ ]; measured decay products; deduced $T_{1/2}$ . Two half-lives for each of $^{260}\text{Sg}$ and $^{256}\text{Rf}$ . REPT RIKEN 2008 Annual,P16,Sato   |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |

KEYNUMBERS AND KEYWORDS

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**A=265**

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| $^{265}\text{Sg}$ | 2010GR04 | RADIOACTIVITY $^{268,269,270,271}\text{Hs}$ , $^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}$ , $^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
| $^{265}\text{Bh}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}({}^{48}\text{Ca}, n)$ , $({}^{50}\text{Ti}, n)$ , $({}^{54}\text{Cr}, n)$ , $({}^{58}\text{Fe}, n)$ , $({}^{62}\text{Ni}, n)$ , $({}^{64}\text{Ni}, n)$ , $({}^{70}\text{Zn}, n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}({}^{22}\text{Ne}, 4n)$ , $({}^{26}\text{Mg}, 4n)$ , $({}^{34}\text{S}, 5n)$ , $({}^{48}\text{Ca}, 3n)$ , $({}^{48}\text{Ca}, 4n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
| $^{265}\text{Hs}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}({}^{48}\text{Ca}, n)$ , $({}^{50}\text{Ti}, n)$ , $({}^{54}\text{Cr}, n)$ , $({}^{58}\text{Fe}, n)$ , $({}^{62}\text{Ni}, n)$ , $({}^{64}\text{Ni}, n)$ , $({}^{70}\text{Zn}, n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}({}^{22}\text{Ne}, 4n)$ , $({}^{26}\text{Mg}, 4n)$ , $({}^{34}\text{S}, 5n)$ , $({}^{48}\text{Ca}, 3n)$ , $({}^{48}\text{Ca}, 4n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |

**A=266**

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| $^{266}\text{Sg}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}({}^{48}\text{Ca}, n)$ , $({}^{50}\text{Ti}, n)$ , $({}^{54}\text{Cr}, n)$ , $({}^{58}\text{Fe}, n)$ , $({}^{62}\text{Ni}, n)$ , $({}^{64}\text{Ni}, n)$ , $({}^{70}\text{Zn}, n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}({}^{22}\text{Ne}, 4n)$ , $({}^{26}\text{Mg}, 4n)$ , $({}^{34}\text{S}, 5n)$ , $({}^{48}\text{Ca}, 3n)$ , $({}^{48}\text{Ca}, 4n)$ , $E\approx 200\text{-}300\text{ MeV}$ ; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |
|                   | 2010GR04 | RADIOACTIVITY $^{268,269,270,271}\text{Hs}$ , $^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}$ , $^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
| $^{266}\text{Bh}$ | 2009MOZU | NUCLEAR REACTIONS $^{248}\text{Cm}({}^{23}\text{Na}, f)$ , $E=126, 130, 132\text{ MeV}$ ; $^{248}\text{Cm}({}^{23}\text{Na}, 5n)$ , $E=126, 130, 132\text{ MeV}$ ; measured $A(\text{fragment})$ , $Z(\text{fragment})$ , $E\alpha$ , $I\alpha$ , $\alpha\alpha$ -coin, $(\text{fragment})\alpha$ -coin; deduced $^{262}\text{Db}$ , $^{266,267}\text{Bh}$ $T_{1/2}$ . Confirmed decay chain of $^{278}\text{A}=113$ . Full version in J. Phys. Soc. Jpn. 78 (2009), 064201. REPT RIKEN 2008 Annual, Pi, Morita  |
| $^{266}\text{Hs}$ | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |

**A=266 (continued)**

- 2010IT02 NUCLEAR REACTIONS  $^{248}\text{Cm}(^{26}\text{Mg}, \text{X})^{274}\text{Hs}$ ,  $E^*=28-64$  MeV;  $^{238}\text{U}(^{36}\text{S}, \text{X})^{274}\text{Hs}$ ,  $E^*=30-57$  MeV;  $^{208}\text{Pb}(^{58}\text{Fe}, \text{X})^{266}\text{Hs}$ ,  $E^*=33, 48$  MeV; measured  $\sigma$ , fragment energy spectra (TKE), yields using CORSET spectrometer; deduced reaction mechanism features. JOUR NUPAB 834 374c
- $^{266}\text{Mt}$  20090G07 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ ,  $(^{50}\text{Ti}, \text{n})$ ,  $(^{54}\text{Cr}, \text{n})$ ,  $(^{58}\text{Fe}, \text{n})$ ,  $(^{62}\text{Ni}, \text{n})$ ,  $(^{64}\text{Ni}, \text{n})$ ,  $(^{70}\text{Zn}, \text{n})$ ,  $E\approx 200-300$  MeV; analyzed SHE production  $\sigma$ .  $^{238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{242,244}\text{Pu}$ ,  $^{243}\text{Am}$ ,  $^{245,248}\text{Cm}$ ,  $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ ,  $(^{26}\text{Mg}, 4\text{n})$ ,  $(^{34}\text{S}, 5\text{n})$ ,  $(^{48}\text{Ca}, 3\text{n})$ ,  $(^{48}\text{Ca}, 4\text{n})$ ,  $E\approx 200-300$  MeV; measured  $E\alpha$ ,  $I\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values,  $T_{1/2}$  of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=267**

- $^{267}\text{Sg}$  2010GR04 RADIOACTIVITY  $^{268,269,270,271}\text{Hs}$ ,  $^{265,267}\text{Sg}(\alpha)$ ; measured  $E\alpha$ , half-lives,  $\alpha\alpha$  correlations.  $^{261,263}\text{Rf}$ ,  $^{264}\text{Sg}(\text{SF})$ ; measured  $\alpha$ -SF correlations. JOUR PRVCA 81 061601
- $^{267}\text{Hs}$  20090G07 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ ,  $(^{50}\text{Ti}, \text{n})$ ,  $(^{54}\text{Cr}, \text{n})$ ,  $(^{58}\text{Fe}, \text{n})$ ,  $(^{62}\text{Ni}, \text{n})$ ,  $(^{64}\text{Ni}, \text{n})$ ,  $(^{70}\text{Zn}, \text{n})$ ,  $E\approx 200-300$  MeV; analyzed SHE production  $\sigma$ .  $^{238}\text{U}$ ,  $^{237}\text{Np}$ ,  $^{242,244}\text{Pu}$ ,  $^{243}\text{Am}$ ,  $^{245,248}\text{Cm}$ ,  $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ ,  $(^{26}\text{Mg}, 4\text{n})$ ,  $(^{34}\text{S}, 5\text{n})$ ,  $(^{48}\text{Ca}, 3\text{n})$ ,  $(^{48}\text{Ca}, 4\text{n})$ ,  $E\approx 200-300$  MeV; measured  $E\alpha$ ,  $I\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values,  $T_{1/2}$  of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- 2010NI14 NUCLEAR REACTIONS  $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}$ ,  $E=148-170$  MeV; measured evaporation residues and  $E\alpha$ ,  $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions.  $^{268,269}\text{Sg}$ ,  $^{272,273}\text{Hs}$ ,  $^{269,271,272}\text{Mt}$ ,  $^{274,275,276,277}\text{Sg}$ ,  $^{273,275,276}\text{Rg}$ ,  $^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in  $^{243}\text{Am}$ ,  $^{244}\text{Pu}$ ,  $^{248}\text{Cm}(^{34}\text{S}, \text{xn})$ ,  $(^{36}\text{S}, \text{xn})$  reactions. JOUR PRVCA 82 024611
- 2010NI14 RADIOACTIVITY  $^{267,268}\text{Hs}(\alpha)$ [from  $^{238}\text{U}(^{34}\text{S}, \text{X})$ ,  $E=163.0$  MeV];  $^{263}\text{Sg}$ ,  $^{259}\text{Rf}(\alpha)$ ;  $^{264}\text{Sg}(\text{SF})$ ; measured  $E\alpha$ ,  $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced  $Q\alpha$ . Systematics of  $Q\alpha$  values for even-even  $Z=104-114$  and  $N=150-170$  nuclei. JOUR PRVCA 82 024611

**A=268**

- <sup>268</sup>Sg 2010NI14 NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611
- <sup>268</sup>Hs 2010GR04 RADIOACTIVITY <sup>268,269,270,271</sup>Hs, <sup>265,267</sup>Sg( $\alpha$ ); measured E $\alpha$ , half-lives,  $\alpha\alpha$  correlations. <sup>261,263</sup>Rf, <sup>264</sup>Sg(SF); measured  $\alpha$ -SF correlations. JOUR PRVCA 81 061601
- 2010NI14 NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611
- 2010NI14 RADIOACTIVITY <sup>267,268</sup>Hs( $\alpha$ )[from <sup>238</sup>U(<sup>34</sup>S, X), E=163.0 MeV]; <sup>263</sup>Sg, <sup>259</sup>Rf( $\alpha$ ); <sup>264</sup>Sg(SF); measured E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, half-lives; deduced Q $\alpha$ . Systematics of Q $\alpha$  values for even-even Z=104-114 and N=150-170 nuclei. JOUR PRVCA 82 024611
- <sup>268</sup>Ds 2010DW01 ATOMIC MASSES <sup>232</sup>U, <sup>236,238</sup>Pu, <sup>240,241,242</sup>Cm, <sup>244,245,246</sup>Cf, <sup>248,249,250</sup>Fm, <sup>252,253,254</sup>No, <sup>256,257,258</sup>Rf, <sup>260,261,262</sup>Sg, <sup>264,265,266</sup>Hs, <sup>268,269,270</sup>Ds; compiled and evaluated mass excesses. JOUR PRVCA 81 064312

**A=269**

- <sup>269</sup>Sg 2010NI14 NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

KEYNUMBERS AND KEYWORDS

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**A=269 (continued)**

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| $^{269}\text{Hs}$ | 2010GR04 | NUCLEAR REACTIONS $^{238}\text{U}(^{36}\text{S}, 3\text{n}), (^{36}\text{S}, 4\text{n}), (^{36}\text{S}, 5\text{n})$ , E=256.4 MeV; measured reaction products using COMPACT system of efficient and rapid chemical-separation and online detection based on the cryo-thermo chromatography method. $^{269,270,271}\text{Hs}$ ; deduced production $\sigma$ . JOUR PRVCA 81 061601   |
|                   | 2010GR04 | RADIOACTIVITY $^{268,269,270,271}\text{Hs}$ , $^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}$ , $^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
| $^{269}\text{Mt}$ | 2010NI14 | NUCLEAR REACTIONS $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}$ , E=148-170 MeV; measured evaporation residues and $E\alpha$ , $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production $\sigma$ , fission $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission $\sigma(E)$ with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. $^{268,269}\text{Sg}$ , $^{272,273}\text{Hs}$ , $^{269,271,272}\text{Mt}$ , $^{274,275,276,277}\text{Sg}$ , $^{273,275,276}\text{Rg}$ , $^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in $^{243}\text{Am}$ , $^{244}\text{Pu}$ , $^{248}\text{Cm}(^{34}\text{S}, \text{xn})$ , $(^{36}\text{S}, \text{xn})$ reactions. JOUR PRVCA 82 024611 |
| $^{269}\text{Ds}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{54}\text{Cr}, \text{n})$ , $(^{58}\text{Fe}, \text{n})$ , $(^{62}\text{Ni}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , E $\approx$ 200-300 MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ , $(^{26}\text{Mg}, 4\text{n})$ , $(^{34}\text{S}, 5\text{n})$ , $(^{48}\text{Ca}, 3\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E $\approx$ 200-300 MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361       |
|                   | 2010DW01 | ATOMIC MASSES $^{232}\text{U}$ , $^{236,238}\text{Pu}$ , $^{240,241,242}\text{Cm}$ , $^{244,245,246}\text{Cf}$ , $^{248,249,250}\text{Fm}$ , $^{252,253,254}\text{No}$ , $^{256,257,258}\text{Rf}$ , $^{260,261,262}\text{Sg}$ , $^{264,265,266}\text{Hs}$ , $^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |

**A=270**

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| $^{270}\text{Db}$ | 20100G01 | RADIOACTIVITY $^{293,294}117$ , $^{289,290}115$ , $^{285,286}113$ , $^{282}\text{Rg}$ , $^{278}\text{Mt}$ , $^{274}\text{Bh}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , and half-lives. $^{270}\text{Db}$ , $^{281}\text{Rg}(\text{SF})$ ; measured TKE, and $T_{1/2}$ . JOUR PRLTA 104 142502  |
| $^{270}\text{Hs}$ | 20090G07 | NUCLEAR REACTIONS $^{208}\text{Pb}$ , $^{209}\text{Bi}(^{48}\text{Ca}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{54}\text{Cr}, \text{n})$ , $(^{58}\text{Fe}, \text{n})$ , $(^{62}\text{Ni}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , E $\approx$ 200-300 MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}$ , $^{237}\text{Np}$ , $^{242,244}\text{Pu}$ , $^{243}\text{Am}$ , $^{245,248}\text{Cm}$ , $^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n})$ , $(^{26}\text{Mg}, 4\text{n})$ , $(^{34}\text{S}, 5\text{n})$ , $(^{48}\text{Ca}, 3\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E $\approx$ 200-300 MeV; measured $E\alpha$ , $I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |

KEYNUMBERS AND KEYWORDS

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**A=270 (continued)**

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| 2010GR04          | NUCLEAR REACTIONS $^{238}\text{U}(^{36}\text{S}, 3\text{n}), (^{36}\text{S}, 4\text{n}), (^{36}\text{S}, 5\text{n}), E=256.4$ MeV; measured reaction products using COMPACT system of efficient and rapid chemical-separation and online detection based on the cryo-thermo chromatography method. $^{269,270,271}\text{Hs}$ ; deduced production $\sigma$ . JOUR PRVCA 81 061601  |
| 2010GR04          | RADIOACTIVITY $^{268,269,270,271}\text{Hs}, ^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}, ^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601  |
| $^{270}\text{Ds}$ | 2010DW01 ATOMIC MASSES $^{232}\text{U}, ^{236,238}\text{Pu}, ^{240,241,242}\text{Cm}, ^{244,245,246}\text{Cf}, ^{248,249,250}\text{Fm}, ^{252,253,254}\text{No}, ^{256,257,258}\text{Rf}, ^{260,261,262}\text{Sg}, ^{264,265,266}\text{Hs}, ^{268,269,270}\text{Ds}$ ; compiled and evaluated mass excesses. JOUR PRVCA 81 064312  |
| $^{270}\text{Rg}$ | 20090G07 NUCLEAR REACTIONS $^{208}\text{Pb}, ^{209}\text{Bi}(^{48}\text{Ca}, \text{n}), (^{50}\text{Ti}, \text{n}), (^{54}\text{Cr}, \text{n}), (^{58}\text{Fe}, \text{n}), (^{62}\text{Ni}, \text{n}), (^{64}\text{Ni}, \text{n}), (^{70}\text{Zn}, \text{n}), E\approx 200\text{-}300$ MeV; analyzed SHE production $\sigma$ . $^{238}\text{U}, ^{237}\text{Np}, ^{242,244}\text{Pu}, ^{243}\text{Am}, ^{245,248}\text{Cm}, ^{249}\text{Cf}(^{22}\text{Ne}, 4\text{n}), (^{26}\text{Mg}, 4\text{n}), (^{34}\text{S}, 5\text{n}), (^{48}\text{Ca}, 3\text{n}), (^{48}\text{Ca}, 4\text{n}), E\approx 200\text{-}300$ MeV; measured $E\alpha, I\alpha$ , SHE production $\sigma$ using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, $T_{1/2}$ of sequential decay products and compared to calculations. JOUR ZAANE 42 361 |

**A=271**

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|-------------------|--|
| $^{271}\text{Hs}$ | 2010GR04 NUCLEAR REACTIONS $^{238}\text{U}(^{36}\text{S}, 3\text{n}), (^{36}\text{S}, 4\text{n}), (^{36}\text{S}, 5\text{n}), E=256.4$ MeV; measured reaction products using COMPACT system of efficient and rapid chemical-separation and online detection based on the cryo-thermo chromatography method. $^{269,270,271}\text{Hs}$ ; deduced production $\sigma$ . JOUR PRVCA 81 061601   |
|                   | 2010GR04 RADIOACTIVITY $^{268,269,270,271}\text{Hs}, ^{265,267}\text{Sg}(\alpha)$ ; measured $E\alpha$ , half-lives, $\alpha\alpha$ correlations. $^{261,263}\text{Rf}, ^{264}\text{Sg}(\text{SF})$ ; measured $\alpha$ -SF correlations. JOUR PRVCA 81 061601   |
| $^{271}\text{Mt}$ | 2010NI14 NUCLEAR REACTIONS $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}, E=148\text{-}170$ MeV; measured evaporation residues and $E\alpha, E\gamma, \text{x-rays}, (\text{fragment})\alpha-, (\text{fragment})\gamma\text{-coin}, \text{production } \sigma, \text{fission } \sigma(E), \text{mass distribution of fission fragments as a function of energy. Comparison of fission } \sigma(E) \text{ with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. } ^{268,269}\text{Sg}, ^{272,273}\text{Hs}, ^{269,271,272}\text{Mt}, ^{274,275,276,277}\text{Sg}, ^{273,275,276}\text{Rg}, ^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in $^{243}\text{Am}, ^{244}\text{Pu}, ^{248}\text{Cm}(^{34}\text{S}, \text{xn}), (^{36}\text{S}, \text{xn})$ reactions. JOUR PRVCA 82 024611 |

**A=271 (continued)**

<sup>271</sup>Ds      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=272**

<sup>272</sup>Hs      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma$ (E), mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma$ (E) with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

<sup>272</sup>Mt      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma$ (E), mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma$ (E) with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

<sup>272</sup>Rg      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361



**A=273**

- <sup>273</sup>Hs      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611
- <sup>273</sup>Ds      2009OG07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E $\approx$ 200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E $\approx$ 200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- <sup>273</sup>Rg      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

**A=274**

- <sup>274</sup>Sg      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611
- <sup>274</sup>Bh      2010OG01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

**A=274 (continued)**

$^{274}\text{Hs}$  2010IT02 NUCLEAR REACTIONS  $^{248}\text{Cm}(^{26}\text{Mg}, \text{X})^{274}\text{Hs}$ ,  $E^*=28-64$  MeV;  $^{238}\text{U}(^{36}\text{S}, \text{X})^{274}\text{Hs}$ ,  $E^*=30-57$  MeV;  $^{208}\text{Pb}(^{58}\text{Fe}, \text{X})^{266}\text{Hs}$ ,  $E^*=33, 48$  MeV; measured  $\sigma$ , fragment energy spectra (TKE), yields using CORSET spectrometer; deduced reaction mechanism features. JOUR NUPAB 834 374c

**A=275**

$^{275}\text{Sg}$  2010NI14 NUCLEAR REACTIONS  $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}$ ,  $E=148-170$  MeV; measured evaporation residues and  $E\alpha$ ,  $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions.  $^{268,269}\text{Sg}$ ,  $^{272,273}\text{Hs}$ ,  $^{269,271,272}\text{Mt}$ ,  $^{274,275,276,277}\text{Sg}$ ,  $^{273,275,276}\text{Rg}$ ,  $^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in  $^{243}\text{Am}$ ,  $^{244}\text{Pu}$ ,  $^{248}\text{Cm}(^{34}\text{S}, \text{xn})$ ,  $(^{36}\text{S}, \text{xn})$  reactions. JOUR PRVCA 82 024611

$^{275}\text{Rg}$  2010NI14 NUCLEAR REACTIONS  $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}$ ,  $E=148-170$  MeV; measured evaporation residues and  $E\alpha$ ,  $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions.  $^{268,269}\text{Sg}$ ,  $^{272,273}\text{Hs}$ ,  $^{269,271,272}\text{Mt}$ ,  $^{274,275,276,277}\text{Sg}$ ,  $^{273,275,276}\text{Rg}$ ,  $^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in  $^{243}\text{Am}$ ,  $^{244}\text{Pu}$ ,  $^{248}\text{Cm}(^{34}\text{S}, \text{xn})$ ,  $(^{36}\text{S}, \text{xn})$  reactions. JOUR PRVCA 82 024611

**A=276**

$^{276}\text{Sg}$  2010NI14 NUCLEAR REACTIONS  $^{238}\text{U}(^{34}\text{S}, \text{xn})^{267}\text{Hs} / ^{268}\text{Hs}$ ,  $E=148-170$  MeV; measured evaporation residues and  $E\alpha$ ,  $E\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions.  $^{268,269}\text{Sg}$ ,  $^{272,273}\text{Hs}$ ,  $^{269,271,272}\text{Mt}$ ,  $^{274,275,276,277}\text{Sg}$ ,  $^{273,275,276}\text{Rg}$ ,  $^{278,279,280,281}\text{Cn}$ ; theoretical estimates of production rates in  $^{243}\text{Am}$ ,  $^{244}\text{Pu}$ ,  $^{248}\text{Cm}(^{34}\text{S}, \text{xn})$ ,  $(^{36}\text{S}, \text{xn})$  reactions. JOUR PRVCA 82 024611

KEYNUMBERS AND KEYWORDS

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**A=276 (continued)**

<sup>276</sup>Rg      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

**A=277**

<sup>277</sup>Sg      2010NI14      NUCLEAR REACTIONS <sup>238</sup>U(<sup>34</sup>S, xn)<sup>267</sup>Hs / <sup>268</sup>Hs, E=148-170 MeV; measured evaporation residues and E $\alpha$ , E $\gamma$ , x-rays, (fragment) $\alpha$ -, (fragment) $\gamma$ -coin, production  $\sigma$ , fission  $\sigma(E)$ , mass distribution of fission fragments as a function of energy. Comparison of fission  $\sigma(E)$  with calculations based on the three-dimensional Langevin equation and deformed target nuclei. Coupled-channel calculations for mass distributions. <sup>268,269</sup>Sg, <sup>272,273</sup>Hs, <sup>269,271,272</sup>Mt, <sup>274,275,276,277</sup>Sg, <sup>273,275,276</sup>Rg, <sup>278,279,280,281</sup>Cn; theoretical estimates of production rates in <sup>243</sup>Am, <sup>244</sup>Pu, <sup>248</sup>Cm(<sup>34</sup>S, xn), (<sup>36</sup>S, xn) reactions. JOUR PRVCA 82 024611

<sup>277</sup>Hs      2010DU06      RADIOACTIVITY <sup>288,289</sup>114, <sup>285</sup>Cn( $\alpha$ ), <sup>281</sup>Ds( $\alpha$ ), <sup>284</sup>Cn, <sup>281</sup>Ds, <sup>277</sup>Hs(SF); measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701

**A=278**

<sup>278</sup>Mt      20100G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>278</sup>113      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E $\approx$ 200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E $\approx$ 200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

KEYNUMBERS AND KEYWORDS

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**A=278 (continued)**

<sup>278</sup>114      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=279**

No references found

**A=280**

No references found

**A=281**

<sup>281</sup>Ds      2010DU06      RADIOACTIVITY <sup>288,289</sup>114, <sup>285</sup>Cn( $\alpha$ ), <sup>281</sup>Ds( $\alpha$ ), <sup>284</sup>Cn, <sup>281</sup>Ds, <sup>277</sup>Hs(SF); measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701

<sup>281</sup>Rg      2010G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>281</sup>113      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=282**

<sup>282</sup>Rg      2010G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

KEYNUMBERS AND KEYWORDS

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**A=282 (continued)**

<sup>282</sup>113      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=283**

No references found

**A=284**

No references found

**A=285**

<sup>285</sup>113      20100G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>285</sup>114      2010EL06      NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, Xn)<sup>285</sup>114 / <sup>286</sup>114 / <sup>287</sup>114 / <sup>288</sup>114, E=256 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ , Q-values. Comparison with experimental values. JOUR PRLTA 105 182701

**A=286**

<sup>286</sup>113      20100G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>286</sup>114      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

                  2010EL06      NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, Xn)<sup>285</sup>114 / <sup>286</sup>114 / <sup>287</sup>114 / <sup>288</sup>114, E=256 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ , Q-values. Comparison with experimental values. JOUR PRLTA 105 182701

## A=287

- <sup>287</sup>114 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- 2010EI01 RADIOACTIVITY <sup>287,288</sup>114( $\alpha$ ); measured atomic properties of element 114; deduced volatility. Comparison with Hg, At, and element 112 (Cn). JOUR RAACA 98 133
- 2010EL06 NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, Xn)<sup>285</sup>114 / <sup>286</sup>114 / <sup>287</sup>114 / <sup>288</sup>114, E=256 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ , Q-values. Comparison with experimental values. JOUR PRLTA 105 182701
- <sup>287</sup>115 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

## A=288

- <sup>288</sup>114 20090G07 NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361
- 2010DU06 NUCLEAR REACTIONS <sup>244</sup>Pu(<sup>48</sup>Ca, 3n)<sup>289</sup>114, <sup>244</sup>Pu(<sup>48</sup>Ca, 4n)<sup>288</sup>114, E=259.4, 254.6 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ ,  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701
- 2010DU06 RADIOACTIVITY <sup>288,289</sup>114, <sup>285</sup>Cn( $\alpha$ ), <sup>281</sup>Ds( $\alpha$ ), <sup>284</sup>Cn, <sup>281</sup>Ds, <sup>277</sup>Hs(SF); measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701
- 2010EI01 RADIOACTIVITY <sup>287,288</sup>114( $\alpha$ ); measured atomic properties of element 114; deduced volatility. Comparison with Hg, At, and element 112 (Cn). JOUR RAACA 98 133
- 2010EL06 NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, Xn)<sup>285</sup>114 / <sup>286</sup>114 / <sup>287</sup>114 / <sup>288</sup>114, E=256 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ , Q-values. Comparison with experimental values. JOUR PRLTA 105 182701

KEYNUMBERS AND KEYWORDS

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**A=288 (continued)**

<sup>288</sup>115    20090G07    NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=289**

<sup>289</sup>114    20090G07    NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

2010DU06    NUCLEAR REACTIONS <sup>244</sup>Pu(<sup>48</sup>Ca, 3n)<sup>289</sup>114, <sup>244</sup>Pu(<sup>48</sup>Ca, 4n)<sup>288</sup>114, E=259.4, 254.6 MeV; measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ ,  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701

2010DU06    RADIOACTIVITY <sup>288,289</sup>114, <sup>285</sup>Cn( $\alpha$ ), <sup>281</sup>Ds( $\alpha$ ), <sup>284</sup>Cn, <sup>281</sup>Ds, <sup>277</sup>Hs(SF); measured reaction products, E $\alpha$ , I $\alpha$ ; deduced  $\alpha$ -decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 252701

<sup>289</sup>115    20100G01    RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>289</sup>116    20090G07    NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=290**

<sup>290</sup>115    20100G01    RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

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KEYNUMBERS AND KEYWORDS

**A=290 (continued)**

<sup>290</sup>116      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=291**

No references found

**A=292**

<sup>292</sup>116      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

<sup>292</sup>122      2010MA03      ATOMIC MASSES <sup>292</sup>122; measured masses and relative abundances using inductively coupled plasma sector field mass spectrometry; deduced superheavy nucleus with A=292, T<sub>1/2</sub>, long-lived isomeric state. JOUR IMPEE 19 131

**A=293**

<sup>293</sup>116      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

<sup>293</sup>117      20100G01      NUCLEAR REACTIONS <sup>249</sup>Bk(<sup>48</sup>Ca, 4n), E=252 MeV; <sup>249</sup>Bk(<sup>48</sup>Ca, 3n), E=247 MeV; measured E $\alpha$ , I $\alpha$ ,  $\alpha$ - $\alpha$  correlations. <sup>293,294</sup>117; deduced  $\sigma$ , decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 142502

                 20100G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502



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KEYNUMBERS AND KEYWORDS

**A=293 (continued)**

<sup>293</sup>118      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=294**

<sup>294</sup>117      20100G01      NUCLEAR REACTIONS <sup>249</sup>Bk(<sup>48</sup>Ca, 4n), E=252 MeV; <sup>249</sup>Bk(<sup>48</sup>Ca, 3n), E=247 MeV; measured E $\alpha$ , I $\alpha$ ,  $\alpha$ - $\alpha$  correlations. <sup>293,294</sup>117; deduced  $\sigma$ , decay chains, T<sub>1/2</sub>. JOUR PRLTA 104 142502

20100G01      RADIOACTIVITY <sup>293,294</sup>117, <sup>289,290</sup>115, <sup>285,286</sup>113, <sup>282</sup>Rg, <sup>278</sup>Mt, <sup>274</sup>Bh( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , and half-lives. <sup>270</sup>Db, <sup>281</sup>Rg(SF); measured TKE, and T<sub>1/2</sub>. JOUR PRLTA 104 142502

<sup>294</sup>118      20090G07      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>48</sup>Ca, n), (<sup>50</sup>Ti, n), (<sup>54</sup>Cr, n), (<sup>58</sup>Fe, n), (<sup>62</sup>Ni, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E≈200-300 MeV; analyzed SHE production  $\sigma$ . <sup>238</sup>U, <sup>237</sup>Np, <sup>242,244</sup>Pu, <sup>243</sup>Am, <sup>245,248</sup>Cm, <sup>249</sup>Cf(<sup>22</sup>Ne, 4n), (<sup>26</sup>Mg, 4n), (<sup>34</sup>S, 5n), (<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E≈200-300 MeV; measured E $\alpha$ , I $\alpha$ , SHE production  $\sigma$  using Gas-Filled Recoil Separator; analyzed reaction mechanism features; deduced Q-values, T<sub>1/2</sub> of sequential decay products and compared to calculations. JOUR ZAANE 42 361

**A=295**

No references found

**A=296**

No references found

**A=297**

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**A=298**

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**A=299**

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