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National Nuclear Data Center, Brookhaven National Laboratory

Document generated: February 1, 2011

This document lists experimental references added to Nuclear Science References (NSR) during the period January 1, 2009 to December 31, 2009. 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

${}^1\text{n}$	2007IMZX	NUCLEAR REACTIONS ${}^2\text{H}(\text{p}, 2\text{p})\text{n}$ , $E = 9.5$ MeV; measured $E_{\text{p}}$ , $I_{\text{p}}$ . REPT TUNL-XLVI,P64,Imig
	2007MAYY	NUCLEAR REACTIONS ${}^2\text{H}(\text{p}, 2\text{p})$ , $E=250$ MeV; measured $E_{\text{p}}$ , $I_{\text{p}}$ , $E_{\text{d}}$ , $I_{\text{d}}$ ; deduced $A_{\text{y}}$ , $\sigma(E)$ , $\sigma(\theta)$ ; calculated $A_{\text{y}}$ . Missing mass spectra. Incident protons polarized to 70%. Preliminary results only. REPT CNS-REP-76,P25,Maeda
	2008B03Z	NUCLEAR REACTIONS ${}^2\text{H}(\text{e}, \text{e}'\text{p})$ , $E=855.11$ MeV; measured $\sigma$ , missing momentum, kinematic variables; deduced interference response function. Comparison with Coupled Channels Calculations. JOUR PRVCA 78 054001
	2008KI21	NUCLEAR REACTIONS ${}^1\text{H}(\text{polarized d}, 2\text{p})$ , $E=130$ MeV; measured particle spectra, break-up cross sections. JOUR FBSYE 44 11
	2008LA17	NUCLEAR REACTIONS ${}^2\text{H}(\text{t}, \text{pt})$ , $(\text{t}, 2\text{d})$ , $E=35.5$ MeV; measured cross sections. ${}^3\text{H}(\text{p}, \text{p})$ , $(\text{p}, \text{d})$ ; deduced cross sections. JOUR FBSYE 44 353
	2008MA5Z	NUCLEAR REACTIONS ${}^2\text{H}(\text{p}, 2\text{p})$ , $E=190$ MeV; measured particle spectra and correlations, cross sections and analyzing powers. JOUR FBSYE 44 49
	2008MI26	NUCLEAR REACTIONS ${}^3\text{He}(\text{e}, \text{e}'2\text{p})$ , $(\text{e}, \text{e}'\text{np})$ , $E$ not given; measured cross sections. JOUR FBSYE 44 171
	2008TU07	NUCLEAR REACTIONS ${}^2\text{H}(\text{p}, 2\text{p})$ , $E=5$ MeV; measured $E_{\text{p}}$ , $I_{\text{p}}$ , pp-coin, momentum distributions, two- and three-body $\sigma$ . Trojan Horse Method. JOUR PRVCA 78 064001
	2009FUZZ	NUCLEAR REACTIONS ${}^4\text{He}(\text{n}, \text{n}')$ , $E=\text{thermal}$ ; $\text{Ar}(\text{n}, \text{n}')$ , $E=\text{thermal}$ ; measured $I_{\text{n}}$ , TOF; deduced $\sigma({}^4\text{He}) / \sigma(\text{Ar})$ ; ${}^1\text{n}(\text{n}, \text{n}')$ , $E=\text{thermal}$ ; measured $I_{\text{n}}$ , TOF; deduced n-n scattering length. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P53,Furman
	2009K011	RADIOACTIVITY ${}^1\text{n}(\beta^-)$ ; measured transverse polarization of electrons. JOUR PRLTA 102 172301
	2009PA03	RADIOACTIVITY ${}^1\text{n}(\beta^-)$ ; measured $\beta$ asymmetry parameter. JOUR PRLTA 102 012301
	2009SE05	NUCLEAR REACTIONS ${}^1\text{H}(\text{polarized d}, 2\text{p})$ , $E=135$ MeV / nucleon; measured $E_{\text{p}}$ , $I_{\text{p}}$ , polarization transfer coefficients and vector analyzing powers of outgoing proton. Comparison with calculations using three-nucleon Faddeev equation. JOUR PRVCA 79 054008
	2009SH18	NUCLEAR REACTIONS ${}^1,2\text{H}(\text{n}, \text{p})$ , $E=0.55\text{-}2.00$ GeV; measured $\sigma(\theta)$ ratio. Comparison with other data and energy-dependent phase-shift analysis results. JOUR ZAANE 39 267
	2009SPZZ	NUCLEAR REACTIONS ${}^2\text{H}({}^{11}\text{B}, \alpha{}^8\text{Be})\text{n}$ , $E=27$ MeV; measured $E(\text{particle})$ , $I(\text{particle})$ ; ${}^2\text{H}({}^{10}\text{B}, \alpha{}^7\text{Be})$ , $E=24.4$ MeV; measured $\alpha$ -Be-coin.; deduced momentum distribution, $\sigma({}^{11}\text{B}(\text{p}, \alpha_0))$ , S-factor using Trojan Horse Method. CONF Tokai (Perspective in Nuc Phys), Proc.P171,Spitaleri
${}^1\text{H}$	2007BLZW	NUCLEAR REACTIONS ${}^2\text{H}(\gamma, \text{n})$ , $E = 14, 16$ MeV; measured $I_{\text{n}}$ , $E_{\text{n}}$ ; deduced p-wave transition matrix element amplitudes. Comparison with SAPM calculations. REPT TUNL-XLVI,P92,Blackston

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KEYNUMBERS AND KEYWORDS

**A=1 (continued)**

- 2007ELZU NUCLEAR REACTIONS  $^1\text{H}(^{28}\text{Ne}, ^{28}\text{Ne}')$ ,  $^1\text{H}(^{28}\text{Ne}, ^{27}\text{Ne})$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ , particle- $\gamma$ -coin. REPT RIKEN 2006 Annual,P11,Elekes
- 2007ELZV NUCLEAR REACTIONS  $^1\text{H}(^{30}\text{Na}, ^{30}\text{Na}')$ ,  $^1\text{H}(^{31}\text{Na}, ^{31}\text{Na}')$ ,  $^1\text{H}(^{33}\text{Mg}, ^{33}\text{Mg}')$ ,  $^1\text{H}(^{34}\text{Mg}, ^{34}\text{Mg}')$ ,  $E \approx 50$  MeV / nucleon; measured  $I_\gamma$ ,  $E_\gamma$ , particle- $\gamma$ -coin.; deduced deformation. REPT RIKEN 2006 Annual,P7,Elekes
- 2007INZZ NUCLEAR REACTIONS  $^1\text{H}(^{30}\text{Ne}, ^{30}\text{Ne}')$ ,  $E \approx 44$  MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ , particle- $\gamma$  coin.,  $\gamma\gamma$ -coin.; deduced  $\gamma$  peak at 799 keV. REPT RIKEN 2006 Annual,P9,Inafuku
- 2007KOZN NUCLEAR REACTIONS  $^1\text{H}(^{14}\text{Be}, n^{12}\text{Be})$ ,  $^1\text{H}(^{14}\text{Be}, 2n^{12}\text{Be})$ ,  $E = 69$  MeV / nucleon; measured  $E_n$ ,  $I_n$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $\sigma$ . REPT RIKEN 2006 Annual,P27,Kondo
- 2007MIZO NUCLEAR REACTIONS  $^1\text{H}(^{36}\text{Mg}, ^{36}\text{Mg}')$ , E not given; measured  $E_\gamma$ , *Inullg*. Data are subject of analysis. REPT RIKEN 2006 Annual,P8,Michimasa
- 2007SAZP NUCLEAR REACTIONS  $^1\text{H}(^{14}\text{Be}, n^{13}\text{Be})$ ,  $E = 70$  MeV / nucleon; measured  $E_n$ ,  $I_n$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $\sigma(\theta)$ . REPT RIKEN 2006 Annual,P26,Satou
- 2007SAZQ NUCLEAR REACTIONS  $^1\text{H}(^6\text{He}, ^6\text{He})$ ,  $E = 71$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$ , polarization; deduced  $\sigma(\theta)$ , analyzing power. Compared with other data and calculations. REPT RIKEN 2006 Annual,P24,Sakaguchi
- 2007SAZR NUCLEAR REACTIONS  $^1\text{H}(^6\text{He}, ^6\text{He})$ ,  $E = 71$  MeV / nucleon; measured  $E_p$ ,  $I_p$ ; deduced  $\sigma(\theta)$ ,  $A_y$ ; analyzed  $A_y$  using optical model; deduced parameters. Polarization of the target: average 13.8%, maximum 20.4%. REPT CNS-REP-76,P29,Sakaguchi
- 2007TAZK NUCLEAR REACTIONS  $^1\text{H}(^{32}\text{Mg}, ^{32}\text{Mg}')$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ , particle- $\gamma$ -coin.,  $\theta(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using ECIS97 code. REPT RIKEN 2006 Annual,P5,Takeuchi
- 2007TAZL NUCLEAR REACTIONS  $^1\text{H}(^{60}\text{Cr}, ^{60}\text{Cr}')$ ,  $^1\text{H}(^{62}\text{Cr}, ^{62}\text{Cr}')$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma(2_1^+$ -g.s.),  $\beta_2$ . REPT RIKEN 2006 Annual,Pii,Takeshita
- 2007TEZW NUCLEAR REACTIONS  $^1\text{H}(^{20}\text{O}, ^{20}\text{O}')$ ,  $E = 300$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$  using thin solid hydrogen target. REPT RIKEN 2006 Annual,P18,Terashima
- 2007YAZP NUCLEAR REACTIONS  $^1\text{H}(^7\text{Be}, ^7\text{Be})$ ,  $E = 53.8$  MeV; measured  $E_p$ ,  $I_p$ ; deduced excitation function. S-factor to be deduced in future. REPT RIKEN 2006 Annual,P29,Yamaguchi
- 2008AB23 NUCLEAR REACTIONS  $^1\text{H}(p, p\pi^-\pi^+)$ ,  $E = 747, 793$  MeV; measured missing mass and invariant mass spectra,  $A_y$ ,  $A_y(\theta)$ ,  $\sigma$ ,  $\sigma(E)$ ,  $\sigma(\theta)$ . Comparison with other data and theory. JOUR ZAANE 37 267
- 2008AHZZ NUCLEAR REACTIONS  $^2\text{H}(\gamma, n)$ ,  $E = 2.44, 3.5, 4$  MeV; measured  $E_n$ ,  $I_n$ ; deduced fore-aft asymmetry, coefficients of Legendre polynomials,  $\sigma(\theta)$  not normalized and compared to older data and theoretical calculations. REPT TUNL-XLII,P98,Ahmed

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- 2008ELZX NUCLEAR REACTIONS  $^2\text{H}(^{22}\text{O}, ^{23}\text{O})$ , E=34 MeV / nucleon; measured En, In,  $\theta_n$ , Ep, Ip; deduced J,  $\pi$  of the lowest states. Evidence for disappearance of N=20 shell closure at Z=8. REPT RIKEN 2007 Annual,P11,Elekes
- 2008KAZR NUCLEAR REACTIONS  $^1\text{H}(^{74}\text{Ni}, ^{74}\text{Ni}')$ , E=81 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\beta_2$ ,  $\sigma(2^+)$ ; calculated  $\sigma$  using DWBA. Compared to data for Ni isotopes. REPT RIKEN 2007 Annual,P12,Kanno
- 2008MI26 NUCLEAR REACTIONS  $^3\text{He}(e, e'2p)$ , (e, e'np), E not given; measured cross sections. JOUR FBSYE 44 171
- 2008MIZW NUCLEAR REACTIONS  $^1\text{H}(^{36}\text{Mg}, ^{34}\text{Mg})$ ,  $^1\text{H}(^{36}\text{Mg}, ^{35}\text{Mg})$ ,  $^1\text{H}(^{36}\text{Mg}, ^{36}\text{Mg}')$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ , particle- $\gamma$ -coin. REPT RIKEN 2007 Annual,P9,Michimasa
- 2008RA28 NUCLEAR REACTIONS  $^2\text{H}(p, d)$ , E=135 MeV; measured  $\sigma(\theta)$ , vector analyzing power. JOUR FBSYE 44 27
- 2008SAZT NUCLEAR REACTIONS  $^1\text{H}(^8\text{He}, ^8\text{He})$ , E=71 MeV / nucleon; measured Ip,  $\theta(p)$ , I(particle),  $\theta(\text{particle})$  on polarized solid proton target. Analyzing power and  $\sigma$  to be deduced in future. REPT RIKEN 2007 Annual,P22,Sakaguchi
- 2009AB15 NUCLEAR REACTIONS  $\text{Be}(C, X)^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He} / ^6\text{He} / ^8\text{He}$ , E=301.6 MeV / nucleon; measured fragment distributions, momenta; deduced yields,  $\sigma(\theta, p)$ . JOUR BRSP 73 716
- 2009A001 NUCLEAR REACTIONS  $^1\text{H}(^{60}\text{Cr}, ^{60}\text{Cr}')$ , E=42 MeV / nucleon;  $^1\text{H}(^{62}\text{Cr}, ^{62}\text{Cr}')$ , E=39 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ , (particle) $\gamma$ -coin.  $^{60}\text{Cr}$ ; deduced deformation length.  $^{62}\text{Cr}$ ; deduced levels, J,  $\pi$ , deformation length. JOUR PRLTA 102 012502
- 2009DE42 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{Ne}, ^{19}\text{Ne}')$ , ( $^{15}\text{O}, ^{15}\text{O}$ ), E=9 MeV / nucleon; measured reaction fragments; deduced  $\sigma(\theta)$ ; JOUR IMPEE 18 2140
- 2009DY01 NUCLEAR REACTIONS  $^1\text{H}(p, pX)^1\text{H}$ , E=0.8-2.0 GeV; measured inclusive multipion production  $\sigma$ . Comparison with CELSIUS-WASA data. COSY storage ring and ANKE magnetic spectrometer. JOUR PRLTA 102 192301
- 2009EL03 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{20}\text{C}, ^{20}\text{C}')$ , E=37.6 MeV / nucleon;  $^1\text{H}(^{20}\text{C}, ^{20}\text{C}')$ , E=41.4 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ .  $^{20}\text{C}$ ; deduced levels, J,  $\pi$ , charge and neutron transition probabilities, B(E2). Comparison with shell model calculations. JOUR PRVCA 79 011302
- 2009GU17 NUCLEAR REACTIONS  $^9\text{Be}(\pi^-, p)$ ,  $^{12}\text{C}(\pi^-, t)$ , ( $\pi^-, d$ ), ( $\pi^-, ^3\text{He}$ ), ( $\pi^-, pd$ ), ( $\pi^-, 2d$ ), ( $\pi^-, 2t$ ),  $^{10}\text{B}(\pi^-, t\alpha)$ ,  $^{11}\text{B}(\pi^-, ^3\text{He}^7\text{H})$ , E at rest; $^{4,5,6,7}\text{H}$ ; measured missing-mass spectra; deduced level structures in  $^{4,5,6}\text{H}$ , evidence for  $^7\text{H}$ . JOUR PPNUE 40 558
- 2009J001 NUCLEAR REACTIONS  $^1\text{H}(p, p\gamma)$ , E=310 MeV; measured p-spectra,  $\sigma(E)$ ,  $\sigma(\theta)$ , missing mass; deduced di-proton final state. JOUR PYLBB 673 5

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- 2009KA29 NUCLEAR REACTIONS  ${}^3\text{He}(\gamma, d)(\gamma, p)$ ,  $E=14\text{-}31$  MeV; measured proton and deuteron spectra, and differential cross sections as a function of  $E\gamma$  using tagged-photon facility at MAX-lab. The two-body photodisintegration of  ${}^3\text{He}$  investigated. Comparison with previous measurements and theoretical calculations using Faddeev technique. JOUR PRVCA 80 044001
- 2009K011 RADIOACTIVITY  ${}^1\text{n}(\beta^-)$ ; measured transverse polarization of electrons. JOUR PRLTA 102 172301
- 2009KOZZ NUCLEAR REACTIONS  ${}^2\text{H}(n, 2n)$ ,  $E=40\text{-}60$  MeV; measured scattering length  $a_{nn}$ . CONF Cheboksary,P48,Konobeevsky
- 2009MA59 NUCLEAR REACTIONS  ${}^1\text{H}(\text{polarized } p, p')$ ,  $E=190$  MeV; measured bremsstrahlung  $\sigma$ ,  $\sigma(\theta)$  and relative energy of the two protons. Comparison with two soft-photon models. JOUR ZAANE 41 25
- 2009MI18 NUCLEAR REACTIONS  ${}^3\text{He}(e, e'np)$ ,  $E=220\text{-}270$  MeV; measured  $E_e$ ,  $I_e$ ,  $E_p$ ,  $I_p$  and  $E_n$ ,  $I_n$ ; deduced  $\sigma$ . Continuum Faddeev calculations. JOUR PRLTA 103 152501
- 2009OR01 NUCLEAR MOMENTS  ${}^1\text{H}$ ,  ${}^{67}\text{Zn}$ ; measured dynamic nuclear polarization. JOUR PRBMD 79 165316
- 2009PA03 RADIOACTIVITY  ${}^1\text{n}(\beta^-)$ ; measured  $\beta$  asymmetry parameter. JOUR PRLTA 102 012301
- 2009TA08 NUCLEAR REACTIONS  ${}^1\text{H}({}^{32}\text{Mg}, {}^{32}\text{Mg}')$ ,  $E=46.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , scattered particle spectra,  $\sigma$ ,  $\sigma(\theta)$ .  ${}^{32}\text{Mg}$ ; deduced levels,  $J$ ,  $\pi$ , deformation lengths, rms radii. Coupled-channel analysis of angular distribution cross sections.  ${}^{24,26,28,30,32,34}\text{Mg}$ ; level systematics. JOUR PRVCA 79 054319
- 2009TA31 NUCLEAR REACTIONS  ${}^1\text{H}({}^{32}\text{Mg}, {}^{32}\text{Mg}')$ ,  $E=45.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\text{-}\gamma\text{-coin.}$ ;  ${}^{32}\text{Mg}$  deduced level energies, decay and level scheme,  $J$ ,  $\pi$ ,  $\sigma(\theta)$ ,  $\beta_2$ . Secondary beam from  ${}^{40}\text{Ar}$  fragmentation. JOUR IMPEE 18 2025
- 2009TAZZ NUCLEAR REACTIONS  ${}^1\text{H}({}^{32}\text{Mg}, {}^{32}\text{Mg}')$ ,  $E=46.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma\text{-}$ , (particle) $\gamma\text{-coin}$ ,  $\sigma(\theta)$ .  ${}^{32}\text{Mg}$ ; deduced level energies,  $J$ ,  $\pi$ . REPT RIKEN-NC-NP-32,Takeuchi
- 2009WIZZ NUCLEAR REACTIONS  ${}^3\text{H}({}^{30}\text{Mg}, {}^{32}\text{Mg})$ ,  $E=1.83$  MeV / nucleon; measured  $E_p$ ,  $I_p$ ,  $\theta_p$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $E\gamma$ ,  $I\gamma$  using REX-ISOLDE and MINIBALL; deduced  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using DWBA. Compared to data. REPT MLL 2008 Annual,P4,Wimmer
- 2009YA01 NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be}')$ ,  $E=53.8$  MeV; measured proton spectra,  $E\gamma$ ,  $I\gamma$ , (proton) $\gamma\text{-coin}$ ,  $\sigma(E)$ ; deduced astrophysical S-factor.  ${}^8\text{B}$  deduced levels,  $J$ ,  $\pi$ , resonance parameters using R-matrix analysis. Comparison with data. Secondary radioactive beam. JOUR PYLBB 672 230
- 2009YAZU NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be})$ ,  $E(\text{cm})\approx 0.3\text{-}6.5$  MeV;  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be}')$ ,  $E(\text{cm})\approx 0.3\text{-}6.5$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $\sigma$ ,  $d\sigma$ , resonances in  ${}^8\text{B}$ . Presented R-matrix fit of resonances. CONF Tokai (Perspective in Nuc Phys), Proc.P189,Yamaguchi
- 2009YAZY NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be}')$ ,  $E=53.8$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function, elastic and inelastic  $\sigma(\theta)$ .  ${}^8\text{B}$ ; resonance parameters. REPT CNS-REP-81,Yamaguchi

## A=2

${}^2\text{n}$	2008KU19	NUCLEAR REACTIONS ${}^2\text{H}(\text{d}, 2\text{p})$ , $E=13, 248$ MeV; measured inclusive break-up cross sections. JOUR FBSYE 44 53
	2009BEZV	NUCLEAR REACTIONS ${}^3\text{H}(\text{d}, {}^3\text{He})$ , $E=37$ MeV; measured ${}^3\text{He}$ spectra at $\theta(\text{lab})=7.6\text{-}31.6^\circ$ , $d\sigma / d\theta$ , $d\sigma / d\theta dE$ . CONF Cheboksary,P149,Belyuskina
	2009SH18	NUCLEAR REACTIONS ${}^{1,2}\text{H}(\text{n}, \text{p})$ , $E=0.55\text{-}2.00$ GeV; measured $\sigma(\theta)$ ratio. Comparison with other data and energy-dependent phase-shift analysis results. JOUR ZAANE 39 267
${}^2\text{H}$	2007ELZT	NUCLEAR REACTIONS ${}^2\text{H}({}^{22}\text{O}, {}^{22}\text{O}')$ , $E=34$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin.; calculated $\sigma$ ; deduced $\beta_M$ deformation. REPT RIKEN 2006 Annual,P17,Elekes
	2007ELZU	NUCLEAR REACTIONS ${}^1\text{H}({}^{28}\text{Ne}, {}^{28}\text{Ne}')$ , ${}^1\text{H}({}^{28}\text{Ne}, {}^{27}\text{Ne})$ , $E$ not given; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin. REPT RIKEN 2006 Annual,P11,Elekes
	2007KHZS	NUCLEAR REACTIONS ${}^1\text{H}({}^6\text{He}, n\alpha)$ , $E=70$ MeV; ${}^1\text{H}({}^6\text{Li}, \alpha\text{p})$ , $E$ not given; measured $E\alpha$ , $E_n$ , $E_p$ , $E_d$ , particle-particle-coin. Strong di-neutron correlation, solid H target, backward scattering. REPT RIKEN 2006 Annual,P22,Khai
	2007KOZN	NUCLEAR REACTIONS ${}^1\text{H}({}^{14}\text{Be}, n{}^{12}\text{Be})$ , ${}^1\text{H}({}^{14}\text{Be}, 2n{}^{12}\text{Be})$ , $E=69$ MeV / nucleon; measured $E_n$ , $I_n$ , $E(\text{particle})$ , $I(\text{particle})$ ; deduced $\sigma$ . REPT RIKEN 2006 Annual,P27,Kondo
	2008HAZT	NUCLEAR REACTIONS ${}^1\text{H}({}^{20}\text{C}, {}^{18}\text{C})$ , ${}^1\text{H}({}^{20}\text{C}, {}^{19}\text{C})$ , $E\approx 40$ MeV / nucleon; measured $E(\text{particle})$ , $I(\text{particle})$ ; deduced longitudinal momentum distribution. REPT RIKEN 2007 Annual,P16,Hashizume
	2008KOZT	NUCLEAR REACTIONS ${}^1\text{H}({}^{18}\text{C}, {}^{17}\text{C})$ , $E\approx 80$ MeV / nucleon; ${}^1\text{H}({}^{19}\text{C}, {}^{18}\text{C})$ , $E\approx 70$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced transverse momentum distribution. REPT RIKEN 2007 Annual,P8,Kondo
	2008LA17	NUCLEAR REACTIONS ${}^2\text{H}(\text{t}, \text{pt})$ , $(\text{t}, 2\text{d})$ , $E=35.5$ MeV; measured cross sections. ${}^3\text{H}(\text{p}, \text{p})$ , $(\text{p}, \text{d})$ ; deduced cross sections. JOUR FBSYE 44 353
	2008MIZV	NUCLEAR REACTIONS ${}^1\text{H}({}^{36}\text{Mg}, {}^{34}\text{Mg})$ , ${}^1\text{H}({}^{36}\text{Mg}, {}^{35}\text{Mg})$ , ${}^1\text{H}({}^{36}\text{Mg}, {}^{36}\text{Mg}')$ , $E$ not given; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin. REPT RIKEN 2007 Annual,P9,Michimasa
	2008NIZY	NUCLEAR REACTIONS ${}^2\text{H}({}^8\text{He}, {}^8\text{He}')$ , $E=42$ MeV / nucleon; measured $E(\text{particle})$ , $I(\text{particle})$ , $E_t$ , $I_t$ , $E_n$ , $I_n$ . Further analysis in progress. REPT RIKEN 2007 Annual,P15,Nikolskii
	2009AB15	NUCLEAR REACTIONS $\text{Be}(\text{C}, \text{X}){}^1\text{H} / {}^2\text{H} / {}^3\text{H} / {}^3\text{He} / {}^4\text{He} / {}^6\text{He} / {}^8\text{He}$ , $E=301.6$ MeV / nucleon; measured fragment distributions, momenta; deduced yields, $\sigma(\theta, \text{p})$ . JOUR BRSPE 73 716
2009BE32	NUCLEAR REACTIONS ${}^3\text{H}(\text{d}, \text{d}')$ , $(\text{d}, \text{t})$ , $E=37$ MeV; measured $I_d$ , $E_d$ , $I_t$ , $E_t$ ; deduced $\sigma(\theta, E)$ , $\sigma(\theta)$ . JOUR UKPJA 54 658	
2009DI02	NUCLEAR REACTIONS ${}^2\text{H}(\text{p}, \text{p})$ , $E=1.8\text{-}3.2$ MeV; measured $E\pi$ , $I\pi$ , $s(\theta)$ . JOUR NIMBE 267 2341	

KEYNUMBERS AND KEYWORDS

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- 2009K002 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{C}, ^{18}\text{C})$ ,  $E=81$  MeV / nucleon;  $^1\text{H}(^{18}\text{C}, ^{17}\text{C})$ ,  $E=68$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , (particle)- $\gamma$  coin, transverse-momentum distributions.  $^{17,18}\text{C}$ ; deduced levels,  $J$ ,  $\pi$ . Comparison with continuum-discretized coupled-channel calculations. JOUR PRVCA 79 014602
- $^2\text{He}$  2007PEZT NUCLEAR REACTIONS  $^3\text{He}(\gamma, n)$ ,  $E = 12.8$  MeV; measured  $E_n$ ,  $I_n$ . Comparison with GEANT4 calculations. REPT TUNL-XLVI,P94,Perdue

**A=3**

- $^3\text{H}$  2007MIZN NUCLEAR REACTIONS  $^4\text{He}(^{22}\text{O}, ^{23}\text{F})$ ,  $^4\text{He}(^{23}\text{F}, ^{23}\text{F}')$ ,  $^4\text{He}(^{24}\text{F}, ^{23}\text{F})$ ,  $^4\text{He}(^{25}\text{Ne}, ^{23}\text{F})$ ,  $E$  not given; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin.; deduced level properties  $J$ ,  $\pi$ ,  $\gamma$  decay scheme. REPT RIKEN 2006 Annual,P10,Michimasa
- 2007OTZZ NUCLEAR REACTIONS  $^4\text{He}(^{12}\text{Be}, ^{13}\text{B})$ ,  $E=50$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin.; deduced  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using DWBA with shell-model code OXBASH; deduced deformation of excited states. REPT CNS-REP-76,P17,Ota
- 2008HAZT NUCLEAR REACTIONS  $^1\text{H}(^{20}\text{C}, ^{18}\text{C})$ ,  $^1\text{H}(^{20}\text{C}, ^{19}\text{C})$ ,  $E\approx 40$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced longitudinal momentum distribution. REPT RIKEN 2007 Annual,P16,Hashizume
- 2008LA17 NUCLEAR REACTIONS  $^2\text{H}(t, pt)$ ,  $(t, 2d)$ ,  $E=35.5$  MeV; measured cross sections.  $^3\text{H}(p, p)$ ,  $(p, d)$ ; deduced cross sections. JOUR FBSYE 44 353
- 2008MIZW NUCLEAR REACTIONS  $^1\text{H}(^{36}\text{Mg}, ^{34}\text{Mg})$ ,  $^1\text{H}(^{36}\text{Mg}, ^{35}\text{Mg})$ ,  $^1\text{H}(^{36}\text{Mg}, ^{36}\text{Mg}')$ ,  $E$  not given; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin. REPT RIKEN 2007 Annual,P9,Michimasa
- 2009AB15 NUCLEAR REACTIONS  $\text{Be}(\text{C}, \text{X})^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He} / ^6\text{He} / ^8\text{He}$ ,  $E=301.6$  MeV / nucleon; measured fragment distributions, momenta; deduced yields,  $\sigma(\theta, p)$ . JOUR BRSPE 73 716
- 2009BE32 NUCLEAR REACTIONS  $^3\text{H}(d, d')$ ,  $(d, t)$ ,  $E=37$  MeV; measured  $I_d$ ,  $E_d$ ,  $I_t$ ,  $E_t$ ; deduced  $\sigma(\theta, E)$ ,  $\sigma(\theta)$ . JOUR UKPJA 54 658
- 2009GU17 NUCLEAR REACTIONS  $^9\text{Be}(\pi^-, p)$ ,  $^{12}\text{C}(\pi^-, t)$ ,  $(\pi^-, d)$ ,  $(\pi^-, ^3\text{He})$ ,  $(\pi^-, pd)$ ,  $(\pi^-, 2d)$ ,  $(\pi^-, 2t)$ ,  $^{10}\text{B}(\pi^-, t\alpha)$ ,  $^{11}\text{B}(\pi^-, ^3\text{He}^7\text{H})$ ,  $E$  at rest; $^{4,5,6,7}\text{H}$ ; measured missing-mass spectra; deduced level structures in  $^{4,5,6}\text{H}$ , evidence for  $^7\text{H}$ . JOUR PPNUE 40 558
- 2009JI03 NUCLEAR REACTIONS  $^2\text{H}(d, p)$ ,  $E$  not given; measured proton spectrum. JOUR CMPHC 18 1428
- 2009LA23 NUCLEAR REACTIONS  $^2\text{H}(d, p)$ ,  $^6\text{Li}(d, p)$ ,  $(d, \alpha)$ ,  $^7\text{Li}(d, \alpha)$ ,  $(d, ^5\text{He})$ ,  $E=100$  keV; measured  $E_p$ ,  $I_p$ ,  $E_\alpha$ ,  $I_\alpha$ ,  $\sigma$ ,  $\sigma(\theta)$ .  $E(d)=50, 60, 70, 80$  MeV was also used. JOUR PRVCA 80 044617
- 2009RA32 NUCLEAR REACTIONS  $^2\text{H}(^{20}\text{O}, ^{19}\text{O})^3\text{H}$ ,  $E=11$  MeV / nucleon; measured reaction fragments,  $E\gamma$ ,  $I\gamma$ ; deduced  $J$ ,  $\pi$ ,  $\sigma(\theta)$ . Comparison with DWBA calculations. JOUR IMPEE 18 2056

KEYNUMBERS AND KEYWORDS

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**A=3 (continued)**

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|               | 2009R004 | NUCLEAR REACTIONS $^1\text{H}(^{11}\text{Li}, ^9\text{Li})$ , $E=5$ MeV / nucleon; measured reaction Q-value using angle-angle kinematical correlations of reaction products and by energy correlations between $^9\text{Li}$ recoils and outgoing tritons. JOUR PRVCA 79 031603 |
| $^3\text{He}$ | 2007JAZV | NUCLEAR REACTIONS $^2\text{H}(\text{polarized d}, n)$ , $E=270$ MeV; measured vector and tensor analyzing powers. REPT JINR-E1-2007-108, Janek   |
|               | 2008TA31 | NUCLEAR REACTIONS $^1\text{H}(\text{d}, \gamma)$ , $E=196$ MeV; measured analyzing powers. JOUR FBSYE 44 179   |
|               | 2009AB15 | NUCLEAR REACTIONS $\text{Be}(\text{C}, \text{X})^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He} / ^6\text{He} / ^8\text{He}$ , $E=301.6$ MeV / nucleon; measured fragment distributions, momenta; deduced yields, $\sigma(\theta, p)$ . JOUR BRSPPE 73 716      |
|               | 2009BYZZ | NUCLEAR REACTIONS $^2\text{H}(\text{d}, n)$ , $E=2.2-6.0$ keV; measured $E_n$ , $I_n$ , $\sigma$ ; deduced upper limit of electronic shielding potential, astrophysical S-factor. CONF Cheboksary, P104, Bystritsky  |
|               | 2009HU14 | NUCLEAR REACTIONS $^3\text{He}(n, n)$ , $E=\text{reactor spectrum}$ ; measured $E_n$ , $I_n$ , neutron spectra; deduced neutron polarization, spin-dependent scattering length. JOUR NIMAE 611 235   |

**A=4**

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| $^4\text{n}$  | 2007NIZW | NUCLEAR REACTIONS $^2\text{H}(^8\text{He}, t)$ , $^2\text{H}(^8\text{He}, \alpha)$ , $^2\text{H}(^8\text{He}, ^6\text{Li})$ , $^2\text{H}(^8\text{He}, \text{d}\alpha)$ , $^2\text{H}(^8\text{He}, t)$ , $E\approx 42$ MeV / nucleon; $^2\text{H}(^{12}\text{Be}, ^3\text{He})$ , $^2\text{H}(^{12}\text{Be}, ^6\text{Li})$ , $^2\text{H}(^{12}\text{Be}, \text{d}\alpha)$ , $^2\text{H}(^{12}\text{Be}, t)$ , $E\approx 71$ MeV / nucleon; measured $E(\text{particle})$ , $I(\text{particle})$ , particle-particle-coin. REPT RIKEN 2006 Annual, P21, Nikolskii |
| $^4\text{H}$  | 2008GUZU | NUCLEAR REACTIONS $^{11}\text{B}(\pi^-, t\alpha)$ , $(\pi^-, t^3\text{He})$ , $^{10}\text{B}(\pi^-, \text{d}\alpha)$ , $E$ at rest; measured missing-mass spectra. $^4\text{H}$ , $^5\text{H}$ ; deduced excited state energies. LAMPF, two-channel spectrometer. CONF Moscow, P80, Gurov   |
|               | 2009GU03 | NUCLEAR REACTIONS $^{10,11}\text{B}(\pi^-, \text{X})^4\text{H} / ^5\text{H}$ , $E$ not given; measured particle, missing-mass spectra; Observed resonance states; deduced resonance parameters. JOUR BRSPPE 73 139  |
|               | 2009GU17 | NUCLEAR REACTIONS $^9\text{Be}(\pi^-, p)$ , $^{12}\text{C}(\pi^-, t)$ , $(\pi^-, \text{d})$ , $(\pi^-, ^3\text{He})$ , $(\pi^-, \text{pd})$ , $(\pi^-, 2\text{d})$ , $(\pi^-, 2t)$ , $^{10}\text{B}(\pi^-, t\alpha)$ , $^{11}\text{B}(\pi^-, ^3\text{He}^7\text{H})$ , $E$ at rest; $^4,5,6,7\text{H}$ ; measured missing-mass spectra; deduced level structures in $^4,5,6\text{H}$ , evidence for $^7\text{H}$ . JOUR PPNU 40 558   |
| $^4\text{He}$ | 2007MIZN | NUCLEAR REACTIONS $^4\text{He}(^{22}\text{O}, ^{23}\text{F})$ , $^4\text{He}(^{23}\text{F}, ^{23}\text{F}')$ , $^4\text{He}(^{24}\text{F}, ^{23}\text{F})$ , $^4\text{He}(^{25}\text{Ne}, ^{23}\text{F})$ , $E$ not given; measured $E_\gamma$ , $I_\gamma$ , particle- $\gamma$ -coin.; deduced level properties $J$ , $\pi$ , $\gamma$ decay scheme. REPT RIKEN 2006 Annual, P10, Michimasa   |
|               | 2009AB15 | NUCLEAR REACTIONS $\text{Be}(\text{C}, \text{X})^1\text{H} / ^2\text{H} / ^3\text{H} / ^3\text{He} / ^4\text{He} / ^6\text{He} / ^8\text{He}$ , $E=301.6$ MeV / nucleon; measured fragment distributions, momenta; deduced yields, $\sigma(\theta, p)$ . JOUR BRSPPE 73 716   |
|               | 2009FUZZ | NUCLEAR REACTIONS $^4\text{He}(n, n')$ , $E=\text{thermal}$ ; $\text{Ar}(n, n')$ , $E=\text{thermal}$ ; measured $I_n$ , TOF; deduced $\sigma(^4\text{He}) / \sigma(\text{Ar})$ ; $^1\text{n}(n, n')$ , $E=\text{thermal}$ ; measured $I_n$ , TOF; deduced n-n scattering length. CONF Ulaanbaatar (Nucl Phys and Appls) Proc., P53, Furman   |



KEYNUMBERS AND KEYWORDS

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**A=4** (*continued*)

- 2009GR07 RADIOACTIVITY  ${}^6\text{Be}$ ,  ${}^{45}\text{Fe}(2p)$ ; measured energy and angular correlation distributions. JOUR PYLBB 677 30
- 2009GR11 RADIOACTIVITY  ${}^6\text{Be}(2p)$ [from  ${}^{10}\text{C}(\alpha)$ ]; measured  $E_p$ ,  $I_\pi$ , angular distributions. JOUR PRVCA 80 034602
- 2009KE03 NUCLEAR REACTIONS  ${}^2\text{H}(d, 2\pi^0)$ ,  $(d, \pi^+\pi^-)$ ,  $E=712, 1029$  MeV; measured  $\sigma(\theta)$ , invariant mass spectra, energy spectra and other reaction observables. Comparison with simplified  $\Delta\Delta$  model and earlier results. JOUR NUPAB 825 71
- 2009LA23 NUCLEAR REACTIONS  ${}^2\text{H}(d, p)$ ,  ${}^6\text{Li}(d, p)$ ,  $(d, \alpha)$ ,  ${}^7\text{Li}(d, \alpha)$ ,  $(d, {}^5\text{He})$ ,  $E=100$  keV; measured  $E_p$ ,  $I_p$ ,  $E_\alpha$ ,  $I_\alpha$ ,  $\sigma$ ,  $\sigma(\theta)$ .  $E(d)=50, 60, 70, 80$  MeV was also used. JOUR PRVCA 80 044617
- 2009OL01 NUCLEAR REACTIONS  ${}^1\text{H}({}^{16}\text{O}, X){}^4\text{He}$ ,  $E$  at 3.25 GeV / c per nucleon; measured cross sections. JOUR PANUE 72 77

**A=5**

- ${}^5\text{H}$  2008GUZU NUCLEAR REACTIONS  ${}^{11}\text{B}(\pi^-, t\alpha)$ ,  $(\pi^-, t{}^3\text{He})$ ,  ${}^{10}\text{B}(\pi^-, d\alpha)$ ,  $E$  at rest; measured missing-mass spectra.  ${}^4\text{H}$ ,  ${}^5\text{H}$ ; deduced excited state energies. LAMPF, two-channel spectrometer. CONF Moscow,P80,Gurov
- 2009GU03 NUCLEAR REACTIONS  ${}^{10,11}\text{B}(\pi^-, X){}^4\text{H} / {}^5\text{H}$ ,  $E$  not given; measured particle, missing-mass spectra; Observed resonance states; deduced resonance parameters. JOUR BRSPE 73 139
- 2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, p)$ ,  ${}^{12}\text{C}(\pi^-, t)$ ,  $(\pi^-, d)$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, pd)$ ,  $(\pi^-, 2d)$ ,  $(\pi^-, 2t)$ ,  ${}^{10}\text{B}(\pi^-, t\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}{}^7\text{H})$ ,  $E$  at rest; ${}^4,5,6,7\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^4,5,6\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- ${}^5\text{He}$  2007MIZN NUCLEAR REACTIONS  ${}^4\text{He}({}^{22}\text{O}, {}^{23}\text{F})$ ,  ${}^4\text{He}({}^{23}\text{F}, {}^{23}\text{F}')$ ,  ${}^4\text{He}({}^{24}\text{F}, {}^{23}\text{F})$ ,  ${}^4\text{He}({}^{25}\text{Ne}, {}^{23}\text{F})$ ,  $E$  not given; measured  $E_\gamma$ ,  $I_\gamma$ , particle- $\gamma$ -coin.; deduced level properties  $J$ ,  $\pi$ ,  $\gamma$  decay scheme. REPT RIKEN 2006 Annual,P10,Michimasa
- 2008AKZZ NUCLEAR REACTIONS  ${}^6\text{Li}(\gamma, p)$ ,  $E$  not given; measured  $E_n$ ,  $I_n$ ; deduced  $\sigma(\theta)$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P270,Akkurt
- 2009AK03 NUCLEAR REACTIONS  ${}^1\text{H}({}^8\text{He}, np)$ ,  $E=240$  MeV / nucleon; measured fragment spectra, neutron spectra, relative energy spectra; deduced spectroscopic factor;  ${}^{12}\text{C}({}^6\text{He}, Xn){}^5\text{He}$ ,  $E=240$  MeV / nucleon;  ${}^{12}\text{C}({}^8\text{He}, Xn){}^7\text{He}$ ,  $E=227$  MeV / nucleon; analyzed fragment spectra, neutron spectra, relative energy spectra; deduced resonance parameters using R-matrix analysis, configurations, reaction mechanism features. JOUR PYLBB 679 191
- 2009LA23 NUCLEAR REACTIONS  ${}^2\text{H}(d, p)$ ,  ${}^6\text{Li}(d, p)$ ,  $(d, \alpha)$ ,  ${}^7\text{Li}(d, \alpha)$ ,  $(d, {}^5\text{He})$ ,  $E=100$  keV; measured  $E_p$ ,  $I_p$ ,  $E_\alpha$ ,  $I_\alpha$ ,  $\sigma$ ,  $\sigma(\theta)$ .  $E(d)=50, 60, 70, 80$  MeV was also used. JOUR PRVCA 80 044617

## A=6

- <sup>6</sup>H      2007NIZW      NUCLEAR REACTIONS <sup>2</sup>H(<sup>8</sup>He, t), <sup>2</sup>H(<sup>8</sup>He, α), <sup>2</sup>H(<sup>8</sup>He, <sup>6</sup>Li), <sup>2</sup>H(<sup>8</sup>He, dα), <sup>2</sup>H(<sup>8</sup>He, t), E≈42 MeV / nucleon; <sup>2</sup>H(<sup>12</sup>Be, <sup>3</sup>He), <sup>2</sup>H(<sup>12</sup>Be, <sup>6</sup>Li), <sup>2</sup>H(<sup>12</sup>Be, dα), <sup>2</sup>H(<sup>12</sup>Be, t), E≈71 MeV / nucleon; measured E(particle), I(particle), particle-particle-coin. REPT RIKEN 2006 Annual,P21,Nikolskii
- 2009GU17      NUCLEAR REACTIONS <sup>9</sup>Be(π<sup>-</sup>, p), <sup>12</sup>C(π<sup>-</sup>, t), (π<sup>-</sup>, d), (π<sup>-</sup>,<sup>3</sup>He), (π<sup>-</sup>, pd), (π<sup>-</sup>, 2d), (π<sup>-</sup>, 2t), <sup>10</sup>B(π<sup>-</sup>, tα), <sup>11</sup>B(π<sup>-</sup>,<sup>3</sup>He<sup>7</sup>H), E at rest;<sup>4,5,6,7</sup>H; measured missing-mass spectra; deduced level structures in <sup>4,5,6</sup>H, evidence for <sup>7</sup>H. JOUR PPNUE 40 558
- <sup>6</sup>He      2009AB15      NUCLEAR REACTIONS Be(C, X)<sup>1</sup>H / <sup>2</sup>H / <sup>3</sup>H / <sup>3</sup>He / <sup>4</sup>He / <sup>6</sup>He / <sup>8</sup>He, E=301.6 MeV / nucleon; measured fragment distributions, momenta; deduced yields, σ(θ, p). JOUR BRSPPE 73 716
- 2009G001      NUCLEAR REACTIONS <sup>3</sup>H(<sup>6</sup>He, p), E=25 MeV / nucleon; <sup>3</sup>H(<sup>8</sup>He, p), E=27.4 MeV / nucleon; measured fragment, proton energies, (fragment)(proton)-coin and missing mass spectra; deduced σ. <sup>6,8</sup>He deduced ground state energies, E1 strength distribution. Comparison with other data and calculations. Secondary radioactive beam. JOUR PYLBB 672 22
- <sup>6</sup>Li      2007MIZN      NUCLEAR REACTIONS <sup>4</sup>He(<sup>22</sup>O, <sup>23</sup>F), <sup>4</sup>He(<sup>23</sup>F, <sup>23</sup>F'), <sup>4</sup>He(<sup>24</sup>F, <sup>23</sup>F), <sup>4</sup>He(<sup>25</sup>Ne, <sup>23</sup>F), E not given; measured Eγ, Iγ, particle-γ-coin.; deduced level properties J, π, γ decay scheme. REPT RIKEN 2006 Annual,P10,Michimasa
- 2008BUZV      NUCLEAR REACTIONS <sup>6,7</sup>Li(p, p), (d, d), (<sup>3</sup>He, <sup>3</sup>He), (α, α), E=72 MeV; measured σ(θ). CONF Cappadocia (Nuclear Physics and Astrophysics),P203,Burtebayev
- 2008CH28      NUCLEAR REACTIONS H, C(<sup>12</sup>Be, X), E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions. <sup>6,7,9</sup>Li, <sup>8,9,10</sup>Be, <sup>12,13</sup>B; deduced levels, J, π, widths, isospins. JOUR PRVCA 78 054307
- 2009AG11      NUCLEAR REACTIONS <sup>6,7</sup>Li, <sup>9</sup>Be, <sup>12</sup>C, <sup>16</sup>O(K<sup>-</sup>, π<sup>-</sup>), E at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths. <sup>7</sup>Li, <sup>11</sup>B, <sup>15</sup>N; deduced hypernucleus ground-state J, π. Comparison with other data. JOUR PYLBB 681 139
- 2009BR10      ATOMIC MASSES <sup>6,7</sup>Li; measured frequency ratio using the TITAN Penning trap mass spectrometer at ISAC-TRIUMF facility. <sup>6</sup>Li; deduced mass. Comparisons with previous measurements and AME-2003 evaluation. JOUR PRVCA 80 044318
- 2009CH39      NUCLEAR REACTIONS <sup>6,7</sup>Li(n, xn), (n, n), (n, n'), E = 8.17, 10.27 MeV; measured En, In using TOF; deduced σ(θ, E). Comparison with Monte Carlo simulation. JOUR NSENA 163 272
- 2009GU17      NUCLEAR REACTIONS <sup>9</sup>Be(π<sup>-</sup>, p), <sup>12</sup>C(π<sup>-</sup>, t), (π<sup>-</sup>, d), (π<sup>-</sup>,<sup>3</sup>He), (π<sup>-</sup>, pd), (π<sup>-</sup>, 2d), (π<sup>-</sup>, 2t), <sup>10</sup>B(π<sup>-</sup>, tα), <sup>11</sup>B(π<sup>-</sup>,<sup>3</sup>He<sup>7</sup>H), E at rest;<sup>4,5,6,7</sup>H; measured missing-mass spectra; deduced level structures in <sup>4,5,6</sup>H, evidence for <sup>7</sup>H. JOUR PPNUE 40 558

KEYNUMBERS AND KEYWORDS

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**A=6 (continued)**

- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, \text{X}){}^6\text{Li}$  /  ${}^7\text{Li}$  /  ${}^8\text{Li}$  /  ${}^7\text{Be}$  /  ${}^9\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{10}\text{B}$  /  ${}^{11}\text{B}$ , E=51 MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ , E=51 MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ , E=24 MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- ${}^6\text{Be}$  2009GR07 RADIOACTIVITY  ${}^6\text{Be}$ ,  ${}^{45}\text{Fe}(2p)$ ; measured energy and angular correlation distributions. JOUR PYLBB 677 30
- 2009GR11 RADIOACTIVITY  ${}^6\text{Be}(2p)$ [from  ${}^{10}\text{C}(\alpha)$ ]; measured  $E_p$ ,  $I_\pi$ , angular distributions. JOUR PRVCA 80 034602

**A=7**

- ${}^7\text{H}$  2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, p)$ ,  ${}^{12}\text{C}(\pi^-, t)$ ,  $(\pi^-, d)$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, pd)$ ,  $(\pi^-, 2d)$ ,  $(\pi^-, 2t)$ ,  ${}^{10}\text{B}(\pi^-, t\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}{}^7\text{H})$ , E at rest;  ${}^4,5,6,7\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^4,5,6\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- ${}^7\text{He}$  2007NIZW NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{He}, t)$ ,  ${}^2\text{H}({}^8\text{He}, \alpha)$ ,  ${}^2\text{H}({}^8\text{He}, {}^6\text{Li})$ ,  ${}^2\text{H}({}^8\text{He}, d\alpha)$ ,  ${}^2\text{H}({}^8\text{He}, t)$ , E $\approx$ 42 MeV / nucleon;  ${}^2\text{H}({}^{12}\text{Be}, {}^3\text{He})$ ,  ${}^2\text{H}({}^{12}\text{Be}, {}^6\text{Li})$ ,  ${}^2\text{H}({}^{12}\text{Be}, d\alpha)$ ,  ${}^2\text{H}({}^{12}\text{Be}, t)$ , E $\approx$ 71 MeV / nucleon; measured E(particle), I(particle), particle-particle-coin. REPT RIKEN 2006 Annual,P21,Nikolskii
- 2008NIZZ NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{He}, t)$ , E=42 MeV / nucleon;  ${}^2\text{H}({}^{12}\text{Be}, t)$ , E=71 MeV / nucleon; measured  $E_t$ ,  $I_t$ , particle-particle-coin.; deduced J,  $\pi$  of some levels. REPT RIKEN 2007 Annual,P14,Nikolskii
- 2009AK03 NUCLEAR REACTIONS  ${}^1\text{H}({}^8\text{He}, np)$ , E=240 MeV / nucleon; measured fragment spectra, neutron spectra, relative energy spectra; deduced spectroscopic factor;  ${}^{12}\text{C}({}^6\text{He}, \text{Xn}){}^5\text{He}$ , E=240 MeV / nucleon;  ${}^{12}\text{C}({}^8\text{He}, \text{Xn}){}^7\text{He}$ , E=227 MeV / nucleon; analyzed fragment spectra, neutron spectra, relative energy spectra; deduced resonance parameters using R-matrix analysis, configurations, reaction mechanism features. JOUR PYLBB 679 191
- ${}^7\text{Li}$  2007ISZX NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{Li}, t)$ , E(cm)=0.3, 0.4, 0.5, 0.7, 0.8, 1.0, 1.1 MeV; measured E(particle), I(particle); deduced  $\sigma$ , reaction rate. Compared to other data. REPT JAEA-Review 2007-046,P47,Ishiyama
- 2008BUZV NUCLEAR REACTIONS  ${}^6,7\text{Li}(p, p)$ ,  $(d, d)$ ,  $({}^3\text{He}, {}^3\text{He})$ ,  $(\alpha, \alpha)$ , E=72 MeV; measured  $\sigma(\theta)$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P203,Burtebayev
- 2008CH28 NUCLEAR REACTIONS  $\text{H}, \text{C}({}^{12}\text{Be}, \text{X})$ , E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  ${}^6,7,9\text{Li}$ ,  ${}^8,9,10\text{Be}$ ,  ${}^{12,13}\text{B}$ ; deduced levels, J,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2008LA18 NUCLEAR REACTIONS  ${}^2\text{H}({}^{11}\text{B}, n\alpha)$ ,  $({}^{10}\text{B}, p\alpha)$ , E=27 MeV; measured  $E_\alpha$ ,  $I_\alpha$ , fragment spectra, cross sections.  ${}^{11}\text{B}(p, \alpha)$ ,  ${}^{10}\text{B}(n, \alpha)$ ; deduced S-factors. JOUR NIFBA 31 423

**A=7 (continued)**

- 2009AG11 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths.  ${}^7\text{Li}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}$ ; deduced hypernucleus ground-state J,  $\pi$ . Comparison with other data. JOUR PYLBB 681 139
- 2009BR10 ATOMIC MASSES  ${}^6,7\text{Li}$ ; measured frequency ratio using the TITAN Penning trap mass spectrometer at ISAC-TRIUMF facility.  ${}^6\text{Li}$ ; deduced mass. Comparisons with previous measurements and AME-2003 evaluation. JOUR PRVCA 80 044318
- 2009CH39 NUCLEAR REACTIONS  ${}^6,7\text{Li}(\text{n}, \text{xn})$ ,  $(\text{n}, \text{n})$ ,  $(\text{n}, \text{n}')$ , E = 8.17, 10.27 MeV; measured En, In using TOF; deduced  $\sigma(\theta, \text{E})$ . Comparison with Monte Carlo simulation. JOUR NSENA 163 272
- 2009HA11 NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{Li}, \text{t})$ , E=0.18, 0.24, 0.30, 0.40, 0.46, 0.60, 0.75 MeV / nucleon; measured charged-particle spectra,  $\sigma$ ,  $\sigma(\theta)$ ,  $\sigma(\text{E})$ ; deduced  ${}^7\text{Li}$  excitation energy spectra, astrophysical reaction rate. Comparison with other data. JOUR PYLBB 674 276
- 2009ISZZ NUCLEAR REACTIONS  ${}^8\text{Li}(\alpha, \text{n})$ , E(cm)=0.7-2.6 MeV;  ${}^8\text{Li}(\text{d}, \text{t})$ , E=0.3-1.2 MeV / nucleon;  ${}^{12}\text{B}(\alpha, \text{n})$ , E(cm)=1.1-3.6 MeV; measured E(particle), I(particle); deduced  $\sigma$ , reaction rates. Compared to other data and predictions, discussed reaction paths of r-process. CONF Tokai (Perspective in Nuc Phys), Proc.P177,Ishiyama
- 2009LA23 NUCLEAR REACTIONS  ${}^2\text{H}(\text{d}, \text{p})$ ,  ${}^6\text{Li}(\text{d}, \text{p})$ ,  $(\text{d}, \alpha)$ ,  ${}^7\text{Li}(\text{d}, \alpha)$ ,  $(\text{d}, {}^5\text{He})$ , E=100 keV; measured Ep, Ip, E $\alpha$ , I $\alpha$ ,  $\sigma$ ,  $\sigma(\theta)$ . E(d)=50, 60, 70, 80 MeV was also used. JOUR PRVCA 80 044617
- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, \text{X}){}^6\text{Li}$  /  ${}^7\text{Li}$  /  ${}^8\text{Li}$  /  ${}^7\text{Be}$  /  ${}^9\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{10}\text{B}$  /  ${}^{11}\text{B}$ , E=51 MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ , E=51 MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ , E=24 MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- ${}^7\text{Be}$  2007GYZY NUCLEAR REACTIONS  ${}^3\text{He}(\alpha, \gamma)$ , E(cm) = 93, 106, 170 keV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , s-factor, reaction rate uncertainty. REPT ATOMKI 2007 Annual,P21,Gyurky
- 2008C012 NUCLEAR REACTIONS  ${}^3\text{He}(\alpha, \gamma)$ , E=220, 250, 400 keV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , branching ratio; deduced astrophysical S-factor. Prompt- $\gamma$  technique, HPGe detector in the Gran Sasso underground laboratory. Comparison with other data. JOUR NUPAB 814 144
- 2009KI05 NUCLEAR REACTIONS  ${}^7\text{Li}(\text{p}, \text{n})$ , E=2.5 MeV; Measured neutron spectra,  $\sigma(\theta)$ . Dosimetric characterization of therapeutic neutron beam. JOUR ARISE 67 1173
- 2009N002 NUCLEAR MOMENTS  ${}^{7,9,10,11}\text{Be}$ ; measured isotope shifts; deduced nuclear charge radii. JOUR PRLTA 102 062503
- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, \text{X}){}^6\text{Li}$  /  ${}^7\text{Li}$  /  ${}^8\text{Li}$  /  ${}^7\text{Be}$  /  ${}^9\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{10}\text{B}$  /  ${}^{11}\text{B}$ , E=51 MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ , E=51 MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ , E=24 MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609

KEYNUMBERS AND KEYWORDS

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**A=7 (continued)**

- 2009SA06 NUCLEAR REACTIONS  ${}^7\text{Li}$ , C(p, n), E=297 MeV;  ${}^{58}\text{Ni}$ ,  ${}^{70}\text{Zn}$ ,  ${}^{114}\text{Cd}$ ,  ${}^{118}\text{Sn}$ ,  ${}^{120}\text{Sn}$ (p, n), E=198, 297 MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  ${}^7\text{Be}$ ,  ${}^{12}\text{N}$ ,  ${}^{13}\text{N}$ ,  ${}^{58}\text{Cu}$ ,  ${}^{70}\text{Ga}$ ,  ${}^{114}\text{In}$ ,  ${}^{118}\text{Sb}$ ,  ${}^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
- 2009WAZY RADIOACTIVITY  ${}^7,{}^{11}\text{Be}$ ; measured laser-microwave spectra; deduced hyperfine splittings, nuclear magnetic moment, magnetization radii. Ion trap at SLOWRI facility. CONF Tokai (Perspective in Nuc Phys), Proc.P109,Wade

**A=8**

- ${}^8\text{He}$  2007NIZW NUCLEAR REACTIONS  ${}^2\text{H}({}^8\text{He}, \text{t})$ ,  ${}^2\text{H}({}^8\text{He}, \alpha)$ ,  ${}^2\text{H}({}^8\text{He}, {}^6\text{Li})$ ,  ${}^2\text{H}({}^8\text{He}, \text{d}\alpha)$ ,  ${}^2\text{H}({}^8\text{He}, \text{t})$ , E $\approx$ 42 MeV / nucleon;  ${}^2\text{H}({}^{12}\text{Be}, {}^3\text{He})$ ,  ${}^2\text{H}({}^{12}\text{Be}, {}^6\text{Li})$ ,  ${}^2\text{H}({}^{12}\text{Be}, \text{d}\alpha)$ ,  ${}^2\text{H}({}^{12}\text{Be}, \text{t})$ , E $\approx$ 71 MeV / nucleon; measured E(particle), I(particle), particle-particle-coin. REPT RIKEN 2006 Annual,P21,Nikolskii
- 2009AB15 NUCLEAR REACTIONS Be(C, X) ${}^1\text{H} / {}^2\text{H} / {}^3\text{H} / {}^3\text{He} / {}^4\text{He} / {}^6\text{He} / {}^8\text{He}$ , E=301.6 MeV / nucleon; measured fragment distributions, momenta; deduced yields,  $\sigma(\theta, \text{p})$ . JOUR BRSPPE 73 716
- 2009CH29 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, \text{p})$ ,  ${}^3\text{H}({}^8\text{He}, \text{p})$ , E=25 MeV; measured mass spectrum; deduced J,  $\pi$ , level energies. JOUR APOBB 40 899
- 2009G001 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, \text{p})$ , E=25 MeV / nucleon;  ${}^3\text{H}({}^8\text{He}, \text{p})$ , E=27.4 MeV / nucleon; measured fragment, proton energies, (fragment)(proton)-coin and missing mass spectra; deduced  $\sigma$ .  ${}^6,{}^8\text{He}$  deduced ground state energies, E1 strength distribution. Comparison with other data and calculations. Secondary radioactive beam. JOUR PYLBB 672 22
- 2009GR03 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, \text{p})$ , E not given; measured  $E_p$ ,  $I_p$ , cross sections. Deduced B(E1). JOUR PPNLA 6 118
- 2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, \text{p})$ ,  ${}^{12}\text{C}(\pi^-, \text{t})$ ,  $(\pi^-, \text{d})$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, \text{pd})$ ,  $(\pi^-, 2\text{d})$ ,  $(\pi^-, 2\text{t})$ ,  ${}^{10}\text{B}(\pi^-, \text{t}\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}{}^7\text{H})$ , E at rest; ${}^{4,5,6,7}\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^{4,5,6}\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- ${}^8\text{Li}$  2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, \text{p})$ ,  ${}^{12}\text{C}(\pi^-, \text{t})$ ,  $(\pi^-, \text{d})$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, \text{pd})$ ,  $(\pi^-, 2\text{d})$ ,  $(\pi^-, 2\text{t})$ ,  ${}^{10}\text{B}(\pi^-, \text{t}\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}{}^7\text{H})$ , E at rest; ${}^{4,5,6,7}\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^{4,5,6}\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, \text{X}){}^6\text{Li} / {}^7\text{Li} / {}^8\text{Li} / {}^7\text{Be} / {}^9\text{Be} / {}^{10}\text{Be} / {}^{10}\text{B} / {}^{11}\text{B}$ , E=51 MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ , E=51 MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ , E=24 MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- ${}^8\text{Be}$  2007FRZT NUCLEAR REACTIONS  ${}^{11}\text{B}(\text{p}, \alpha)$ , E = 1.2-2.74 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$  at resonances. REPT TUNL-XLVI,P72,France

KEYNUMBERS AND KEYWORDS

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**A=8 (continued)**

- 2008ARZU NUCLEAR REACTIONS  ${}^9\text{Be}(\gamma, n)$ ,  $E=1.55\text{-}5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E_n$ ,  $I_n$  at 36 different energies. Data to be analyzed. REPT TUNL-XLII,P118,Arnold
- 2008CH28 NUCLEAR REACTIONS H, C( ${}^{12}\text{Be}$ , X),  $E=50$  MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  ${}^6,7,9\text{Li}$ ,  ${}^8,9,10\text{Be}$ ,  ${}^{12,13}\text{B}$ ; deduced levels,  $J$ ,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2008LA18 NUCLEAR REACTIONS  ${}^2\text{H}({}^{11}\text{B}, n\alpha)$ ,  $({}^{10}\text{B}, p\alpha)$ ,  $E=27$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fragment spectra, cross sections.  ${}^{11}\text{B}(p, \alpha)$ ,  ${}^{10}\text{B}(n, \alpha)$ ; deduced S-factors. JOUR NIFBA 31 423
- 2008T016 NUCLEAR REACTIONS H, O( ${}^{12}\text{C}$ , X) ${}^8\text{Be}$  /  ${}^9\text{B}$ ,  $E=200\text{-}400$  MeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 067602
- 2009CH15 NUCLEAR REACTIONS  ${}^9\text{Be}(n, n')$ ,  $(n, 2n)$ ,  $E=5.9, 6.4$  MeV; measured  $\sigma(\theta, E)$ . Compared results to model calculations and evaluated databases. JOUR ANEND 36 668
- 2009C001 NUCLEAR REACTIONS  ${}^{12}\text{C}(p, p\alpha)$ ,  $E=101$  MeV; measured cross section and analyzing power. JOUR EULEE 85 22001
- 2009MA21 NUCLEAR REACTIONS  ${}^{12}\text{C}(\text{polarized } p, p\alpha){}^8\text{Be}$ ,  $E=100$  MeV; measured particle spectra, (particle)(particle)-coin,  $\sigma$ ,  $\sigma(\theta)$ , vector analyzing powers; deduced energy sharing cross sections with different optical potential model parameters and spectroscopic factors. Distorted-wave impulse approximation (DWIA) analysis. JOUR PRVCA 79 054612
- 2009PA05 NUCLEAR REACTIONS  ${}^7\text{Li}({}^7\text{Li}, {}^6\text{He})$ ,  $E=20, 25$  MeV; measured  $\sigma(\theta)$ . Compared results to model calculations. JOUR PRAMC 72 363
- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, X){}^6\text{Li}$  /  ${}^7\text{Li}$  /  ${}^8\text{Li}$  /  ${}^7\text{Be}$  /  ${}^9\text{Be}$  /  ${}^{10}\text{Be}$  /  ${}^{10}\text{B}$  /  ${}^{11}\text{B}$ ,  $E=51$  MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ ,  $E=51$  MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ ,  $E=24$  MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ . JOUR PRVCA 79 054609
- ${}^8\text{B}$  2009YA01 NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be}')$ ,  $E=53.8$  MeV; measured proton spectra,  $E\gamma$ ,  $I\gamma$ , (proton) $\gamma$ -coin,  $\sigma(E)$ ; deduced astrophysical S-factor.  ${}^8\text{B}$  deduced levels,  $J$ ,  $\pi$ , resonance parameters using R-matrix analysis. Comparison with data. Secondary radioactive beam. JOUR PYLBB 672 230
- 2009YAZY NUCLEAR REACTIONS  ${}^1\text{H}({}^7\text{Be}, {}^7\text{Be}')$ ,  $E=53.8$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function, elastic and inelastic  $\sigma(\theta)$ .  ${}^8\text{B}$ ; resonance parameters. REPT CNS-REP-81,Yamaguchi

**A=9**

- ${}^9\text{Li}$  2008CH28 NUCLEAR REACTIONS H, C( ${}^{12}\text{Be}$ , X),  $E=50$  MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  ${}^6,7,9\text{Li}$ ,  ${}^8,9,10\text{Be}$ ,  ${}^{12,13}\text{B}$ ; deduced levels,  $J$ ,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2009GE04 NUCLEAR REACTIONS  ${}^7\text{Li}(t, p)$ ,  $E=5.0\text{-}11.3$  MeV; measured  $\beta$ -delayed neutron yield, excitation function. JOUR BRSPE 73 156

A=9 (*continued*)

- 2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, p)$ ,  ${}^{12}\text{C}(\pi^-, t)$ ,  $(\pi^-, d)$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, pd)$ ,  $(\pi^-, 2d)$ ,  $(\pi^-, 2t)$ ,  ${}^{10}\text{B}(\pi^-, t\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}^7\text{H})$ , E at rest; ${}^4,5,6,7\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^4,5,6\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- ${}^9\text{Be}$  2008CH28 NUCLEAR REACTIONS H, C( ${}^{12}\text{Be}$ , X), E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  ${}^6,7,9\text{Li}$ ,  ${}^8,9,10\text{Be}$ ,  ${}^{12,13}\text{B}$ ; deduced levels, J,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2008DE30 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{110}\text{Pd}, {}^{110}\text{Pd}')$ , E=66 MeV / nucleon;  ${}^9\text{Be}({}^{114}\text{Pd}, {}^{114}\text{Pd}')$ , E=69 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  ${}^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ , B(E2).  ${}^{102,104,106,108,112,116}\text{Pd}$ ,  ${}^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  ${}^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2008ONZZ NUCLEAR REACTIONS  ${}^9\text{Be}({}^{18}\text{C}, {}^{18}\text{C}')$ , E=72, 79 MeV / nucleon;  ${}^9\text{Be}({}^{16}\text{C}, {}^{16}\text{C}')$ , E=40, 72, 79 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ , B(E2). RSM concept. REPT RIKEN 2007 Annual,P10,Ong
- 2009AG11 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths.  ${}^7\text{Li}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}$ ; deduced hypernucleus ground-state J,  $\pi$ . Comparison with other data. JOUR PYLBB 681 139
- 2009CH15 NUCLEAR REACTIONS  ${}^9\text{Be}(n, n')$ ,  $(n, 2n)$ , E=5.9, 6.4 MeV; measured  $\sigma(\theta, E)$ . Compared results to model calculations and evaluated databases. JOUR ANEND 36 668
- 2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, p)$ ,  ${}^{12}\text{C}(\pi^-, t)$ ,  $(\pi^-, d)$ ,  $(\pi^-, {}^3\text{He})$ ,  $(\pi^-, pd)$ ,  $(\pi^-, 2d)$ ,  $(\pi^-, 2t)$ ,  ${}^{10}\text{B}(\pi^-, t\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}^7\text{H})$ , E at rest; ${}^4,5,6,7\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^4,5,6\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558
- 2009K009 NUCLEAR REACTIONS  ${}^{11}\text{B}(d, p)$ ,  $(d, \alpha)$ , E=900-1200 keV; measured  $\sigma(\theta, E)$ . JOUR NIMBE 267 1740
- 2009MA16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{48}\text{Ca}, n{}^{47}\text{Ca})$ ,  $({}^{56}\text{Ti}, n{}^{55}\text{Ti})$ , E=450 MeV / nucleon; measured  $\sigma$ ,  $E\gamma$ ,  $I\gamma$ , (recoil) $\gamma$ -coin after Doppler correction, momentum distributions.  ${}^{47}\text{Ca}$ ,  ${}^{55}\text{Ti}$ ; deduced J,  $\pi$ , levels. Comparison with shell-model calculations. FRS with secondary beam and MINIBALL array. JOUR PYLBB 675 22
- 2009N002 NUCLEAR MOMENTS  ${}^{7,9,10,11}\text{Be}$ ; measured isotope shifts; deduced nuclear charge radii. JOUR PRLTA 102 062503
- 2009PIZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^7\text{Be}, {}^7\text{Be})$ , E=23.7 MeV; measured E(particle), I(particle),  $\theta$ (particle); deduced  $d\sigma$ , optical model parameters; calculated using optical model and coupled channels. CONF Brazil (Nuclear Physics 2008) Proc. P123,Pires
- 2009RI03 ATOMIC MASSES  ${}^9,10,11\text{Be}$  [from Rb, Sr, Ta(p, X), E=500 MeV]; measured masses using the TITAN Penning trap mass spectrometer at TRIUMF.  ${}^{11}\text{Be}$ ; deduced single-neutron separation energy. Comparison with AME2003. JOUR PYLBB 675 170

KEYNUMBERS AND KEYWORDS

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**A=9 (continued)**

- 2009R010 NUCLEAR REACTIONS  ${}^7\text{Li}({}^{10}\text{B}, \text{X}){}^6\text{Li} / {}^7\text{Li} / {}^8\text{Li} / {}^7\text{Be} / {}^9\text{Be} / {}^{10}\text{Be} / {}^{10}\text{B} / {}^{11}\text{B}$ , E=51 MeV; measured particle spectra.  ${}^7\text{Li}({}^{10}\text{B}, {}^9\text{Be})$ , E=51 MeV;  ${}^{10}\text{Be}({}^7\text{Li}, {}^9\text{Be})$ , E=24 MeV; measured  ${}^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  ${}^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- ${}^9\text{B}$  2008T016 NUCLEAR REACTIONS H, O( ${}^{12}\text{C}$ , X) ${}^8\text{Be} / {}^9\text{B}$ , E=200-400 MeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 067602
- 2009GA09 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{46}\text{Cl}, {}^{46}\text{S})$ , ( ${}^{48}\text{K}$ ,  ${}^{48}\text{Ar}$ ), E  $\geq$  85 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , inclusive  $\sigma$ , yields, longitudinal momentum distributions;  ${}^{46}\text{S}$ ,  ${}^{48}\text{Ar}$ ; deduced level energies. Comparisons with Large-scale shell-model calculations using SDPF-NR effective interaction. JOUR PRLTA 102 182502
- 2009TR03 NUCLEAR REACTIONS  ${}^{66}\text{Zn}({}^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  ${}^{66}\text{Zn}({}^{19}\text{F}, \text{X}){}^9\text{B} / {}^{10}\text{B} / {}^{11}\text{B} / {}^{12}\text{C} / {}^{13}\text{C} / {}^{14}\text{C} / {}^{13}\text{N} / {}^{14}\text{N} / {}^{15}\text{N} / {}^{16}\text{O} / {}^{17}\text{O} / {}^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  ${}^{89}\text{Y}({}^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604

**A=10**

- ${}^{10}\text{He}$  2009CH29 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, \text{p})$ ,  ${}^3\text{H}({}^8\text{He}, \text{p})$ , E=25 MeV; measured mass spectrum; deduced J,  $\pi$ , level energies. JOUR APOBB 40 899
- 2009G001 NUCLEAR REACTIONS  ${}^3\text{H}({}^6\text{He}, \text{p})$ , E=25 MeV / nucleon;  ${}^3\text{H}({}^8\text{He}, \text{p})$ , E=27.4 MeV / nucleon; measured fragment, proton energies, (fragment)(proton)-coin and missing mass spectra; deduced  $\sigma$ .  ${}^6,8\text{He}$  deduced ground state energies, E1 strength distribution. Comparison with other data and calculations. Secondary radioactive beam. JOUR PYLBB 672 22
- ${}^{10}\text{Be}$  2008CH28 NUCLEAR REACTIONS H, C( ${}^{12}\text{Be}$ , X), E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  ${}^{6,7,9}\text{Li}$ ,  ${}^{8,9,10}\text{Be}$ ,  ${}^{12,13}\text{B}$ ; deduced levels, J,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2008MAZP NUCLEAR REACTIONS  ${}^9\text{Be}({}^{48}\text{Ca}, {}^{47}\text{Ca})$ ,  ${}^9\text{Be}({}^{56}\text{Ti}, {}^{55}\text{Ti})$ , E=high; measured E $\gamma$ , I $\gamma$ , E( ${}^{47}\text{Ca}$ ), E( ${}^{55}\text{Ti}$ ); deduced momentum distribution. REPT MLL 2007 Annual,P6,Maierbeck
- 2009GU17 NUCLEAR REACTIONS  ${}^9\text{Be}(\pi^-, \text{p})$ ,  ${}^{12}\text{C}(\pi^-, \text{t})$ , ( $\pi^-, \text{d}$ ), ( $\pi^-, {}^3\text{He}$ ), ( $\pi^-, \text{pd}$ ), ( $\pi^-, 2\text{d}$ ), ( $\pi^-, 2\text{t}$ ),  ${}^{10}\text{B}(\pi^-, \text{t}\alpha)$ ,  ${}^{11}\text{B}(\pi^-, {}^3\text{He}{}^7\text{H})$ , E at rest; ${}^{4,5,6,7}\text{H}$ ; measured missing-mass spectra; deduced level structures in  ${}^{4,5,6}\text{H}$ , evidence for  ${}^7\text{H}$ . JOUR PPNUE 40 558



KEYNUMBERS AND KEYWORDS

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A=10 (*continued*)

- 2009HA01 NUCLEAR REACTIONS  $^9\text{Be}(^{16}\text{O}, ^{14}\text{O})$ , E=234 MeV; measured  $^{14}\text{O}$  spectra,  $^{10}\text{Be}$ - $^{14}\text{O}$  coin, energies and angles of  $^{10}\text{Be}$  fragments, branching ratios, widths, neutron energies, neutron decay of excited states of  $^{11}\text{Be}$  to  $^{10}\text{Be}$ .  $^{10,11}\text{Be}$ ; deduced levels, J,  $\pi$ . R-matrix formalism. JOUR PRVCA 79 014302
- 2009MA54 RADIOACTIVITY  $^{11}\text{Li}(\beta^-)$ , ( $\beta^-$ -n) [from Ta(p, X), E=500 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives by line-shape method using Spi array.  $^{10,11}\text{Be}$ ; deduced levels, J,  $\pi$ , branching ratios, B(E1), delayed neutron emission probabilities. JOUR PRVCA 80 034318
- 2009MAZX NUCLEAR REACTIONS  $^9\text{Be}(^{50}\text{Ca}, ^{49}\text{Ca})$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $\sigma$ , momentum distribution, L, J,  $\pi$  of so-far unobserved state in  $^{49}\text{Ca}$ ; calculated momentum distribution. REPT MLL 2008 Annual,P5,Maierbeck
- 2009MC02 NUCLEAR REACTIONS  $^7\text{Li}(^7\text{Li}, \alpha)^{10}\text{Be}$ , E=8, 10 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced lifetime, B(E2) values for  $^{10}\text{Be}$ . DSAM technique, comparison with ab initio calculations. JOUR PRLTA 103 192501
- 2009N002 NUCLEAR MOMENTS  $^{7,9,10,11}\text{Be}$ ; measured isotope shifts; deduced nuclear charge radii. JOUR PRLTA 102 062503
- 2009RI03 ATOMIC MASSES  $^{9,10,11}\text{Be}$  [from Rb, Sr, Ta(p, X), E=500 MeV]; measured masses using the TITAN Penning trap mass spectrometer at TRIUMF.  $^{11}\text{Be}$ ; deduced single-neutron separation energy. Comparison with AME2003. JOUR PYLBB 675 170
- 2009RI04 NUCLEAR REACTIONS  $^9\text{Be}(^{45}\text{Cl}, ^{44}\text{Cl})$ , E=99.6 MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma$ , (particle) $\gamma$ -coin and parallel momentum distributions.  $^{44}\text{Cl}$ ; deduced levels, J,  $\pi$ , half-life, cross section. One-neutron knockout reaction. Comparison with shell model calculations. JOUR PRVCA 79 051303
- 2009R010 NUCLEAR REACTIONS  $^7\text{Li}(^{10}\text{B}, \text{X})^6\text{Li}$  /  $^7\text{Li}$  /  $^8\text{Li}$  /  $^7\text{Be}$  /  $^9\text{Be}$  /  $^{10}\text{Be}$  /  $^{10}\text{B}$  /  $^{11}\text{B}$ , E=51 MeV; measured particle spectra.  $^7\text{Li}(^{10}\text{B}, ^9\text{Be})$ , E=51 MeV;  $^{10}\text{Be}(^7\text{Li}, ^9\text{Be})$ , E=24 MeV; measured  $^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  $^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- 2009VAZY RADIOACTIVITY  $^{10}\text{Be}$ ,  $^{36}\text{Cl}$ ,  $^{60}\text{Fe}(\beta^-)$ ;  $^{26}\text{Al}$ ,  $^{41}\text{Ca}$ ,  $^{59}\text{Ni}$ ,  $^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela
- $^{10}\text{B}$  2008UR03 NUCLEAR REACTIONS  $^{11}\text{B}(^3\text{He}, \alpha)$ , E=15 MeV; measured reaction products; deduced Q-value spectra, isobaric analogue states. JOUR IMPEE 17 2345
- 2009BA06 RADIOACTIVITY  $^{10}\text{C}(\beta^+)$  [from  $^{10}\text{B}(p, n)$ , E=5.2 MeV]; measured  $\beta$  spectra, half-life; deduced ft value. JOUR PRVCA 79 024311
- 2009CH38 NUCLEAR REACTIONS Be, C( $^{10}\text{C}$ , X), E=10.7 MeV / nucleon; measured fragment spectra,  $\sigma(\theta)$ , proton-proton angular correlations, widths,  $\sigma$ , energy distributions of diproton, sequential two-proton,  $2p+2\alpha$ ,  $p+3\alpha$  and other cluster particle-decay modes from ground and excited resonant states.  $^{10}\text{B}$ ,  $^{10}\text{C}$ ,  $^{13}\text{N}$ ; deduced levels, J,  $\pi$ , resonances, particle decay modes. Resonance-decay spectroscopic techniques. Monte Carlo analysis of energy distributions. Comparison with two-proton decay modes from  $^6\text{Be}$  and  $^{45}\text{Fe}$ . JOUR PRVCA 80 024306

**A=10 (continued)**

- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC}), (\beta^+)$ [from  $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft.  $^{10}\text{C}, ^{14}\text{O}, ^{22}\text{Mg}, ^{26m}\text{Al}, ^{26}\text{Si}, ^{34}\text{Cl}, ^{34}\text{Ar}, ^{38m}\text{K}, ^{42}\text{Sc}, ^{46}\text{V}, ^{50}\text{Mn}, ^{54}\text{Co}, ^{62}\text{Ga}, ^{74}\text{Rb}(\text{EC}), (\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009R010 NUCLEAR REACTIONS  $^7\text{Li}(^{10}\text{B}, \text{X})^6\text{Li} / ^7\text{Li} / ^8\text{Li} / ^7\text{Be} / ^9\text{Be} / ^{10}\text{Be} / ^{10}\text{B} / ^{11}\text{B}$ , E=51 MeV; measured particle spectra.  $^7\text{Li}(^{10}\text{B}, ^9\text{Be})$ , E=51 MeV;  $^{10}\text{Be}(^7\text{Li}, ^9\text{Be})$ , E=24 MeV; measured  $^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  $^8\text{Be}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 054609
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- 2009VAZY RADIOACTIVITY  $^{10}\text{Be}, ^{36}\text{Cl}, ^{60}\text{Fe}(\beta^-); ^{26}\text{Al}, ^{41}\text{Ca}, ^{59}\text{Ni}, ^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela
- $^{10}\text{C}$  2008SHZV NUCLEAR REACTIONS  $^9\text{B}(^{18}\text{O}, ^{17}\text{N})$ , E not given; measured I $\beta$ ,  $\theta(\beta)$ ,  $\beta$  decay asymmetry from polarized  $^{17}\text{N}$  using  $\beta$ -NMR technique. REPT RIKEN 2007 Annual,P23,Shimada
- 2009BA06 RADIOACTIVITY  $^{10}\text{C}(\beta^+)$  [from  $^{10}\text{B}(\text{p}, \text{n})$ , E=5.2 MeV]; measured  $\beta$  spectra, half-life; deduced ft value. JOUR PRVCA 79 024311
- 2009CH38 NUCLEAR REACTIONS  $\text{Be}, \text{C}(^{10}\text{C}, \text{X})$ , E=10.7 MeV / nucleon; measured fragment spectra,  $\sigma(\theta)$ , proton-proton angular correlations, widths,  $\sigma$ , energy distributions of diproton, sequential two-proton,  $2\text{p}+2\alpha$ ,  $\text{p}+3\alpha$  and other cluster particle-decay modes from ground and excited resonant states.  $^{10}\text{B}, ^{10}\text{C}, ^{13}\text{N}$ ; deduced levels, J,  $\pi$ , resonances, particle decay modes. Resonance-decay spectroscopic techniques. Monte Carlo analysis of energy distributions. Comparison with two-proton decay modes from  $^6\text{Be}$  and  $^{45}\text{Fe}$ . JOUR PRVCA 80 024306
- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC}), (\beta^+)$ [from  $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft.  $^{10}\text{C}, ^{14}\text{O}, ^{22}\text{Mg}, ^{26m}\text{Al}, ^{26}\text{Si}, ^{34}\text{Cl}, ^{34}\text{Ar}, ^{38m}\text{K}, ^{42}\text{Sc}, ^{46}\text{V}, ^{50}\text{Mn}, ^{54}\text{Co}, ^{62}\text{Ga}, ^{74}\text{Rb}(\text{EC}), (\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009GR07 NUCLEAR REACTIONS  $^1\text{H}(^{10}\text{B}, \text{n})$ , E not given;  $\text{Ni}(^{58}\text{Ni}, \text{X})^{45}\text{Fe}$ , E=161 MeV / nucleon; measured  $E_{\text{p}}, I_{\text{p}}, E_{\alpha}, I_{\alpha}$ , product energy and angular correlation distributions in a kinematically complete experiment. Comparison with three-body cluster model. JOUR PYLBB 677 30
- 2009GR11 NUCLEAR REACTIONS  $^1\text{H}(^{10}\text{B}, \text{n})^{10}\text{C}$ , E=15 MeV / nucleon; measured  $E_{\text{p}}, I_{\text{p}}, E_{\alpha}, I_{\alpha}$ , energy and angular correlation distributions in a kinematically complete experiment. Comparison with three-body cluster model. JOUR PRVCA 80 034602

## A=11

- <sup>11</sup>Li      2007NIZW      NUCLEAR REACTIONS  $^2\text{H}(^8\text{He}, t)$ ,  $^2\text{H}(^8\text{He}, \alpha)$ ,  $^2\text{H}(^8\text{He}, ^6\text{Li})$ ,  $^2\text{H}(^8\text{He}, d\alpha)$ ,  $^2\text{H}(^8\text{He}, t)$ ,  $E \approx 42$  MeV / nucleon;  $^2\text{H}(^{12}\text{Be}, ^3\text{He})$ ,  $^2\text{H}(^{12}\text{Be}, ^6\text{Li})$ ,  $^2\text{H}(^{12}\text{Be}, d\alpha)$ ,  $^2\text{H}(^{12}\text{Be}, t)$ ,  $E \approx 71$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$ , particle-particle-coin. REPT RIKEN 2006 Annual,P21,Nikolskii
- 2008NAZY      NUCLEAR REACTIONS  $\text{Pb}(^{11}\text{Li}, 2n^9\text{Li})$ ,  $E=70$  MeV / nucleon; measured neutron-neutron correlations. <sup>11</sup>Li; deduced  $B(E1)$  distribution. CONF Cappadocia (Nuclear Physics and Astrophysics),P88,Nakamura
- 2009BAZT      RADIOACTIVITY  $^{18}\text{Ne}(\beta^+)$ ,  $^{11}\text{Li}(\beta^-)$ ,  $A=160(\beta^+)$  [from TRIUMF-ISAC];  $^{18}\text{F}(\beta^+)$  [from  $^{18}\text{Ne}$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta$ - $\gamma$ -coin.; deduced  $J$ ,  $\pi$ , transition strengths. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P19,Ball
- 2009GA24      ATOMIC MASSES <sup>11</sup>Li; measured mass and two-neutron separation energy. <sup>11,12</sup>Be; measured mass. Mistral spectrometer at Isolde. Comparison with various models and other data. JOUR NUPAB 826 1
- 2009MA31      RADIOACTIVITY  $^{11}\text{Li}(\beta^-)$  [from  $\text{Ta}(p, X)$ ,  $E=1.4$  GeV]; measured  $E\beta$ ,  $I\beta$ ,  $E\alpha$ ,  $I\alpha$ , (charged-particle)(charged-particle)-coin in a kinematically complete experiment; deduced  $B(GT)$ . <sup>11</sup>Be; deduced level energy,  $J$ ,  $\pi$  using Monte Carlo. Comparison with shell model calculations. JOUR PYLBB 677 255
- 2009MA54      RADIOACTIVITY  $^{11}\text{Li}(\beta^-)$ ,  $(\beta^-n)$  [from  $\text{Ta}(p, X)$ ,  $E=500$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives by line-shape method using Spi array. <sup>10,11</sup>Be; deduced levels,  $J$ ,  $\pi$ , branching ratios,  $B(E1)$ , delayed neutron emission probabilities. JOUR PRVCA 80 034318
- 2009R004      ATOMIC MASSES <sup>11</sup>Li; deduced mass and  $S(2n)$  from measured  $Q$ -value for  $^1\text{H}(^{11}\text{Li}, ^9\text{Li})$  reaction. JOUR PRVCA 79 031603
- <sup>11</sup>Be      2007NIZW      NUCLEAR REACTIONS  $^2\text{H}(^8\text{He}, t)$ ,  $^2\text{H}(^8\text{He}, \alpha)$ ,  $^2\text{H}(^8\text{He}, ^6\text{Li})$ ,  $^2\text{H}(^8\text{He}, d\alpha)$ ,  $^2\text{H}(^8\text{He}, t)$ ,  $E \approx 42$  MeV / nucleon;  $^2\text{H}(^{12}\text{Be}, ^3\text{He})$ ,  $^2\text{H}(^{12}\text{Be}, ^6\text{Li})$ ,  $^2\text{H}(^{12}\text{Be}, d\alpha)$ ,  $^2\text{H}(^{12}\text{Be}, t)$ ,  $E \approx 71$  MeV / nucleon; measured  $E(\text{particle})$ ,  $I(\text{particle})$ , particle-particle-coin. REPT RIKEN 2006 Annual,P21,Nikolskii
- 2008CAZX      NUCLEAR REACTIONS  $^{11}\text{B}$ ,  $^{15}\text{N}$ ,  $^{19}\text{F}(^7\text{Li}, ^7\text{Be})$ ,  $E \sim 8$  MeV / nucleon; measured single-particle states, excitation energy spectra. CONF Cappadocia (Nuclear Physics and Astrophysics),P249,Cavallaro
- 2008NIZZ      NUCLEAR REACTIONS  $^2\text{H}(^8\text{He}, t)$ ,  $E=42$  MeV / nucleon;  $^2\text{H}(^{12}\text{Be}, t)$ ,  $E=71$  MeV / nucleon; measured  $E_t$ ,  $I_t$ , particle-particle-coin.; deduced  $J$ ,  $\pi$  of some levels. REPT RIKEN 2007 Annual,P14,Nikolskii
- 2009BAZT      RADIOACTIVITY  $^{18}\text{Ne}(\beta^+)$ ,  $^{11}\text{Li}(\beta^-)$ ,  $A=160(\beta^+)$  [from TRIUMF-ISAC];  $^{18}\text{F}(\beta^+)$  [from  $^{18}\text{Ne}$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta$ - $\gamma$ -coin.; deduced  $J$ ,  $\pi$ , transition strengths. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P19,Ball
- 2009GA24      ATOMIC MASSES <sup>11</sup>Li; measured mass and two-neutron separation energy. <sup>11,12</sup>Be; measured mass. Mistral spectrometer at Isolde. Comparison with various models and other data. JOUR NUPAB 826 1

A=11 (*continued*)

- 2009HA01 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{16}\text{O}, {}^{14}\text{O})$ ,  $E=234$  MeV; measured  ${}^{14}\text{O}$  spectra,  ${}^{10}\text{Be}$ - ${}^{14}\text{O}$  coin, energies and angles of  ${}^{10}\text{Be}$  fragments, branching ratios, widths, neutron energies, neutron decay of excited states of  ${}^{11}\text{Be}$  to  ${}^{10}\text{Be}$ .  ${}^{10,11}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ . R-matrix formalism. JOUR PRVCA 79 014302
- 2009MA31 RADIOACTIVITY  ${}^{11}\text{Li}(\beta^-)$  [from Ta(p, X),  $E=1.4$  GeV]; measured  $E\beta$ ,  $I\beta$ ,  $E\alpha$ ,  $I\alpha$ , (charged-particle)(charged-particle)-coin in a kinematically complete experiment; deduced B(GT).  ${}^{11}\text{Be}$ ; deduced level energy,  $J$ ,  $\pi$  using Monte Carlo. Comparison with shell model calculations. JOUR PYLBB 677 255
- 2009MA54 RADIOACTIVITY  ${}^{11}\text{Li}(\beta^-)$ ,  $(\beta^-n)$  [from Ta(p, X),  $E=500$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-lives by line-shape method using Spi array.  ${}^{10,11}\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ , branching ratios, B(E1), delayed neutron emission probabilities. JOUR PRVCA 80 034318
- 2009N002 NUCLEAR MOMENTS  ${}^{7,9,10,11}\text{Be}$ ; measured isotope shifts; deduced nuclear charge radii. JOUR PRLTA 102 062503
- 2009RI03 ATOMIC MASSES  ${}^{9,10,11}\text{Be}$  [from Rb, Sr, Ta(p, X),  $E=500$  MeV]; measured masses using the TITAN Penning trap mass spectrometer at TRIUMF.  ${}^{11}\text{Be}$ ; deduced single-neutron separation energy. Comparison with AME2003. JOUR PYLBB 675 170
- 2009WAZY RADIOACTIVITY  ${}^{7,11}\text{Be}$ ; measured laser-microwave spectra; deduced hyperfine splittings, nuclear magnetic moment, magnetization radii. Ion trap at SLOWRI facility. CONF Tokai (Perspective in Nuc Phys), Proc.P109,Wade
- ${}^{11}\text{B}$  2008KA44 NUCLEAR REACTIONS  ${}^{11}\text{B}$ ,  ${}^{13}\text{C}(\alpha, \alpha)$ ,  $E=388$  MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$ , B(E0). Comparison with DWBA calculations. JOUR IMPEE 17 2071
- 2008ME15 NUCLEAR REACTIONS  ${}^{12}\text{C}$ ,  ${}^{40}\text{Ca}$ ,  ${}^{93}\text{Nb}$ , Pb(polarized  $\gamma$ ,  $p\pi^0$ ),  $E=0.6$ - $2.2$  GeV bremsstrahlung; measured invariant- and missing-mass spectra,  $\eta$ -meson production  $\sigma$ ,  $\sigma(\theta)$ . Comparison with BUU transport model and other data. JOUR ZAANE 38 195
- 2008RUZX NUCLEAR REACTIONS  ${}^{11}\text{B}(\gamma, \gamma')$ ,  $E$  not given; measured  $I\gamma$ ,  $E\gamma$  at different angles using HI $\gamma$ S facility; deduced asymmetry,  $\delta$  for transitions at 4.444, 5.019 and 8.916 MeV. REPT TUNL-XLII,P114,Rusev
- 2009AG11 NUCLEAR REACTIONS  ${}^{6,7}\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ ,  $E$  at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths.  ${}^7\text{Li}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}$ ; deduced hypernucleus ground-state  $J$ ,  $\pi$ . Comparison with other data. JOUR PYLBB 681 139
- 2009BA42 NUCLEAR REACTIONS  ${}^{12}\text{C}({}^8\text{Li}, {}^8\text{Li})$ ,  $({}^8\text{Li}, {}^9\text{Be}){}^{11}\text{B}$ ,  $E=23.9$  MeV; measured particle spectra,  $\sigma$ ,  $\sigma(\theta)$ ; deduced spectroscopic factors. Optical-model analysis with Woods-Saxon and double-folding Sao Paulo potential. Coupled-channel analysis for breakup and inelastic channels. Comparison of spectroscopic factors with shell-model calculations and previous experimental data. JOUR PRVCA 80 034617
- 2009GA19 NUCLEAR REACTIONS  ${}^{13}\text{C}(\text{d}, \alpha)$ ,  $E=15.3$  MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$ , formation of excited states in  ${}^{11}\text{B}$ . Comparison with calculations, optical potential parameters. JOUR BRSPE 73 806

KEYNUMBERS AND KEYWORDS

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**A=11 (continued)**

- 2009ISZZ NUCLEAR REACTIONS  $^8\text{Li}(\alpha, n)$ ,  $E(\text{cm})=0.7\text{-}2.6$  MeV;  $^8\text{Li}(d, t)$ ,  $E=0.3\text{-}1.2$  MeV / nucleon;  $^{12}\text{B}(\alpha, n)$ ,  $E(\text{cm})=1.1\text{-}3.6$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $\sigma$ , reaction rates. Compared to other data and predictions, discussed reaction paths of r-process. CONF Tokai (Perspective in Nuc Phys), Proc.P177,Ishiyama
- 2009LI27 NUCLEAR REACTIONS  $^{12}\text{C}(^6\text{He}, ^7\text{Li})$ ,  $E = 34.6$  MeV; measured  $\sigma(\theta)$ . comparison with DWBA calculation. JOUR CPLEE 26 072401
- 2009R010 NUCLEAR REACTIONS  $^7\text{Li}(^{10}\text{B}, X)^6\text{Li} / ^7\text{Li} / ^8\text{Li} / ^7\text{Be} / ^9\text{Be} / ^{10}\text{Be} / ^{10}\text{B} / ^{11}\text{B}$ ,  $E=51$  MeV; measured particle spectra.  $^7\text{Li}(^{10}\text{B}, ^9\text{Be})$ ,  $E=51$  MeV;  $^{10}\text{Be}(^7\text{Li}, ^9\text{Be})$ ,  $E=24$  MeV; measured  $^9\text{Be}$  spectra,  $\sigma(\theta)$ , analysis by coupled-reaction-channels method using optical potentials of Woods-Saxon type.  $^8\text{Be}$ ; deduced levels,  $J$ ,  $\pi$ . JOUR PRVCA 79 054609
- 2009RU04 NUCLEAR REACTIONS  $^{11}\text{B}(\text{polarized } \gamma, \gamma')$ ,  $E=1\text{-}100$  MeV; measured  $E\gamma$ ,  $I\gamma$ , azimuthal asymmetries; deduced levels, mixing ratios. JOUR PRVCA 79 047601
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, X)\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ ,  $E=65, 85, 95, 112$  MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, X)^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ ,  $E=61, 82, 92$  MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, X)$  reaction. JOUR PRVCA 79 064604
- $^{11}\text{C}$  2007STZR NUCLEAR REACTIONS  $^{10}\text{B}(d, n)$ ,  $E < 160$  keV; measured  $\text{In}$ ; deduced  $\sigma$ , s-factor. REPT TUNL-XLVI,P70,Stave

**A=12**

- $^{12}\text{Be}$  2008B037 NUCLEAR REACTIONS  $^{14}\text{C}(^{12}\text{C}, ^{14}\text{O})$ ,  $^{10}\text{Be}(^{14}\text{N}, ^{12}\text{N})$ ,  $^9\text{Be}(^{12}\text{C}, ^9\text{C})$ ,  $(^{15}\text{N}, ^{12}\text{N})$ ,  $E=231, 216, 231, 240$  MeV; measured reaction products; deduced  $^{12}\text{Be}$  energy levels,  $J$ ,  $\pi$ . JOUR IMPEE 17 2067
- 2009GA24 ATOMIC MASSES  $^{11}\text{Li}$ ; measured mass and two-neutron separation energy.  $^{11,12}\text{Be}$ ; measured mass. Mistral spectrometer at Isolde. Comparison with various models and other data. JOUR NUPAB 826 1
- 2009IM01 NUCLEAR REACTIONS  $^{197}\text{Au}(^{12}\text{Be}, ^{12}\text{Be}')$ ,  $E=42.9$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin.  $^{12}\text{Be}$  deduced levels,  $T_{1/2}$ ,  $B(E2)$ , deformation length. Doppler shift attenuation method. JOUR PYLBB 673 179
- 2009IMZY RADIOACTIVITY  $^{12}\text{Be}$ ; measured  $E\gamma$ ,  $I\gamma$  using Doppler attenuation; deduced proton matrix element, neutron quadrupole matrix element. Indication of a loss of magicity at  $N=8$ . CONF Tokai (Perspective in Nuc Phys), Proc.P265,Imai
- 2009IMZZ NUCLEAR REACTIONS  $\text{Au}(^{12}\text{Be}, ^{12}\text{Be}')$ ,  $E=43$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , Half-life of  $2^+$  state using the DSA method.  $^{12}\text{Be}$ ; deduced  $B(E2)$ . REPT RIKEN-NC-NP-31,Imai

A=12 (*continued*)

- <sup>12</sup>B      2008CH28      NUCLEAR REACTIONS H, C(<sup>12</sup>Be, X), E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions. <sup>6,7,9</sup>Li, <sup>8,9,10</sup>Be, <sup>12,13</sup>B; deduced levels, J,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2008HY03      NUCLEAR REACTIONS <sup>1</sup>H(<sup>12</sup>C, X)<sup>12</sup>N, <sup>2</sup>H(<sup>11</sup>B, X)<sup>12</sup>B, E not given; measured E $\alpha$ , I $\alpha$ ; deduced branching ratios, Gamow-Teller transition strengths. JOUR IMPEE 17 2182
- 2009DI06      RADIOACTIVITY <sup>12</sup>N( $\beta^+$ )[from <sup>12</sup>C(p, n), E=28 MeV], <sup>12</sup>B( $\beta^-$ )[from <sup>11</sup>B(d, p), E=10 MeV]; measured E $\alpha$ , E $\gamma$ ,  $\alpha\alpha$ -coin. <sup>12</sup>C; deduced levels, J,  $\pi$ , triple- $\alpha$  continuum states and their decay modes. R-matrix analysis. JOUR PRVCA 80 034316
- 2009HY01      NUCLEAR REACTIONS <sup>1</sup>H(<sup>12</sup>C, n), <sup>2</sup>H(<sup>11</sup>B, p), <sup>12</sup>C(p, n), <sup>11</sup>B(d, p), E not given; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ ,  $\gamma\alpha$ -coin,  $\alpha\alpha$ -coin, decay spectra; deduced branching ratio, log ft, B(GT) to various <sup>12</sup>C states. Comparison with no-core shell model calculations. JOUR PYLBB 678 459
- 2009HY01      RADIOACTIVITY <sup>12</sup>B( $\beta^-$ ), <sup>12</sup>N( $\beta^+$ ); deduced branching ratio, log ft, B(GT) to various <sup>12</sup>C states. Comparison with no-core shell model calculations. JOUR PYLBB 678 459
- 2009HY02      RADIOACTIVITY <sup>12</sup>N( $\beta^+$ )[from <sup>12</sup>C(p, n), E=28 MeV], <sup>12</sup>B( $\beta^-$ )[from <sup>11</sup>B(d, p), E=10 MeV]; <sup>20</sup>Na( $\beta^+$ )[from <sup>24</sup>Mg(p, n $\alpha$ ), E not given]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ , E $\beta$ ,  $\beta\gamma^-$ ,  $\beta\alpha^-$ ,  $\alpha\alpha$ -coin. <sup>12</sup>C, <sup>20</sup>Ne; deduced levels,  $\beta$  feedings, and logft. Triple- $\alpha$  method and R-matrix analysis. IGISOL-JYFL facility. JOUR PRVCA 80 044304
- 2009K009      NUCLEAR REACTIONS <sup>11</sup>B(d, p), (d,  $\alpha$ ), E=900-1200 keV; measured  $\sigma(\theta, E)$ . JOUR NIMBE 267 1740
- 2009LE09      NUCLEAR REACTIONS <sup>12</sup>C, <sup>16</sup>O( $\nu, \pi^0$ ), <sup>12</sup>C( $\nu, \pi^+$ ), E=0.5-2.0 GeV; measured pion production as a function of kinetic energy, single  $\pi^+$  cross sections for charged current. Giessen Boltzmann-Uehling-Uhlenbeck model for neutrino induced reactions to charged current and neutral current pion production. JOUR PRVCA 79 038501
- <sup>12</sup>C      2008GAZV      NUCLEAR REACTIONS <sup>16</sup>O( $\gamma, \alpha$ ), E=9.55 MeV; measured E $\alpha$ , I $\alpha$  using O-TPC detector at HI $\gamma$ S. REPT TUNL-XLII,P116,Gai
- 2008GR22      NUCLEAR REACTIONS <sup>12</sup>C, <sup>48</sup>Ti, <sup>58,64</sup>Ni(d, d'), E=37 MeV; measured Ed, Id; deduced  $\sigma(E, \theta)$ , excitation of electric giant resonances. JOUR PANUE 71 1711
- 2009AD08      NUCLEAR REACTIONS <sup>12</sup>C(<sup>18</sup>O,  $\alpha$ <sup>14</sup>C), E=94.5 MeV; measured reaction fragments, excitation energy spectra, angular correlation spectra, sequential breakup  $\sigma$ . Comparison with CDCC-FRESCO calculations. JOUR IMPEE 18 1917
- 2009AG11      NUCLEAR REACTIONS <sup>6,7</sup>Li, <sup>9</sup>Be, <sup>12</sup>C, <sup>16</sup>O(K<sup>-</sup>,  $\pi^-$ ), E at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths. <sup>7</sup>Li, <sup>11</sup>B, <sup>15</sup>N; deduced hypernucleus ground-state J,  $\pi$ . Comparison with other data. JOUR PYLBB 681 139

A=12 (*continued*)

- 2009AH01 NUCLEAR REACTIONS  $^{12}\text{C}(^{134}\text{Xe}, ^{134}\text{Xe}')$ , E=435 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using DSA technique and the Gammasphere array.  $^{134}\text{Xe}$ ; deduced levels, J,  $\pi$ ,  $\delta$ , B(E2), B(M1), related properties. Systematics of N=80, 82 isotones discussed. JOUR PYLBB 679 19
- 2009AS01 NUCLEAR REACTIONS  $^4\text{He}(^{12}\text{C}, \alpha)$ , E=46, 52, 56, 63 MeV; measured  $E\alpha$ ,  $I\alpha$ , resonant scattering cross sections.  $^{16}\text{O}$ ; deduced resonance parameters. JOUR JPGPE 36 055105
- 2009BA42 NUCLEAR REACTIONS  $^{12}\text{C}(^8\text{Li}, ^8\text{Li})$ , ( $^8\text{Li}, ^9\text{Be}$ ) $^{11}\text{B}$ , E=23.9 MeV; measured particle spectra,  $\sigma$ ,  $\sigma(\theta)$ ; deduced spectroscopic factors. Optical-model analysis with Woods-Saxon and double-folding Sao Paulo potential. Coupled-channel analysis for breakup and inelastic channels. Comparison of spectroscopic factors with shell-model calculations and previous experimental data. JOUR PRVCA 80 034617
- 2009DI06 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ [from  $^{12}\text{C}(p, n)$ , E=28 MeV],  $^{12}\text{B}(\beta^-)$ [from  $^{11}\text{B}(d, p)$ , E=10 MeV]; measured  $E\alpha$ ,  $E\gamma$ ,  $\alpha\alpha\alpha$ -coin.  $^{12}\text{C}$ ; deduced levels, J,  $\pi$ , triple- $\alpha$  continuum states and their decay modes. R-matrix analysis. JOUR PRVCA 80 034316
- 2009FA07 NUCLEAR REACTIONS  $^{12}\text{C}(^{16}\text{C}, ^{16}\text{C})$ , E=47.5 MeV / nucleon; measured energy and angular distributions of reaction products; deduced  $\sigma(\theta)$ , optical potential parameters. Coupled-channels calculations. JOUR CPLEE 26 082501
- 2009FR07 NUCLEAR REACTIONS  $^{12}\text{C}(p, p')$ , E=66 MeV;  $^{13}\text{C}(p, p')$ , E=200 MeV; measured  $E_p$  and  $\sigma(\theta)$ .  $^{12}\text{C}$ ; deduced levels, J,  $\pi$ , 2+ excitation of the Hoyle state in  $^{12}\text{C}$ . Coupled-channel (CCRC) analysis. Implications for the  $^8\text{Be}+^4\text{He}$  reaction rate in stellar environments discussed. JOUR PRVCA 80 041303
- 2009HY01 RADIOACTIVITY  $^{12}\text{B}(\beta^-)$ ,  $^{12}\text{N}(\beta^+)$ ; deduced branching ratio, log ft, B(GT) to various  $^{12}\text{C}$  states. Comparison with no-core shell model calculations. JOUR PYLBB 678 459
- 2009HY02 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ [from  $^{12}\text{C}(p, n)$ , E=28 MeV],  $^{12}\text{B}(\beta^-)$ [from  $^{11}\text{B}(d, p)$ , E=10 MeV];  $^{20}\text{Na}(\beta^+)$ [from  $^{24}\text{Mg}(p, n\alpha)$ , E not given]; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $\beta\gamma^-$ ,  $\beta\alpha^-$ ,  $\alpha\alpha\alpha$ -coin.  $^{12}\text{C}$ ,  $^{20}\text{Ne}$ ; deduced levels,  $\beta$  feedings, and logft. Triple- $\alpha$  method and R-matrix analysis. IGISOL-JYFL facility. JOUR PRVCA 80 044304
- 2009KI13 NUCLEAR REACTIONS  $^{10}\text{B}(^3\text{He}, p)$ , E=4.9 MeV;  $^{11}\text{B}(^3\text{He}, d)$ , E=8.5 MeV; measured  $E_p$ ,  $I_p$ ,  $E\alpha$ ,  $I\alpha$  in complete kinematics.  $^{12}\text{C}$ ; deduced  $\gamma$ -ray and  $\alpha$ -decay branching ratios from high energy levels, B(M1). Comparison with calculations and other data. JOUR PYLBB 680 44
- 2009LE02 NUCLEAR REACTIONS  $^{12}\text{C}(^{17}\text{C}, np^{15}\text{B})$ , E=35 MeV / nucleon; measured neutron spectra, (fragment)(neutron)-coin,  $\sigma(\theta)$ , related features.  $^{16}\text{B}$  deduced energy levels, J,  $\pi$ , configurations. Comparison with shell model calculations and other data. Secondary radioactive beam. JOUR PYLBB 672 6

**A=12 (continued)**

- 2009LE09 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{16}\text{O}(\nu, \pi^0)$ ,  $^{12}\text{C}(\nu, \pi^+)$ , E=0.5-2.0 GeV; measured pion production as a function of kinetic energy, single  $\pi^+$  cross sections for charged current. Giessen Boltzmann-Uehling-Uhlenbeck model for neutrino induced reactions to charged current and neutral current pion production. JOUR PRVCA 79 038501
- 2009TA13 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{26}\text{Mg}$ ,  $^{28}\text{Si}$ ,  $^{48}\text{Ca}$ ,  $^{58,64}\text{Ni}$ ,  $^{208}\text{Pb}(p, p')$ , E=295 MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- 2009TI02 NUCLEAR REACTIONS  $^{12}\text{C}(\alpha, \alpha)$ , E=2.6-8.2 MeV; measured  $E_\alpha$ ,  $I_\alpha$ ,  $\sigma(\theta)$ ; deduced phase shifts using R-matrix analysis.  $^{16}\text{O}$ ; deduced levels, resonances,  $\alpha$ -widths. Application to  $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$  reaction of astrophysical interest. JOUR PRVCA 79 055803
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, X)\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, X)^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, X)$  reaction. JOUR PRVCA 79 064604
- $^{12}\text{N}$  2008HY03 NUCLEAR REACTIONS  $^1\text{H}(^{12}\text{C}, X)^{12}\text{N}$ ,  $^2\text{H}(^{11}\text{B}, X)^{12}\text{B}$ , E not given; measured  $E_\alpha$ ,  $I_\alpha$ ; deduced branching ratios, Gamow-Teller transition strengths. JOUR IMPEE 17 2182
- 2009DI06 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ [from  $^{12}\text{C}(p, n)$ , E=28 MeV],  $^{12}\text{B}(\beta^-)$ [from  $^{11}\text{B}(d, p)$ , E=10 MeV]; measured  $E_\alpha$ ,  $E_\gamma$ ,  $\alpha\alpha\alpha$ -coin.  $^{12}\text{C}$ ; deduced levels, J,  $\pi$ , triple- $\alpha$  continuum states and their decay modes. R-matrix analysis. JOUR PRVCA 80 034316
- 2009D012 NUCLEAR REACTIONS  $^{12}\text{C}(p\text{-bar}, n\text{-bar})^{12}\text{N}$ , E=296 MeV; measured neutron spectra by time-of-flight method,  $\sigma(\theta)$ ,  $A_y$  and other polarization observables.  $^{12}\text{N}$ ; deduced levels, J,  $\pi$ . Comparison with distorted wave impulse approximation (DWIA) calculations using random-phase approximation (RPA) response functions. JOUR PRVCA 80 024319
- 2009FU03 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{16}\text{O}(^3\text{He}, t)$ , E=140 MeV / nucleon; measured triton spectra,  $\sigma$ , angular distributions.  $^{16}\text{F}$ ; deduced levels, J,  $\pi$ , widths.  $^{12}\text{N}$ ; deduced levels, J. Comparison with distorted wave Born approximation.  $^{30}\text{Si}(^3\text{He}, t)$ , E=140 MeV / nucleon; analyzed angular distribution data for IAS. JOUR PRVCA 79 024314
- 2009HY01 NUCLEAR REACTIONS  $^1\text{H}(^{12}\text{C}, n)$ ,  $^2\text{H}(^{11}\text{B}, p)$ ,  $^{12}\text{C}(p, n)$ ,  $^{11}\text{B}(d, p)$ , E not given; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E_\alpha$ ,  $I_\alpha$ ,  $\gamma\alpha$ -coin,  $\alpha\alpha$ -coin, decay spectra; deduced branching ratio, log ft, B(GT) to various  $^{12}\text{C}$  states. Comparison with no-core shell model calculations. JOUR PYLBB 678 459
- 2009HY01 RADIOACTIVITY  $^{12}\text{B}(\beta^-)$ ,  $^{12}\text{N}(\beta^+)$ ; deduced branching ratio, log ft, B(GT) to various  $^{12}\text{C}$  states. Comparison with no-core shell model calculations. JOUR PYLBB 678 459



**A=12 (continued)**

- 2009HY02 RADIOACTIVITY  $^{12}\text{N}(\beta^+)$ [from  $^{12}\text{C}(\text{p}, \text{n})$ , E=28 MeV],  $^{12}\text{B}(\beta^-)$ [from  $^{11}\text{B}(\text{d}, \text{p})$ , E=10 MeV];  $^{20}\text{Na}(\beta^+)$ [from  $^{24}\text{Mg}(\text{p}, \text{n}\alpha)$ , E not given]; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $E\beta$ ,  $\beta\gamma^-$ ,  $\beta\alpha^-$ ,  $\alpha\alpha\alpha$ -coin.  $^{12}\text{C}$ ,  $^{20}\text{Ne}$ ; deduced levels,  $\beta$  feedings, and logft. Triple- $\alpha$  method and R-matrix analysis. IGISOL-JYFL facility. JOUR PRVCA 80 044304
- 2009SA06 NUCLEAR REACTIONS  $^7\text{Li}$ , C(p, n), E=297 MeV;  $^{58}\text{Ni}$ ,  $^{70}\text{Zn}$ ,  $^{114}\text{Cd}$ ,  $^{118}\text{Sn}$ ,  $^{120}\text{Sn}(\text{p}, \text{n})$ , E=198, 297 MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  $^7\text{Be}$ ,  $^{12}\text{N}$ ,  $^{13}\text{N}$ ,  $^{58}\text{Cu}$ ,  $^{70}\text{Ga}$ ,  $^{114}\text{In}$ ,  $^{118}\text{Sb}$ ,  $^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
- $^{12}\text{O}$  2009SU14 NUCLEAR REACTIONS  $^{14}\text{O}(\text{p}, \text{t})$ , E=51 MeV / nucleon; measured Et, It; deduced an excited state,  $\sigma$ , breakdown of Z=8 shell closure. Comparison with distorted-wave calculations. JOUR PRLTA 103 152503

**A=13**

- $^{13}\text{B}$  2008CH28 NUCLEAR REACTIONS H, C( $^{12}\text{Be}$ , X), E=50 MeV / nucleon; measured particle spectra, (particle)(particle)-coin, angular distributions.  $^{6,7,9}\text{Li}$ ,  $^{8,9,10}\text{Be}$ ,  $^{12,13}\text{B}$ ; deduced levels, J,  $\pi$ , widths, isospins. JOUR PRVCA 78 054307
- 2009GU23 NUCLEAR REACTIONS  $^{13}\text{C}(\text{t}, ^3\text{He})$ , E=115 MeV / nucleon; measured  $^3\text{He}$  spectra,  $\sigma(\theta)$ ; deduced Gamow-Teller strengths for dipole transitions.  $^{13}\text{B}$ ; deduced levels, J,  $\pi$ . Comparison with shell-model calculations using WBT and WBP interactions. JOUR PRVCA 80 024305
- 2009IW03 NUCLEAR REACTIONS  $^7\text{Li}(^7\text{Li}, \text{p})$ , E=5.4 MeV; Measured  $I\gamma$ , Doppler-shifted  $E\gamma$ ; Deduced level energy, J,  $\pi$ , B(M1). Doppler-shift attenuation method (DSAM). JOUR PRLTA 102 202502
- $^{13}\text{C}$  2007SAZS NUCLEAR REACTIONS  $^{13}\text{C}(\alpha, \alpha')$ , C( $\alpha, \alpha'$ ), E=400 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$ , B(E0), B(E2), level properties: J,  $\pi$ ; calculated  $\sigma(\theta)$ , B(E0), B(E2), level properties: J,  $\pi$  using shell model. REPT CNS-REP-76,P27,Sasamoto
- 2008KA44 NUCLEAR REACTIONS  $^{11}\text{B}$ ,  $^{13}\text{C}(\alpha, \alpha)$ , E=388 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced  $\sigma(\theta)$ , B(E0). Comparison with DWBA calculations. JOUR IMPEE 17 2071
- 2009BA09 NUCLEAR REACTIONS  $^{14}\text{N}(^{12}\text{N}, ^{13}\text{O})$ , E=12 MeV / nucleon; measured particle spectra, angular distributions, DWBA analysis;  $^{12}\text{N}(\text{p}, \gamma)$ ; deduced asymptotic normalization coefficient, astrophysical S-factor, and reaction rates. JOUR PRVCA 79 025805
- 2009FR07 NUCLEAR REACTIONS  $^{12}\text{C}(\text{p}, \text{p}')$ , E=66 MeV;  $^{13}\text{C}(\text{p}, \text{p}')$ , E=200 MeV; measured  $E\text{p}$  and  $\sigma(\theta)$ .  $^{12}\text{C}$ ; deduced levels, J,  $\pi$ , 2+ excitation of the Hoyle state in  $^{12}\text{C}$ . Coupled-channel (CCRC) analysis. Implications for the  $^8\text{Be}+^4\text{He}$  reaction rate in stellar environments discussed. JOUR PRVCA 80 041303
- 2009KA14 NUCLEAR REACTIONS  $^{12}\text{C}(^{24}\text{O}, ^{23}\text{O})$ , E=920 MeV / nucleon; measured fragment spectra.  $^{24}\text{O}$ ; deduced one neutron removal spectroscopic factor.  $^{23}\text{O}$ ; deduced level energies. JOUR PRLTA 102 152501

**A=13 (continued)**

- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{13}\text{N}$  2009CH38 NUCLEAR REACTIONS  $\text{Be}$ ,  $\text{C}(^{10}\text{C}, \text{X})$ , E=10.7 MeV / nucleon; measured fragment spectra,  $\sigma(\theta)$ , proton-proton angular correlations, widths,  $\sigma$ , energy distributions of diproton, sequential two-proton,  $2\text{p}+2\alpha$ ,  $\text{p}+3\alpha$  and other cluster particle-decay modes from ground and excited resonant states.  $^{10}\text{B}$ ,  $^{10}\text{C}$ ,  $^{13}\text{N}$ ; deduced levels, J,  $\pi$ , resonances, particle decay modes. Resonance-decay spectroscopic techniques. Monte Carlo analysis of energy distributions. Comparison with two-proton decay modes from  $^6\text{Be}$  and  $^{45}\text{Fe}$ . JOUR PRVCA 80 024306
- 2009SA06 NUCLEAR REACTIONS  $^7\text{Li}$ ,  $\text{C}(\text{p}, \text{n})$ , E=297 MeV;  $^{58}\text{Ni}$ ,  $^{70}\text{Zn}$ ,  $^{114}\text{Cd}$ ,  $^{118}\text{Sn}$ ,  $^{120}\text{Sn}(\text{p}, \text{n})$ , E=198, 297 MeV; measured neutron TOF and  $\sigma(\text{E}, \theta)$ .  $^7\text{Be}$ ,  $^{12}\text{N}$ ,  $^{13}\text{N}$ ,  $^{58}\text{Cu}$ ,  $^{70}\text{Ga}$ ,  $^{114}\text{In}$ ,  $^{118}\text{Sb}$ ,  $^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{13}\text{O}$  2009BA09 NUCLEAR REACTIONS  $^{14}\text{N}(^{12}\text{N}, ^{13}\text{O})$ , E=12 MeV / nucleon; measured particle spectra, angular distributions, DWBA analysis;  $^{12}\text{N}(\text{p}, \gamma)$ ; deduced asymptotic normalization coefficient, astrophysical S-factor, and reaction rates. JOUR PRVCA 79 025805

**A=14**

- $^{14}\text{C}$  2009NA07 NUCLEAR REACTIONS  $^{15}\text{C}(\text{Pb}, \text{X})^{14}\text{C}$ , E=68 MeV / nucleon; measured breakup  $\sigma$  as a function of energy; deduced B(E1) as a function of excitation.  $^{14}\text{C}(\text{n}, \gamma)$ , E=0-2.8 MeV; deduced  $\sigma$  using principle of detailed balance and direct radiative capture model. Coulomb breakup process. Comparison with experimental data. JOUR PRVCA 79 035805

**A=14 (continued)**

- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{14}\text{N}$  2007NEZX NUCLEAR REACTIONS  $^{17}\text{O}(\text{p}, \alpha)$ ,  $^{18}\text{O}(\text{p}, \alpha)$ , E = 1, 3 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced excitation functions, resonances. Comparison with GEANT4 simulations. REPT TUNL-XLVI,P32,Newton
- 2008SE12 NUCLEAR MOMENTS  $^{14}\text{N}$ ; measured temperature dependence of nuclear quadrupole resonance frequencies. JOUR ZNASE 63a 88
- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$ [from  $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009M016 NUCLEAR REACTIONS  $^{18}\text{F}$ ,  $^{17}\text{O}(\text{p}, \alpha)$ , E=3.27 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced resonance energy and strength. JOUR APOBB 40 699
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{14}\text{O}$  2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$ [from  $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802

**A=15**

- $^{15}\text{C}$  2008CAZX NUCLEAR REACTIONS  $^{11}\text{B}$ ,  $^{15}\text{N}$ ,  $^{19}\text{F}(^7\text{Li}, ^7\text{Be})$ , E  $\sim$  8 MeV / nucleon; measured single-particle states, excitation energy spectra. CONF Cappadocia (Nuclear Physics and Astrophysics),P249,Cavallaro
- 2009NA07 NUCLEAR REACTIONS  $^{15}\text{C}(\text{Pb}, \text{X})^{14}\text{C}$ , E=68 MeV / nucleon; measured breakup  $\sigma$  as a function of energy; deduced B(E1) as a function of excitation.  $^{14}\text{C}(\text{n}, \gamma)$ , E=0-2.8 MeV; deduced  $\sigma$  using principle of detailed balance and direct radiative capture model. Coulomb breakup process. Comparison with experimental data. JOUR PRVCA 79 035805
- $^{15}\text{N}$  2007NEZX NUCLEAR REACTIONS  $^{17}\text{O}(\text{p}, \alpha)$ ,  $^{18}\text{O}(\text{p}, \alpha)$ , E = 1, 3 MeV; measured  $E\alpha$ ,  $I\alpha$ ; deduced excitation functions, resonances. Comparison with GEANT4 simulations. REPT TUNL-XLVI,P32,Newton

KEYNUMBERS AND KEYWORDS

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**A=15 (continued)**

- 2009AG11 NUCLEAR REACTIONS  ${}^6,7\text{Li}$ ,  ${}^9\text{Be}$ ,  ${}^{12}\text{C}$ ,  ${}^{16}\text{O}(\text{K}^-, \pi^-)$ , E at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths.  ${}^7\text{Li}$ ,  ${}^{11}\text{B}$ ,  ${}^{15}\text{N}$ ; deduced hypernucleus ground-state J,  $\pi$ . Comparison with other data. JOUR PYLBB 681 139
- 2009ISZZ NUCLEAR REACTIONS  ${}^8\text{Li}(\alpha, \text{n})$ , E(cm)=0.7-2.6 MeV;  ${}^8\text{Li}(\text{d}, \text{t})$ , E=0.3-1.2 MeV / nucleon;  ${}^{12}\text{B}(\alpha, \text{n})$ , E(cm)=1.1-3.6 MeV; measured E(particle), I(particle); deduced  $\sigma$ , reaction rates. Compared to other data and predictions, discussed reaction paths of r-process. CONF Tokai (Perspective in Nuc Phys), Proc.P177,Ishiyama
- 2009TR03 NUCLEAR REACTIONS  ${}^{66}\text{Zn}({}^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  ${}^{66}\text{Zn}({}^{19}\text{F}, \text{X}){}^9\text{B} / {}^{10}\text{B} / {}^{11}\text{B} / {}^{12}\text{C} / {}^{13}\text{C} / {}^{14}\text{C} / {}^{13}\text{N} / {}^{14}\text{N} / {}^{15}\text{N} / {}^{16}\text{O} / {}^{17}\text{O} / {}^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  ${}^{89}\text{Y}({}^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- ${}^{15}\text{O}$  2007FUZW NUCLEAR REACTIONS  ${}^{14}\text{N}(\text{p}, \gamma)$ , E(cm) = 70-480 keV; measured E $\gamma$ , I $\gamma$ ; deduced s-factor, ground state contributions. REPT ATOMKI 2007 Annual,P22,Fulop
- 2009DA07 NUCLEAR REACTIONS  ${}^1\text{H}({}^{19}\text{Ne}, \text{p})$ , E=9 MeV / nucleon; measured E $p$ , I $p$ , angular distributions.  ${}^{19}\text{Ne}$ ; deduced level energies, J,  $\pi$ , widths.  ${}^{18}\text{F}(\text{p}, \alpha)$ ; calculated S-factor. JOUR PRLTA 102 162503
- 2009DE03 NUCLEAR REACTIONS  ${}^1\text{H}({}^{18}\text{F}, \alpha)$ , E=13.8 MeV; measured (particle)-(particle) coin,  $\sigma$ ,  $\sigma(\theta)$ ; deduced S-factor. Comparison with R-matrix calculations. JOUR PRVCA 79 015801
- 2009M016 NUCLEAR REACTIONS  ${}^{18}\text{F}$ ,  ${}^{17}\text{O}(\text{p}, \alpha)$ , E=3.27 MeV; measured E $\alpha$ , I $\alpha$ ; deduced resonance energy and strength. JOUR APOBB 40 699
- 2009MU07 NUCLEAR REACTIONS  ${}^1\text{H}({}^{18}\text{F}, \alpha)$ ,  $({}^{18}\text{F}, \text{p})$ , E=1.750 MeV / nucleon; measured particle spectra,  $\sigma$ .  ${}^{19}\text{Ne}$ ; deduced levels, J,  $\pi$ , resonances,  $\alpha$  widths, proton widths. R-matrix analysis.  ${}^{18}\text{F}(\text{p}, \alpha){}^{15}\text{O}$ ; deduced reaction rates. JOUR PRVCA 79 058801
- 2009OL02 NUCLEAR REACTIONS  ${}^{16}\text{O}(\text{p}, \text{d})$ , E at 3.25 GeV / c; measured cumulative deuteron production cross sections. JOUR PANUE 72 452
- ${}^{15}\text{F}$  2009MU09 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{17}\text{Ne}, \text{X}){}^{16}\text{Ne} / {}^{15}\text{F}$ , E=450 MeV / nucleon; measured particle spectra, (particle)(proton)( $\theta$ ), (particle)(proton)(proton)( $\theta$ ), and widths.  ${}^{15}\text{F}$ ,  ${}^{16}\text{Ne}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 061301

**A=16**

- ${}^{16}\text{B}$  2009LE02 NUCLEAR REACTIONS  ${}^{12}\text{C}({}^{17}\text{C}, \text{np}){}^{15}\text{B}$ , E=35 MeV / nucleon; measured neutron spectra, (fragment)(neutron)-coin,  $\sigma(\theta)$ , related features.  ${}^{16}\text{B}$  deduced energy levels, J,  $\pi$ , configurations. Comparison with shell model calculations and other data. Secondary radioactive beam. JOUR PYLBB 672 6

**A=16 (continued)**

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| $^{16}\text{N}$ | 2008BA45 | NUCLEAR REACTIONS $^2\text{H}(^{15}\text{N}, \text{p})$ , $E=100$ MeV; measured particle spectra, $\sigma(\theta)$ , spectroscopic factors. $^{16}\text{N}$ ; deduced levels, $J$ , $\pi$ . $^{15}\text{N}(\text{n}, \gamma)$ ; deduced reaction rate. Comparison with Distorted-Wave Born approximation. JOUR PRVCA 78 052801   |
| $^{16}\text{O}$ | 2007WOZY | NUCLEAR REACTIONS $^{13}\text{C}(\alpha, \text{n})$ , $E < 5.4$ MeV; measured $E\alpha$ , $I\alpha$ ; deduced $\sigma$ , absolute normalized neutron $\sigma(\theta)$ . REPT TUNL-XLVI,P18,Wood  |
|                 | 2008AN17 | NUCLEAR REACTIONS $^{16}\text{O}(^{14}\text{N}, ^{14}\text{N})$ , $(^{14}\text{N}, ^{13}\text{C})$ , $E=76.2, 57.0$ MeV; measured $\sigma(\theta)$ . Compared results to model calculations. JOUR CPLEE 25 4237  |
|                 | 2008BE38 | NUCLEAR REACTIONS $^{12}\text{C}(^{24}\text{Mg}, \text{X})^{16}\text{O} / ^{20}\text{Ne}$ , $E=130$ MeV; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin.; deduced energy levels, $J$ , $\pi$ , level scheme. JOUR IMPEE 17 2049   |
|                 | 2008MA51 | NUCLEAR REACTIONS $^{19}\text{F}(\text{p}, \alpha\gamma)$ , $E\approx 2$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ coin, angular distributions. $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ ; analyzed widths, S-factor, Asymptotic Normalization Coefficient. JOUR PRVCA 78 065801  |
|                 | 2009AG11 | NUCLEAR REACTIONS $^{6,7}\text{Li}$ , $^9\text{Be}$ , $^{12}\text{C}$ , $^{16}\text{O}(\text{K}^-, \pi^-)$ , $E$ at rest; measured negative pion energy spectra from decaying hypernucleus; calculated decay widths. $^7\text{Li}$ , $^{11}\text{B}$ , $^{15}\text{N}$ ; deduced hypernucleus ground-state $J$ , $\pi$ . Comparison with other data. JOUR PYLBB 681 139                                    |
|                 | 2009AS01 | NUCLEAR REACTIONS $^4\text{He}(^{12}\text{C}, \alpha)$ , $E=46, 52, 56, 63$ MeV; measured $E\alpha$ , $I\alpha$ , resonant scattering cross sections. $^{16}\text{O}$ ; deduced resonance parameters. JOUR JPGPE 36 055105   |
|                 | 2009BE34 | NUCLEAR REACTIONS $^{12}\text{C}(^{24}\text{Mg}, \text{X})$ , $E=130$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (fragment) $\gamma$ -coin using Binary Reaction Spectrometer (BRS) in coincidence with Euroball IV array. $^{24}\text{Mg}$ , $^{20}\text{Ne}$ , $^{16}\text{O}$ ; deduced levels, $J$ , $\pi$ , deformations. Comparison with shell-model calculations. JOUR PRVCA 80 034604 |
|                 | 2009LE09 | NUCLEAR REACTIONS $^{12}\text{C}$ , $^{16}\text{O}(\nu, \pi^0)$ , $^{12}\text{C}(\nu, \pi^+)$ , $E=0.5-2.0$ GeV; measured pion production as a function of kinetic energy, single $\pi^+$ cross sections for charged current. Giessen Boltzmann-Uehling-Uhlenbeck model for neutrino induced reactions to charged current and neutral current pion production. JOUR PRVCA 79 038501                        |
|                 | 2009MA18 | NUCLEAR REACTIONS $^{19}\text{F}(\text{p}, \alpha\gamma)^{16}\text{O}$ , $E=1.378$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. Double electron-positron pair production by $\gamma$ rays. JOUR PRVCA 79 048501   |
|                 | 2009MAZU | NUCLEAR REACTIONS $^{12}\text{C}(\alpha, \gamma)$ , $E(\text{cm})=1.2, 1.4, 1.6$ MeV; measured $E\gamma$ , $I\gamma$ , $\theta(\gamma)$ using anti-Compton NaI(Tl) spectrometers; deduced $\sigma$ , $\sigma(E1)$ , $\sigma(E2)$ using fitted angular distribution formula. In future, $\sigma$ at 300 keV to be deduced from analysis. CONF Tokai (Perspective in Nuc Phys), Proc.P284,Makii              |
|                 | 2009TI02 | NUCLEAR REACTIONS $^{12}\text{C}(\alpha, \alpha)$ , $E=2.6-8.2$ MeV; measured $E\alpha$ , $I\alpha$ , $\sigma(\theta)$ ; deduced phase shifts using R-matrix analysis. $^{16}\text{O}$ ; deduced levels, resonances, $\alpha$ -widths. Application to $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$ reaction of astrophysical interest. JOUR PRVCA 79 055803  |

**A=16 (continued)**

- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{16}\text{F}$  2009FU03 NUCLEAR REACTIONS  $^{12}\text{C}, ^{16}\text{O}(^3\text{He}, \text{t})$ , E=140 MeV / nucleon; measured triton spectra,  $\sigma$ , angular distributions.  $^{16}\text{F}$ ; deduced levels, J,  $\pi$ , widths.  $^{12}\text{N}$ ; deduced levels, J. Comparison with distorted wave Born approximation.  $^{30}\text{Si}(^3\text{He}, \text{t})$ , E=140 MeV / nucleon; analyzed angular distribution data for IAS. JOUR PRVCA 79 024314
- $^{16}\text{Ne}$  2009MU09 NUCLEAR REACTIONS  $^9\text{Be}(^{17}\text{Ne}, \text{X})^{16}\text{Ne} / ^{15}\text{F}$ , E=450 MeV / nucleon; measured particle spectra, (particle)(proton)( $\theta$ ), (particle)(proton)(proton)( $\theta$ ), and widths.  $^{15}\text{F}$ ,  $^{16}\text{Ne}$ ; deduced levels, J,  $\pi$ . JOUR PRVCA 79 061301

**A=17**

- $^{17}\text{C}$  2009K002 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{C}, ^{18}\text{C})$ , E=81 MeV / nucleon;  $^1\text{H}(^{18}\text{C}, ^{17}\text{C})$ , E=68 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , (particle)- $\gamma$  coin, transverse-momentum distributions.  $^{17,18}\text{C}$ ; deduced levels, J,  $\pi$ . Comparison with continuum-discretized coupled-channel calculations. JOUR PRVCA 79 014602
- $^{17}\text{N}$  2009DE34 NUCLEAR MOMENTS  $^{17,18}\text{N}$ ; measured g factors using  $\beta$ -NMR technique on spin-polarized fragment beams; deduced magnetic moments. Comparison with previous experimental results. JOUR PRVCA 80 037306
- $^{17}\text{O}$  2009MI23 NUCLEAR REACTIONS  $^9\text{Be}(^{13}\text{C}, \alpha)$ , E=90 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E(^{13}\text{C})$ ,  $^{13}\text{C}\alpha$ -coin; deduced  $^{17}\text{O}$  excitation energy spectrum.  $^{17}\text{O}$ ; deduced levels, J,  $\pi$ . Comparison with other data. JOUR ZAANE 41 335
- 2009TR03 NUCLEAR REACTIONS  $^{66}\text{Zn}(^{19}\text{F}, \text{X})\text{Li} / \text{Be} / \text{B} / \text{C} / \text{N} / \text{O}$ , E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters.  $^{66}\text{Zn}(^{19}\text{F}, \text{X})^9\text{B} / ^{10}\text{B} / ^{11}\text{B} / ^{12}\text{C} / ^{13}\text{C} / ^{14}\text{C} / ^{13}\text{N} / ^{14}\text{N} / ^{15}\text{N} / ^{16}\text{O} / ^{17}\text{O} / ^{18}\text{O}$ , E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from  $^{89}\text{Y}(^{19}\text{F}, \text{X})$  reaction. JOUR PRVCA 79 064604
- $^{17}\text{F}$  2008AN17 NUCLEAR REACTIONS  $^{16}\text{O}(^{14}\text{N}, ^{14}\text{N}), (^{14}\text{N}, ^{13}\text{C})$ , E=76.2, 57.0 MeV; measured  $\sigma(\theta)$ . Compared results to model calculations. JOUR CPLEE 25 4237
- 2009HE16 NUCLEAR REACTIONS  $^1\text{H}(^{17}\text{F}, \text{p}')$ , E=44.2 MeV; measured proton spectra, gamma spectra at the REX-ISOLDE facility.  $^{14}\text{O}(\alpha, \text{p})^{17}\text{F}$ ; deduced resonant contribution to the reaction rates of astrophysical significance for hot CNO cycle. JOUR PRVCA 80 042801

KEYNUMBERS AND KEYWORDS

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**A=17 (continued)**

<sup>17</sup>Ne      2008GE07      ATOMIC MASSES <sup>17,18,19,20,21,22</sup>Ne; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502

**A=18**

<sup>18</sup>C      2009K002      NUCLEAR REACTIONS <sup>1</sup>H(<sup>19</sup>C, <sup>18</sup>C), E=81 MeV / nucleon; <sup>1</sup>H(<sup>18</sup>C, <sup>17</sup>C), E=68 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ , (particle)- $\gamma$  coin, transverse-momentum distributions. <sup>17,18</sup>C; deduced levels, J,  $\pi$ . Comparison with continuum-discretized coupled-channel calculations. JOUR PRVCA 79 014602

<sup>18</sup>N      2009DE34      NUCLEAR MOMENTS <sup>17,18</sup>N; measured g factors using  $\beta$ -NMR technique on spin-polarized fragment beams; deduced magnetic moments. Comparison with previous experimental results. JOUR PRVCA 80 037306

<sup>18</sup>O      2009BAZT      RADIOACTIVITY <sup>18</sup>Ne( $\beta^+$ ), <sup>11</sup>Li( $\beta^-$ ), A=160( $\beta^+$ ) [from TRIUMF-ISAC]; <sup>18</sup>F( $\beta^+$ ) [from <sup>18</sup>Ne]; measured E $\beta$ , I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta$ - $\gamma$ -coin.; deduced J,  $\pi$ , transition strengths. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P19,Ball

2009J007      NUCLEAR REACTIONS <sup>6</sup>Li(<sup>14</sup>C, d), E=8.8 MeV; <sup>7</sup>Li(<sup>14</sup>C, t), E=11.5 MeV; measured Ed, Id, Et, It,  $\sigma$ ,  $\sigma(\theta)$ . <sup>18</sup>O; deduced levels, J,  $\pi$ . <sup>14</sup>C( $\alpha$ ,  $\gamma$ )<sup>18</sup>O; deduced astrophysical S factors, reaction rates, and asymptotic normalization coefficients (ANCs). JOUR PRVCA 80 045805

2009MI23      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>13</sup>C,  $\alpha$ ), E=90 MeV; measured E $\alpha$ , I $\alpha$ , E(<sup>13</sup>C), <sup>13</sup>C $\alpha$ -coin; deduced <sup>17</sup>O excitation energy spectrum. <sup>17</sup>O; deduced levels, J,  $\pi$ . Comparison with other data. JOUR ZAANE 41 335

2009RE15      ATOMIC MASSES <sup>18</sup>O, <sup>19</sup>F; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012507

2009TR03      NUCLEAR REACTIONS <sup>66</sup>Zn(<sup>19</sup>F, X)Li / Be / B / C / N / O, E=65, 85, 95, 112 MeV; measured spectra of projectile-like fragments and scattered beam particles,  $\sigma$ ,  $\sigma(\theta)$ ; deduced transmission coefficients, probability for complete fusion, transfer probabilities and optical model parameters. <sup>66</sup>Zn(<sup>19</sup>F, X)<sup>9</sup>B / <sup>10</sup>B / <sup>11</sup>B / <sup>12</sup>C / <sup>13</sup>C / <sup>14</sup>C / <sup>13</sup>N / <sup>14</sup>N / <sup>15</sup>N / <sup>16</sup>O / <sup>17</sup>O / <sup>18</sup>O, E=61, 82, 92 MeV; deduced slope parameter  $\alpha$ . Comparison with sum-rule model calculations and with data from <sup>89</sup>Y(<sup>19</sup>F, X) reaction. JOUR PRVCA 79 064604

<sup>18</sup>F      2009BAZT      RADIOACTIVITY <sup>18</sup>Ne( $\beta^+$ ), <sup>11</sup>Li( $\beta^-$ ), A=160( $\beta^+$ ) [from TRIUMF-ISAC]; <sup>18</sup>F( $\beta^+$ ) [from <sup>18</sup>Ne]; measured E $\beta$ , I $\beta$ , E $\gamma$ , I $\gamma$ ,  $\beta$ - $\gamma$ -coin.; deduced J,  $\pi$ , transition strengths. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P19,Ball

2009DE42      RADIOACTIVITY <sup>19</sup>Ne(p); measured Ep, Ip; deduced  $\sigma(\theta)$  of emitted protons. JOUR IMPEE 18 2140

**A=18 (continued)**

- 2009LE23 NUCLEAR REACTIONS  $^{21}\text{Ne}(\text{p}, \alpha)^{18}\text{F}$ ,  $E=2.3\text{-}4.0$  MeV; measured  $E\gamma$ ,  $I\gamma$ , decay curves, half-lives; deduced reaction yields and  $\sigma$  by R-matrix analysis.  $^{18}\text{F}(\alpha, \text{p})^{21}\text{Ne}$ ,  $E=0.5\text{-}2.1$  MeV; deduced  $\sigma$  and reaction rates. Comparison with Hauser-Feshbach calculations. Discussed implications for astrophysical r-process and evolution of elemental abundances in supernovae. JOUR PRVCA 80 025805
- 2009MU07 NUCLEAR REACTIONS  $^1\text{H}(^{18}\text{F}, \alpha)$ ,  $(^{18}\text{F}, \text{p})$ ,  $E=1.750$  MeV / nucleon; measured particle spectra,  $\sigma$ .  $^{19}\text{Ne}$ ; deduced levels,  $J$ ,  $\pi$ , resonances,  $\alpha$  widths, proton widths. R-matrix analysis.  $^{18}\text{F}(\text{p}, \alpha)^{15}\text{O}$ ; deduced reaction rates. JOUR PRVCA 79 058801
- $^{18}\text{Ne}$  2008GE07 ATOMIC MASSES  $^{17,18,19,20,21,22}\text{Ne}$ ; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502
- 2009BAZT RADIOACTIVITY  $^{18}\text{Ne}(\beta^+)$ ,  $^{11}\text{Li}(\beta^-)$ ,  $A=160(\beta^+)$  [from TRIUMF-ISAC];  $^{18}\text{F}(\beta^+)$  [from  $^{18}\text{Ne}$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $I\gamma$ ,  $\beta$ - $\gamma$ -coin.; deduced  $J$ ,  $\pi$ , transition strengths. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P19,Ball
- 2009CH17 NUCLEAR REACTIONS  $^1\text{H}(^{17}\text{F}, \gamma)$ ,  $E < 14.3$  MeV; measured recoil spectra, cross sections.  $^{17}\text{F}(\text{p}, \gamma)$ ; deduced resonance strengths and reaction rates. JOUR PRLTA 102 152502
- 2009JI02 NUCLEAR REACTIONS  $^{197}\text{Au}(^{18}\text{Ne}, ^{18}\text{Ne}')$ ,  $E$  not given; measured  $E_p$ ,  $I_p$ .  $^{18}\text{Ne}$ ; deduced level energies. Two proton decay. JOUR CPLEE 26 032301

**A=19**

- $^{19}\text{O}$  2008CAZX NUCLEAR REACTIONS  $^{11}\text{B}$ ,  $^{15}\text{N}$ ,  $^{19}\text{F}(^7\text{Li}, ^7\text{Be})$ ,  $E \sim 8$  MeV / nucleon; measured single-particle states, excitation energy spectra. CONF Cappadocia (Nuclear Physics and Astrophysics),P249,Cavallaro
- $^{19}\text{F}$  2008NOZZ NUCLEAR REACTIONS  $^{238}\text{U}(\alpha, \text{X})$ ,  $E=62$  MeV;  $^{19}\text{F}$ ,  $^{25}\text{Mg}$ ,  $^{32}\text{S}$ ,  $^{34}\text{S}$ ,  $^{88}\text{Sr}$ ,  $^{103}\text{Rh}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced neutron clusters. Activation method, Ge detector. CONF Moscow,P74,Novatsky
- 2009RE15 ATOMIC MASSES  $^{18}\text{O}$ ,  $^{19}\text{F}$ ; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012507
- $^{19}\text{Ne}$  2008GE07 ATOMIC MASSES  $^{17,18,19,20,21,22}\text{Ne}$ ; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502
- 2009DA07 NUCLEAR REACTIONS  $^1\text{H}(^{19}\text{Ne}, \text{p})$ ,  $E=9$  MeV / nucleon; measured  $E_p$ ,  $I_p$ , angular distributions.  $^{19}\text{Ne}$ ; deduced level energies,  $J$ ,  $\pi$ , widths.  $^{18}\text{F}(\text{p}, \alpha)$ ; calculated S-factor. JOUR PRLTA 102 162503
- 2009DE42 RADIOACTIVITY  $^{19}\text{Ne}(\text{p})$ ; measured  $E_p$ ,  $I_p$ ; deduced  $\sigma(\theta)$  of emitted protons. JOUR IMPEE 18 2140
- 2009MU07 NUCLEAR REACTIONS  $^1\text{H}(^{18}\text{F}, \alpha)$ ,  $(^{18}\text{F}, \text{p})$ ,  $E=1.750$  MeV / nucleon; measured particle spectra,  $\sigma$ .  $^{19}\text{Ne}$ ; deduced levels,  $J$ ,  $\pi$ , resonances,  $\alpha$  widths, proton widths. R-matrix analysis.  $^{18}\text{F}(\text{p}, \alpha)^{15}\text{O}$ ; deduced reaction rates. JOUR PRVCA 79 058801
- 2009TA09 NUCLEAR REACTIONS  $^{19}\text{F}(^3\text{He}, \text{t})$ ,  $E=24$  MeV; measured triton spectra,  $t\alpha$ -coin,  $\alpha(\theta)$ ,  $\alpha$ -decay branching ratios.  $^{19}\text{Ne}$ ; deduced levels,  $J$ ,  $\pi$ ,  $\alpha$ -unbound resonances.  $^{15}\text{O}(\alpha, \gamma)$ ; deduced reaction rates versus temperature. JOUR PRVCA 79 055805



## A=20

- <sup>20</sup>C      2009EL03      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>20</sup>C, <sup>20</sup>C'), E=37.6 MeV / nucleon; <sup>1</sup>H(<sup>20</sup>C, <sup>20</sup>C'), E=41.4 MeV / nucleon; measured E $\gamma$ , I $\gamma$ . <sup>20</sup>C; deduced levels, J,  $\pi$ , charge and neutron transition probabilities, B(E2). Comparison with shell model calculations. JOUR PRVCA 79 011302
- <sup>20</sup>F      2008NAZX      RADIOACTIVITY <sup>20</sup>F( $\beta^-$ ); measured E $\beta$ , I $\beta$ ,  $\theta(\beta)$ , E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$  from aligned nuclei; calculated effect of delayed  $\gamma$  rays. Analysis of G parity in progress. REPT RIKEN 2007 Annual,P18,Nagatomo
- <sup>20</sup>Ne      2008BE38      NUCLEAR REACTIONS <sup>12</sup>C(<sup>24</sup>Mg, X)<sup>16</sup>O / <sup>20</sup>Ne, E=130 MeV; measured E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin.; deduced energy levels, J,  $\pi$ , level scheme. JOUR IMPEE 17 2049
- 2008GE07      ATOMIC MASSES <sup>17,18,19,20,21,22</sup>Ne; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502
- 2008NAZX      RADIOACTIVITY <sup>20</sup>F( $\beta^-$ ); measured E $\beta$ , I $\beta$ ,  $\theta(\beta)$ , E $\gamma$ , I $\gamma$ ,  $\theta(\gamma)$  from aligned nuclei; calculated effect of delayed  $\gamma$  rays. Analysis of G parity in progress. REPT RIKEN 2007 Annual,P18,Nagatomo
- 2009BE34      NUCLEAR REACTIONS <sup>12</sup>C(<sup>24</sup>Mg, X), E=130 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (fragment) $\gamma$ -coin using Binary Reaction Spectrometer (BRS) in coincidence with Euroball IV array. <sup>24</sup>Mg, <sup>20</sup>Ne, <sup>16</sup>O; deduced levels, J,  $\pi$ , deformations. Comparison with shell-model calculations. JOUR PRVCA 80 034604
- 2009HY02      RADIOACTIVITY <sup>12</sup>N( $\beta^+$ )[from <sup>12</sup>C(p, n), E=28 MeV], <sup>12</sup>B( $\beta^-$ )[from <sup>11</sup>B(d, p), E=10 MeV]; <sup>20</sup>Na( $\beta^+$ )[from <sup>24</sup>Mg(p, n $\alpha$ ), E not given]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ , E $\beta$ ,  $\beta\gamma$ -,  $\beta\alpha$ -,  $\alpha\alpha\alpha$ -coin. <sup>12</sup>C, <sup>20</sup>Ne; deduced levels,  $\beta$  feedings, and logft. Triple- $\alpha$  method and R-matrix analysis. IGISOL-JYFL facility. JOUR PRVCA 80 044304
- 2009IC05      RADIOACTIVITY <sup>24</sup>Si( $\beta^+$ ), ( $\beta^+$ p), <sup>23</sup>Al( $\beta^+$ )[from <sup>9</sup>Be(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , Ep, Ip,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup>Na, <sup>22,23</sup>Mg, <sup>24</sup>Al( $\beta^+$ ); measured E $\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup>Si and <sup>24</sup>Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- <sup>20</sup>Na      2009HY02      RADIOACTIVITY <sup>12</sup>N( $\beta^+$ )[from <sup>12</sup>C(p, n), E=28 MeV], <sup>12</sup>B( $\beta^-$ )[from <sup>11</sup>B(d, p), E=10 MeV]; <sup>20</sup>Na( $\beta^+$ )[from <sup>24</sup>Mg(p, n $\alpha$ ), E not given]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ , E $\beta$ ,  $\beta\gamma$ -,  $\beta\alpha$ -,  $\alpha\alpha\alpha$ -coin. <sup>12</sup>C, <sup>20</sup>Ne; deduced levels,  $\beta$  feedings, and logft. Triple- $\alpha$  method and R-matrix analysis. IGISOL-JYFL facility. JOUR PRVCA 80 044304
- 2009IC05      RADIOACTIVITY <sup>24</sup>Si( $\beta^+$ ), ( $\beta^+$ p), <sup>23</sup>Al( $\beta^+$ )[from <sup>9</sup>Be(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , Ep, Ip,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup>Na, <sup>22,23</sup>Mg, <sup>24</sup>Al( $\beta^+$ ); measured E $\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup>Si and <sup>24</sup>Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009MI04      NUCLEAR MOMENTS <sup>20,21,27</sup>Na [from Si(p, X), E=500 MeV]; measured  $\beta$ -NMR spectra; deduced quadrupole coupling constants and quadrupole moments. Comparison with shell model predictions and data. JOUR PYLBB 672 120

**A=20 (continued)**

- 2009SC23 NUCLEAR REACTIONS Ti( $^{20}\text{Na}$ ,  $^{20}\text{Na}'$ ), E=1.7 MeV / nucleon; measured particle spectra,  $E\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin, angular correlations and  $\gamma$ -ray yield.  $^{20}\text{Na}$ ,  $^{48}\text{Ti}$ ; deduced levels, J,  $\pi$ , mixing ratios, transition matrix elements, B(M1), B(E2), and static electric quadrupole moments. 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, and with results for  $^{20}\text{F}$  mirror nucleus. JOUR PRVCA 80 044325
- 2009SC23 NUCLEAR MOMENTS  $^{20}\text{Na}$ ,  $^{48}\text{Ti}$ ; deduced static electric quadrupole moments from Coulomb excitation experiment. JOUR PRVCA 80 044325

**A=21**

- $^{21}\text{Ne}$  2008GE07 ATOMIC MASSES  $^{17,18,19,20,21,22}\text{Ne}$ ; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502
- 2009IC05 RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ ,  $(\beta^+p)$ ,  $^{23}\text{Al}(\beta^+)$ [from  $^9\text{Be}(^{28}\text{Si}, X)$ , E=100 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E_p$ ,  $I_p$ ,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives.  $^{24}\text{Al}$ ,  $^{23}\text{Mg}$ ; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths.  $^{20,21}\text{Na}$ ,  $^{22,23}\text{Mg}$ ,  $^{24}\text{Al}(\beta^+)$ ; measured  $E\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from  $^{24}\text{Si}$  and  $^{24}\text{Ne}$  decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009LE23 NUCLEAR REACTIONS  $^{21}\text{Ne}(p, \alpha)^{18}\text{F}$ , E=2.3-4.0 MeV; measured  $E\gamma$ ,  $I\gamma$ , decay curves, half-lives; deduced reaction yields and  $\sigma$  by R-matrix analysis.  $^{18}\text{F}(\alpha, p)^{21}\text{Ne}$ , E=0.5-2.1 MeV; deduced  $\sigma$  and reaction rates. Comparison with Hauser-Feshbach calculations. Discussed implications for astrophysical r-process and evolution of elemental abundances in supernovae. JOUR PRVCA 80 025805
- $^{21}\text{Na}$  2009CH28 NUCLEAR REACTIONS  $^{24}\text{Mg}(p, t)$ , E=41, 41.5 MeV; measured triton spectra,  $\sigma(\theta)$ .  $^{22}\text{Mg}$ ; deduced levels, J,  $\pi$ . DWBA analysis of  $\sigma(\theta)$  data.  $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ ; deduced reaction rates versus temperature. JOUR PRVCA 79 055804
- 2009HE12 NUCLEAR REACTIONS  $p(^{21}\text{Na}, p)^{22}\text{Mg}$ , E=4.0 MeV / nucleon; measured  $E_p$ ,  $\sigma(\theta)$ .  $^{22}\text{Mg}$ ; deduced levels, J,  $\pi$ , resonances, widths and resonance parameters. R-matrix analysis of  $\sigma(\theta)$  data with SAMMY-M6-BETA code.  $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ , E not given; deduced astrophysical resonance reaction rates.  $^{22}\text{Mg}$ ,  $^{22}\text{Ne}$ ; comparison of level systematics of mirror nuclei. JOUR PRVCA 80 015801
- 2009IC05 RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ ,  $(\beta^+p)$ ,  $^{23}\text{Al}(\beta^+)$ [from  $^9\text{Be}(^{28}\text{Si}, X)$ , E=100 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $E_p$ ,  $I_p$ ,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives.  $^{24}\text{Al}$ ,  $^{23}\text{Mg}$ ; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths.  $^{20,21}\text{Na}$ ,  $^{22,23}\text{Mg}$ ,  $^{24}\text{Al}(\beta^+)$ ; measured  $E\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from  $^{24}\text{Si}$  and  $^{24}\text{Ne}$  decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302

KEYNUMBERS AND KEYWORDS

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**A=21 (continued)**

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|                  | 2009MI04 | NUCLEAR MOMENTS <sup>20,21,27</sup> Na [from Si(p, X), E=500 MeV]; measured $\beta$ -NMR spectra; deduced quadrupole coupling constants and quadrupole moments. Comparison with shell model predictions and data. JOUR PYLBB 672 120   |
| <sup>21</sup> Mg | 2009KR05 | NUCLEAR MOMENTS <sup>21</sup> Mg [from Si(p, X), E=1.4 GeV]; measured hfs; deduced ground state spin, g-factor, $\mu$ using collinear laser spectroscopy and NMR; calculated J, $\pi$ , configuration. Comparison with shell model calculations and discussed <sup>21</sup> F and other mirror pairs. JOUR PYLBB 678 465 |

**A=22**

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|------------------|----------|---|
| <sup>22</sup> N  | 2009ST20 | NUCLEAR REACTIONS Be( <sup>26</sup> F, X) <sup>22</sup> N, E=85 MeV / nucleon; measured En and (fragment)(neutron)-coin spectrum. <sup>22</sup> N; deduced levels, J, $\pi$ . Level systematics of N=14, 15 C, N and O isotones. Comparison with shell-model calculations using WBTM and WBPM interactions. JOUR PRVCA 80 021302  |
| <sup>22</sup> O  | 2008FR10 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>26</sup> Ne, X) <sup>22</sup> O / <sup>23</sup> O / <sup>24</sup> O, E=86 MeV / nucleon; measured fragment and neutron spectra, (fragment)n-coin, decay energy spectra; deduced reaction mechanism features. <sup>22,23,24</sup> O deduced levels, J, $\pi$ , strength functions, configurations. <sup>23</sup> O observed unbound state. JOUR NUPAB 813 199  |
| <sup>22</sup> Ne | 2008GE07 | ATOMIC MASSES <sup>17,18,19,20,21,22</sup> Ne; measured masses and charge radii using penning trap mass spectrometry. JOUR PRLTA 101 252502   |
|                  | 2009SI18 | RADIOACTIVITY <sup>22</sup> Na( $\beta^+$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin.; deduced no evidence of correlations or pattern formation. JOUR EULEE 87 32001  |
|                  | 2009US01 | NUCLEAR REACTIONS <sup>22</sup> Ne(p, p'), E=1623, 1721, 1803, 1835 keV; measured I $\gamma$ , E $\gamma$ ; deduced B(M1), deformation parameters; <sup>22</sup> Ne(p, $\gamma$ ), E=1590-1850 keV; measured I $\gamma$ , E $\gamma$ ; deduced excitation function, rotational bands. Bands with K $^\pi$ =(3 / 2) <sup>+</sup> and K $^\pi$ =(1 / 2) <sup>+</sup> . Compared with calculations within Nilsson model. JOUR IMPEE 18 1084  |
| <sup>22</sup> Na | 2008RA27 | NUCLEAR REACTIONS <sup>24</sup> Mg( <sup>6</sup> Li, n2p), ( <sup>6</sup> Li, np $\alpha$ ), ( <sup>6</sup> Li, p $\alpha$ ), ( <sup>6</sup> Li, 2p), ( <sup>6</sup> Li, np), ( <sup>6</sup> Li, 2 $\alpha$ ), ( <sup>6</sup> Li, n $\alpha$ ), ( <sup>7</sup> Li, n2p), ( <sup>7</sup> Li, np $\alpha$ ), ( <sup>7</sup> Li, p $\alpha$ ), ( <sup>7</sup> Li, 2np), ( <sup>7</sup> Li, np), ( <sup>7</sup> Li, 2 $\alpha$ ), ( <sup>7</sup> Li, n $\alpha$ ), E=6.0-30.0 MeV; measured E $\gamma$ , I $\gamma$ , $\sigma$ . JOUR PRVCA 78 064617   |
|                  | 2009ER02 | RADIOACTIVITY <sup>26</sup> Si(EC), ( $\beta^+$ )[from <sup>27</sup> Al(p, 2n) <sup>26</sup> Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup> C, <sup>14</sup> O, <sup>22</sup> Mg, <sup>26m</sup> Al, <sup>26</sup> Si, <sup>34</sup> Cl, <sup>34</sup> Ar, <sup>38m</sup> K, <sup>42</sup> Sc, <sup>46</sup> V, <sup>50</sup> Mn, <sup>54</sup> Co, <sup>62</sup> Ga, <sup>74</sup> Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802  |
|                  | 2009IC05 | RADIOACTIVITY <sup>24</sup> Si( $\beta^+$ ), ( $\beta^+$ p), <sup>23</sup> Al( $\beta^+$ )[from <sup>9</sup> Be( <sup>28</sup> Si, X), E=100 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , Ep, Ip, $\beta\gamma$ -, $\gamma\gamma$ -coin, half-lives. <sup>24</sup> Al, <sup>23</sup> Mg; deduced levels, J, $\pi$ , $\beta^+$ and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup> Na, <sup>22,23</sup> Mg, <sup>24</sup> Al( $\beta^+$ ); measured E $\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup> Si and <sup>24</sup> Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302 |

KEYNUMBERS AND KEYWORDS

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**A=22 (continued)**

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|                  | 2009NA08 | RADIOACTIVITY $^{22}\text{Na}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin. Activity standardization. JOUR ARISE 66 865  |
|                  | 2009SI18 | RADIOACTIVITY $^{22}\text{Na}(\beta^+)$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin.; deduced no evidence of correlations or pattern formation. JOUR EULEE 87 32001  |
| $^{22}\text{Mg}$ | 2009CH28 | NUCLEAR REACTIONS $^{24}\text{Mg}(p, t)$ , $E=41, 41.5$ MeV; measured triton spectra, $\sigma(\theta)$ . $^{22}\text{Mg}$ ; deduced levels, $J$ , $\pi$ . DWBA analysis of $\sigma(\theta)$ data. $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ ; deduced reaction rates versus temperature. JOUR PRVCA 79 055804  |
|                  | 2009ER02 | RADIOACTIVITY $^{26}\text{Si}(\text{EC})$ , $(\beta^+)$ [from $^{27}\text{Al}(p, 2n)^{26}\text{Si}$ , $E=35$ MeV]; deduced $Q$ value and log ft. $^{10}\text{C}$ , $^{14}\text{O}$ , $^{22}\text{Mg}$ , $^{26m}\text{Al}$ , $^{26}\text{Si}$ , $^{34}\text{Cl}$ , $^{34}\text{Ar}$ , $^{38m}\text{K}$ , $^{42}\text{Sc}$ , $^{46}\text{V}$ , $^{50}\text{Mn}$ , $^{54}\text{Co}$ , $^{62}\text{Ga}$ , $^{74}\text{Rb}(\text{EC})$ , $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802  |
|                  | 2009HE12 | NUCLEAR REACTIONS $p(^{21}\text{Na}, p)^{22}\text{Mg}$ , $E=4.0$ MeV / nucleon; measured $E_p$ , $\sigma(\theta)$ . $^{22}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , resonances, widths and resonance parameters. R-matrix analysis of $\sigma(\theta)$ data with SAMMY-M6-BETA code. $^{18}\text{Ne}(\alpha, p)^{21}\text{Na}$ , $E$ not given; deduced astrophysical resonance reaction rates. $^{22}\text{Mg}$ , $^{22}\text{Ne}$ ; comparison of level systematics of mirror nuclei. JOUR PRVCA 80 015801  |
|                  | 2009IC05 | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ , $(\beta^+p)$ , $^{23}\text{Al}(\beta^+)$ [from $^9\text{Be}(^{28}\text{Si}, X)$ , $E=100$ MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $E_p$ , $I_p$ , $\beta\gamma$ -, $\gamma\gamma$ -coin, half-lives. $^{24}\text{Al}$ , $^{23}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , $\beta^+$ and delayed-proton emission probabilities, logft, and $B(\text{GT})$ strengths. $^{20,21}\text{Na}$ , $^{22,23}\text{Mg}$ , $^{24}\text{Al}(\beta^+)$ ; measured $E_\gamma$ . Comparison with shell-model calculation. Comparison of $B(\text{GT})$ strengths from $^{24}\text{Si}$ and $^{24}\text{Ne}$ decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302 |
|                  | 2009NA08 | RADIOACTIVITY $^{22}\text{Na}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin. Activity standardization. JOUR ARISE 66 865  |

**A=23**

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| $^{23}\text{O}$  | 2007ELZW | NUCLEAR REACTIONS $^{40}\text{Ar}(^9\text{Be}, X)$ , $E = 94$ MeV / nucleon; $^{23}\text{O}$ ; measured $E_p$ , $I_p$ ; deduced $E_n$ , $I_n$ , excitation energy spectrum. REPT ATOMKI 2007 Annual,P23,Elekes   |
|                  | 2008FR10 | NUCLEAR REACTIONS $^9\text{Be}(^{26}\text{Ne}, X)^{22}\text{O} / ^{23}\text{O} / ^{24}\text{O}$ , $E=86$ MeV / nucleon; measured fragment and neutron spectra, (fragment)n-coin, decay energy spectra; deduced reaction mechanism features. $^{22,23,24}\text{O}$ deduced levels, $J$ , $\pi$ , strength functions, configurations. $^{23}\text{O}$ observed unbound state. JOUR NUPAB 813 199 |
|                  | 2009KA14 | NUCLEAR REACTIONS $^{12}\text{C}(^{24}\text{O}, ^{23}\text{O})$ , $E=920$ MeV / nucleon; measured fragment spectra. $^{24}\text{O}$ ; deduced one neutron removal spectroscopic factor. $^{23}\text{O}$ ; deduced level energies. JOUR PRLTA 102 152501  |
| $^{23}\text{Ne}$ | 2009SA38 | ATOMIC MASSES $^{23}\text{Al}$ , $^{23}\text{Mg}$ ; measured masses with JYFLTRAP Penning trap spectrometer using $^{23}\text{Na}$ as a reference. $^{23}\text{Al}$ , $^{23}\text{Mg}$ , $^{23}\text{Na}$ , $^{23}\text{Ne}$ ; analyzed isobaric multiplet mass equation (IMME) for $T=3 / 2$ system. JOUR PRVCA 80 044330   |

**A=23 (continued)**

- <sup>23</sup>Na      2008RA27      NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>6</sup>Li, n2p), (<sup>6</sup>Li, npα), (<sup>6</sup>Li, pα), (<sup>6</sup>Li, 2p), (<sup>6</sup>Li, np), (<sup>6</sup>Li, 2α), (<sup>6</sup>Li, nα), (<sup>7</sup>Li, n2p), (<sup>7</sup>Li, npα), (<sup>7</sup>Li, pα), (<sup>7</sup>Li, 2np), (<sup>7</sup>Li, np), (<sup>7</sup>Li, 2α), (<sup>7</sup>Li, nα), E=6.0-30.0 MeV; measured E<sub>γ</sub>, I<sub>γ</sub>, σ. JOUR PRVCA 78 064617
- 2009IC05      RADIOACTIVITY <sup>24</sup>Si(β<sup>+</sup>), (β<sup>+</sup>p), <sup>23</sup>Al(β<sup>+</sup>)[from <sup>9</sup>Be(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E<sub>γ</sub>, I<sub>γ</sub>, Ep, Ip, βγ-, γγ-coin, half-lives. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J, π, β<sup>+</sup> and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup>Na, <sup>22,23</sup>Mg, <sup>24</sup>Al(β<sup>+</sup>); measured E<sub>γ</sub>. Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup>Si and <sup>24</sup>Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009SA38      ATOMIC MASSES <sup>23</sup>Al, <sup>23</sup>Mg; measured masses with JYFLTRAP Penning trap spectrometer using <sup>23</sup>Na as a reference. <sup>23</sup>Al, <sup>23</sup>Mg, <sup>23</sup>Na, <sup>23</sup>Ne; analyzed isobaric multiplet mass equation (IMME) for T=3 / 2 system. JOUR PRVCA 80 044330
- 2009US01      NUCLEAR REACTIONS <sup>22</sup>Ne(p, p'), E=1623, 1721, 1803, 1835 keV; measured I<sub>γ</sub>, E<sub>γ</sub>; deduced B(M1), deformation parameters; <sup>22</sup>Ne(p, γ), E=1590-1850 keV; measured I<sub>γ</sub>, E<sub>γ</sub>; deduced excitation function, rotational bands. Bands with K<sup>π</sup>=(3 / 2)<sup>+</sup> and K<sup>π</sup>=(1 / 2)<sup>+</sup>. Compared with calculations within Nilsson model. JOUR IMPEE 18 1084
- <sup>23</sup>Mg      2009IC05      RADIOACTIVITY <sup>24</sup>Si(β<sup>+</sup>), (β<sup>+</sup>p), <sup>23</sup>Al(β<sup>+</sup>)[from <sup>9</sup>Be(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E<sub>γ</sub>, I<sub>γ</sub>, Ep, Ip, βγ-, γγ-coin, half-lives. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J, π, β<sup>+</sup> and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup>Na, <sup>22,23</sup>Mg, <sup>24</sup>Al(β<sup>+</sup>); measured E<sub>γ</sub>. Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup>Si and <sup>24</sup>Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009SA38      ATOMIC MASSES <sup>23</sup>Al, <sup>23</sup>Mg; measured masses with JYFLTRAP Penning trap spectrometer using <sup>23</sup>Na as a reference. <sup>23</sup>Al, <sup>23</sup>Mg, <sup>23</sup>Na, <sup>23</sup>Ne; analyzed isobaric multiplet mass equation (IMME) for T=3 / 2 system. JOUR PRVCA 80 044330
- <sup>23</sup>Al      2009IC05      RADIOACTIVITY <sup>24</sup>Si(β<sup>+</sup>), (β<sup>+</sup>p), <sup>23</sup>Al(β<sup>+</sup>)[from <sup>9</sup>Be(<sup>28</sup>Si, X), E=100 MeV / nucleon]; measured E<sub>γ</sub>, I<sub>γ</sub>, Ep, Ip, βγ-, γγ-coin, half-lives. <sup>24</sup>Al, <sup>23</sup>Mg; deduced levels, J, π, β<sup>+</sup> and delayed-proton emission probabilities, logft, and B(GT) strengths. <sup>20,21</sup>Na, <sup>22,23</sup>Mg, <sup>24</sup>Al(β<sup>+</sup>); measured E<sub>γ</sub>. Comparison with shell-model calculation. Comparison of B(GT) strengths from <sup>24</sup>Si and <sup>24</sup>Ne decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009SA38      ATOMIC MASSES <sup>23</sup>Al, <sup>23</sup>Mg; measured masses with JYFLTRAP Penning trap spectrometer using <sup>23</sup>Na as a reference. <sup>23</sup>Al, <sup>23</sup>Mg, <sup>23</sup>Na, <sup>23</sup>Ne; analyzed isobaric multiplet mass equation (IMME) for T=3 / 2 system. JOUR PRVCA 80 044330

## A=24

- <sup>24</sup>O      2008FR10      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>26</sup>Ne, X)<sup>22</sup>O / <sup>23</sup>O / <sup>24</sup>O, E=86 MeV / nucleon; measured fragment and neutron spectra, (fragment)n-coin, decay energy spectra; deduced reaction mechanism features. <sup>22,23,24</sup>O deduced levels, J,  $\pi$ , strength functions, configurations. <sup>23</sup>O observed unbound state. JOUR NUPAB 813 199
- 2009H001      NUCLEAR REACTIONS Be(<sup>26</sup>F, n<sup>23</sup>O), E=85 MeV / nucleon; measured neutron decay energy spectra, (fragment)(neutron)-coin. <sup>24</sup>O deduced excited state energies, J,  $\pi$ . Comparison with other data and systematics. Secondary radioactive beam. JOUR PYLBB 672 17
- 2009KA14      NUCLEAR REACTIONS <sup>12</sup>C(<sup>24</sup>O, <sup>23</sup>O), E=920 MeV / nucleon; measured fragment spectra. <sup>24</sup>O; deduced one neutron removal spectroscopic factor. <sup>23</sup>O; deduced level energies. JOUR PRLTA 102 152501
- <sup>24</sup>Na      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009BE16      NUCLEAR REACTIONS <sup>27</sup>Al(d, p), (d, 2p), (d, p $\alpha$ ), E=3.38-20.18 MeV; <sup>63</sup>Cu(d, 2n), E=4-20 MeV; measured excitation functions. <sup>27</sup>Al(d, n), (d, 2n), (d,  $\alpha$ ), E<25 MeV; comparison of cross section data. Comparison with calculations from TALYS and ACSELAM computer codes, and experimental data. JOUR PRVCA 79 044610
- 2009LA07      NUCLEAR REACTIONS <sup>27</sup>Al, Ni(n,  $\alpha$ ), E=14.77 MeV; measured E $\alpha$ , I $\alpha$ ; deduced  $\sigma$ ,  $\sigma(\theta)$ ,  $\sigma(E, \theta)$ , reaction mechanism features. Comparison with TALYS and PRECO2007 calculations. <sup>24</sup>Na; deduced level density parameter. JOUR NUPAB 821 23
- 2009LU09      NUCLEAR REACTIONS <sup>181</sup>Ta(n, n' $\alpha$ ), (n, t), (n, d), (n,  $\alpha$ ), (n, p), (n, 2n)<sup>177</sup>Lu / <sup>179</sup>Hf / <sup>180</sup>Hf / <sup>178</sup>Lu / <sup>181</sup>Hf / <sup>180</sup>Ta, E=13.5, 14.1, 14.5, 14.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . <sup>27</sup>Al(n,  $\alpha$ )<sup>24</sup>Na, E=13.5, 14.1, 14.5, 14.7 MeV; measured  $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603
- 2009SI28      NUCLEAR REACTIONS <sup>197</sup>Au, <sup>181</sup>Ta, <sup>93</sup>Nb( $\alpha$ , n), <sup>197</sup>Au, <sup>181</sup>Ta( $\alpha$ , 2n), <sup>181</sup>Ta( $\alpha$ , 3n), <sup>197</sup>Au( $\alpha$ , 2pn), <sup>93</sup>Nb( $\alpha$ , 2p), <sup>197</sup>Au, <sup>93</sup>Nb( $\alpha$ ,  $\alpha$ n), <sup>27</sup>Al( $\alpha$ ,  $\alpha$ 2pn), E=18-60 MeV; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- 2009SZ03      NUCLEAR REACTIONS <sup>192</sup>Os(p,  $\alpha$ 3n), <sup>186</sup>W(p, n), (d, 2n), Cu(p, X)<sup>65</sup>Zn, Al(p, X)<sup>24</sup>Na, E<66.7 MeV; measured reaction products, E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , uncertainties. JOUR JRNCD 282 261
- 2010TA01      NUCLEAR REACTIONS <sup>133</sup>Cs(p, x)<sup>128</sup>Ba / <sup>129</sup>Ba / <sup>133</sup>Ba / <sup>127</sup>Cs / <sup>129</sup>Cs / <sup>132</sup>Cs / <sup>125</sup>Xe / <sup>127</sup>Xe / <sup>129</sup>Xe, Ti(p, x)<sup>48</sup>V, Al(p, x)<sup>24</sup>Na, E < 70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- <sup>24</sup>Mg      2008LE27      NUCLEAR REACTIONS <sup>12</sup>C(<sup>12</sup>C,  $\gamma$ ), <sup>12</sup>C(<sup>16</sup>O,  $\gamma$ ), E=9-12 MeV; measured E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin; deduced feeding states, J,  $\pi$ , energy levels. JOUR IMPEE 17 2044

## A=24 (continued)

- 2008MA56 NUCLEAR REACTIONS  $^{12}\text{C}(^{12}\text{C}, \gamma)$ , E=16.25 MeV; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin. JOUR IMPEE 17 2040
- 2008RA27 NUCLEAR REACTIONS  $^{24}\text{Mg}(^6\text{Li}, \text{n}2\text{p})$ ,  $(^6\text{Li}, \text{np}\alpha)$ ,  $(^6\text{Li}, \text{p}\alpha)$ ,  $(^6\text{Li}, 2\text{p})$ ,  $(^6\text{Li}, \text{np})$ ,  $(^6\text{Li}, 2\alpha)$ ,  $(^6\text{Li}, \text{n}\alpha)$ ,  $(^7\text{Li}, \text{n}2\text{p})$ ,  $(^7\text{Li}, \text{np}\alpha)$ ,  $(^7\text{Li}, \text{p}\alpha)$ ,  $(^7\text{Li}, 2\text{np})$ ,  $(^7\text{Li}, \text{np})$ ,  $(^7\text{Li}, 2\alpha)$ ,  $(^7\text{Li}, \text{n}\alpha)$ , E=6.0-30.0 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . JOUR PRVCA 78 064617
- 2009BE34 NUCLEAR REACTIONS  $^{12}\text{C}(^{24}\text{Mg}, \text{X})$ , E=130 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (fragment) $\gamma$ -coin using Binary Reaction Spectrometer (BRS) in coincidence with Euroball IV array.  $^{24}\text{Mg}$ ,  $^{20}\text{Ne}$ ,  $^{16}\text{O}$ ; deduced levels, J,  $\pi$ , deformations. Comparison with shell-model calculations. JOUR PRVCA 80 034604
- 2009CH33 NUCLEAR REACTIONS  $^{24}\text{Mg}$ ,  $^{28}\text{Si}(^6\text{Li}, ^6\text{Li})$ ,  $(^6\text{Li}, ^6\text{Li}')$ , E=240 MeV; measured particle spectra,  $\sigma$  and  $\sigma(\theta)$ ; deduced optical potential model parameters using two folding model potentials and a Woods-Saxon potential.  $^{24}\text{Mg}$ ,  $^{28}\text{Si}$ ; deduced E0, E1, E2 and E3 giant resonance strength distributions, multipole parameters, B(E2) and B(E3) probabilities for first 2+ and 3- states. Comparisons with distorted-wave Born approximation (DWBA) calculations and earlier  $\alpha$  scattering and  $^6\text{Li}$  scattering data. JOUR PRVCA 80 014312
- 2009IC05 RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ ,  $(\beta^+\text{p})$ ,  $^{23}\text{Al}(\beta^+)$ [from  $^9\text{Be}(^{28}\text{Si}, \text{X})$ , E=100 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , Ep, Ip,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives.  $^{24}\text{Al}$ ,  $^{23}\text{Mg}$ ; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths.  $^{20,21}\text{Na}$ ,  $^{22,23}\text{Mg}$ ,  $^{24}\text{Al}(\beta^+)$ ; measured  $E\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from  $^{24}\text{Si}$  and  $^{24}\text{Ne}$  decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009TA08 NUCLEAR REACTIONS  $^1\text{H}(^{32}\text{Mg}, ^{32}\text{Mg}')$ , E=46.5 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , scattered particle spectra,  $\sigma$ ,  $\sigma(\theta)$ .  $^{32}\text{Mg}$ ; deduced levels, J,  $\pi$ , deformation lengths, rms radii. Coupled-channel analysis of angular distribution cross sections.  $^{24,26,28,30,32,34}\text{Mg}$ ; level systematics. JOUR PRVCA 79 054319
- $^{24}\text{Al}$  2007KOZM NUCLEAR REACTIONS  $^{24}\text{Al}(^{134}\text{Xe}, ^{134}\text{Xe}')$ , E=410 MeV; measured  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin, Coulomb excitation. Data analysis in progress. REPT JAEA-Review 2007-046,P30,Koizumi
- 2009IC05 RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ ,  $(\beta^+\text{p})$ ,  $^{23}\text{Al}(\beta^+)$ [from  $^9\text{Be}(^{28}\text{Si}, \text{X})$ , E=100 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ , Ep, Ip,  $\beta\gamma$ -,  $\gamma\gamma$ -coin, half-lives.  $^{24}\text{Al}$ ,  $^{23}\text{Mg}$ ; deduced levels, J,  $\pi$ ,  $\beta^+$  and delayed-proton emission probabilities, logft, and B(GT) strengths.  $^{20,21}\text{Na}$ ,  $^{22,23}\text{Mg}$ ,  $^{24}\text{Al}(\beta^+)$ ; measured  $E\gamma$ . Comparison with shell-model calculation. Comparison of B(GT) strengths from  $^{24}\text{Si}$  and  $^{24}\text{Ne}$  decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302
- 2009ICZZ RADIOACTIVITY  $^{24}\text{Si}(\beta^+)$ ; measured delayed Ep,  $E\gamma$ ; deduced  $\beta$ -branching, log ft; deduced J,  $\pi$ ,  $\beta^+$ -decay of  $^{24}\text{Al}$ . Compared with mirror  $\beta$ -decay of  $^{24}\text{Ne}$ . REPT RIKEN-NC-NP-35, Ichikawa

KEYNUMBERS AND KEYWORDS

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**A=24 (continued)**

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| $^{24}\text{Si}$ | 2009IC05 | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ , $(\beta^+p)$ , $^{23}\text{Al}(\beta^+)$ [from $^9\text{Be}(^{28}\text{Si}, X)$ , $E=100$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $E_p$ , $I_p$ , $\beta\gamma^-$ , $\gamma\gamma$ -coin, half-lives. $^{24}\text{Al}$ , $^{23}\text{Mg}$ ; deduced levels, $J$ , $\pi$ , $\beta^+$ and delayed-proton emission probabilities, $\log ft$ , and $B(\text{GT})$ strengths. $^{20,21}\text{Na}$ , $^{22,23}\text{Mg}$ , $^{24}\text{Al}(\beta^+)$ ; measured $E\gamma$ . Comparison with shell-model calculation. Comparison of $B(\text{GT})$ strengths from $^{24}\text{Si}$ and $^{24}\text{Ne}$ decays. RIKEN-RIPS facility. JOUR PRVCA 80 044302 |
|                  | 2009ICZZ | RADIOACTIVITY $^{24}\text{Si}(\beta^+)$ ; measured delayed $E_p$ , $E\gamma$ ; deduced $\beta$ -branching, $\log ft$ ; deduced $J$ , $\pi$ , $\beta^+$ -decay of $^{24}\text{Al}$ . Compared with mirror $\beta$ -decay of $^{24}\text{Ne}$ . REPT RIKEN-NC-NP-35, Ichikawa   |

**A=25**

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| $^{25}\text{Mg}$ | 2008FUZV | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(n, p)$ , $E=3.5-5.9$ MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(n, \alpha)$ , $E=3.5-5.9$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta |
|                  | 2008NOZZ | NUCLEAR REACTIONS $^{238}\text{U}(\alpha, X)$ , $E=62$ MeV; $^{19}\text{F}$ , $^{25}\text{Mg}$ , $^{32}\text{S}$ , $^{34}\text{S}$ , $^{88}\text{Sr}$ , $^{103}\text{Rh}$ ; measured $E\gamma$ , $I\gamma$ ; deduced neutron clusters. Activation method, Ge detector. CONF Moscow,P74,Novatsky  |
|                  | 2008RA27 | NUCLEAR REACTIONS $^{24}\text{Mg}(^6\text{Li}, n2p)$ , $(^6\text{Li}, np\alpha)$ , $(^6\text{Li}, p\alpha)$ , $(^6\text{Li}, 2p)$ , $(^6\text{Li}, np)$ , $(^6\text{Li}, 2\alpha)$ , $(^6\text{Li}, n\alpha)$ , $(^7\text{Li}, n2p)$ , $(^7\text{Li}, np\alpha)$ , $(^7\text{Li}, p\alpha)$ , $(^7\text{Li}, 2np)$ , $(^7\text{Li}, np)$ , $(^7\text{Li}, 2\alpha)$ , $(^7\text{Li}, n\alpha)$ , $E=6.0-30.0$ MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ . JOUR PRVCA 78 064617  |
|                  | 2009BE16 | NUCLEAR REACTIONS $^{27}\text{Al}(d, p)$ , $(d, 2p)$ , $(d, p\alpha)$ , $E=3.38-20.18$ MeV; $^{63}\text{Cu}(d, 2n)$ , $E=4-20$ MeV; measured excitation functions. $^{27}\text{Al}(d, n)$ , $(d, 2n)$ , $(d, \alpha)$ , $E<25$ MeV; comparison of cross section data. Comparison with calculations from TALYS and ACSELAM computer codes, and experimental data. JOUR PRVCA 79 044610  |
| $^{25}\text{Al}$ | 2007CHZK | NUCLEAR REACTIONS $^1\text{H}(^{25}\text{Al}, p)$ , $E\approx 3.4$ MeV / nucleon; measured $E_p$ , $I_p$ . Future analysis will give information on $J$ , $\pi$ . REPT CNS-REP-76,P5,Chen  |
|                  | 2008RA27 | NUCLEAR REACTIONS $^{24}\text{Mg}(^6\text{Li}, n2p)$ , $(^6\text{Li}, np\alpha)$ , $(^6\text{Li}, p\alpha)$ , $(^6\text{Li}, 2p)$ , $(^6\text{Li}, np)$ , $(^6\text{Li}, 2\alpha)$ , $(^6\text{Li}, n\alpha)$ , $(^7\text{Li}, n2p)$ , $(^7\text{Li}, np\alpha)$ , $(^7\text{Li}, p\alpha)$ , $(^7\text{Li}, 2np)$ , $(^7\text{Li}, np)$ , $(^7\text{Li}, 2\alpha)$ , $(^7\text{Li}, n\alpha)$ , $E=6.0-30.0$ MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ . JOUR PRVCA 78 064617  |
|                  | 2009PE04 | NUCLEAR REACTIONS $^2\text{H}(^{25}\text{Al}, n)^{26}\text{Si}$ , $E=91.5$ MeV; $^2\text{H}(^{24}\text{Mg}, n)^{25}\text{Al}$ , $E=140$ MeV; measured decay proton spectra, resonances, excitation energies, $\sigma$ , proton and $\gamma$ widths. $^{26}\text{Si}$ ; deduced levels, resonances, $J$ , $\pi$ ; $^{25}\text{Al}(p, \gamma)^{26}\text{Si}$ ; deduced reaction rate. JOUR PRVCA 79 032801   |
|                  | 2009PI13 | NUCLEAR REACTIONS $^{28}\text{Si}(p, \alpha)$ , $E=40, 42$ MeV; measured $E\alpha$ , $I\alpha$ , $\sigma(\theta)$ . $^{25}\text{Al}$ ; deduced levels, $J$ , $\pi$ . DWBA analysis of $\sigma(\theta)$ . JOUR PRVCA 80 038801  |



## A=26

- <sup>26</sup>Ne 2009GIZZ NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>26</sup>Ne, <sup>26</sup>Ne'), E=58 MeV / nucleon; measured fragment spectra. <sup>26</sup>Ne; deduced level energies, B(E1). REPT RIKEN-NC-NP-29,Gibelin
- <sup>26</sup>Mg 2008FUZV NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, α), E=3.5-5.9 MeV; measured Eγ, Iγ; deduced σ. Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2008LOZY NUCLEAR REACTIONS <sup>26</sup>Mg(γ, γ'), E=11.3 MeV; measured Eγ, Iγ using linearly polarized beam on excited target-compound nucleus of <sup>22</sup>Ne(α, n); deduced π of excited states. State at 11154 keV is not natural parity state. REPT TUNL-XLII,P120,Longland
- 2008RA27 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>6</sup>Li, n2p), (<sup>6</sup>Li, npα), (<sup>6</sup>Li, pα), (<sup>6</sup>Li, 2p), (<sup>6</sup>Li, np), (<sup>6</sup>Li, 2α), (<sup>6</sup>Li, nα), (<sup>7</sup>Li, n2p), (<sup>7</sup>Li, npα), (<sup>7</sup>Li, pα), (<sup>7</sup>Li, 2np), (<sup>7</sup>Li, np), (<sup>7</sup>Li, 2α), (<sup>7</sup>Li, nα), E=6.0-30.0 MeV; measured Eγ, Iγ, σ. JOUR PRVCA 78 064617
- 2009ER02 RADIOACTIVITY <sup>26</sup>Si(EC), (β<sup>+</sup>)[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), (β<sup>+</sup>); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009SC07 NUCLEAR REACTIONS <sup>26</sup>Mg(γ, γ'), E=13.0 MeV; measured Eγ, Iγ, γ(θ), cross sections, widths. <sup>26</sup>Mg; deduced levels, J, π, B(E1), B(M1). JOUR PRVCA 79 037303
- 2009TA08 NUCLEAR REACTIONS <sup>1</sup>H(<sup>32</sup>Mg, <sup>32</sup>Mg'), E=46.5 MeV / nucleon; measured Eγ, Iγ, scattered particle spectra, σ, σ(θ). <sup>32</sup>Mg; deduced levels, J, π, deformation lengths, rms radii.Coupled-channel analysis of angular distribution cross sections. <sup>24,26,28,30,32,34</sup>Mg; level systematics. JOUR PRVCA 79 054319
- 2009TA13 NUCLEAR REACTIONS <sup>12</sup>C, <sup>26</sup>Mg, <sup>28</sup>Si, <sup>48</sup>Ca, <sup>58,64</sup>Ni, <sup>208</sup>Pb(p, p'), E=295 MeV; measured Ep, Ip, σ(θ); deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- 2009VAZY RADIOACTIVITY <sup>10</sup>Be, <sup>36</sup>Cl, <sup>60</sup>Fe(β<sup>-</sup>);<sup>26</sup>Al, <sup>41</sup>Ca, <sup>59</sup>Ni, <sup>53</sup>Mn(β<sup>+</sup>); measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela
- <sup>26</sup>Al 2008LAZV NUCLEAR REACTIONS Mg(<sup>3</sup>He, X)<sup>26</sup>Al, Ca(<sup>3</sup>He, X)<sup>36</sup>Cl, E=15-36 MeV; measured <sup>26</sup>Al / <sup>27</sup>Al and <sup>36</sup>Cl / Cl ratio using accelerator mass spectrometry;deduced σ. Compared with TALYS calculation. REPT MLL 2007 Annual,P31,Lachner
- 2008RA27 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>6</sup>Li, n2p), (<sup>6</sup>Li, npα), (<sup>6</sup>Li, pα), (<sup>6</sup>Li, 2p), (<sup>6</sup>Li, np), (<sup>6</sup>Li, 2α), (<sup>6</sup>Li, nα), (<sup>7</sup>Li, n2p), (<sup>7</sup>Li, npα), (<sup>7</sup>Li, pα), (<sup>7</sup>Li, 2np), (<sup>7</sup>Li, np), (<sup>7</sup>Li, 2α), (<sup>7</sup>Li, nα), E=6.0-30.0 MeV; measured Eγ, Iγ, σ. JOUR PRVCA 78 064617

KEYNUMBERS AND KEYWORDS

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**A=26 (continued)**

- 2009DE33 NUCLEAR REACTIONS  $^{27}\text{Al}(^3\text{He}, t)$ ,  $E=25$  MeV;  $^{28}\text{Si}(^3\text{He}, \alpha)$ ,  $E=17.5$  MeV; measured  $E_t$ ,  $I_t$ ,  $E\alpha$ ,  $I\alpha$ ,  $E_p$ ,  $I_p$ ,  $\alpha p$ -coin,  $\alpha p(\theta)$ .  $^{27}\text{Si}$ ; deduced levels, angular momentum transfer, proton branching ratios from resonances.  $^{26}\text{Al}$ ; deduced levels and feedings from proton decay of unbound states in  $^{27}\text{Si}$ . Deduced reaction rates for  $^{26m}\text{Al}(p, \gamma)$  reaction as a function of stellar temperature. JOUR PRVCA 80 035806
- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$ [from  $^{27}\text{Al}(p, 2n)^{26}\text{Si}$ ,  $E=35$  MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009VAZY RADIOACTIVITY  $^{10}\text{Be}$ ,  $^{36}\text{Cl}$ ,  $^{60}\text{Fe}(\beta^-)$ ;  $^{26}\text{Al}$ ,  $^{41}\text{Ca}$ ,  $^{59}\text{Ni}$ ,  $^{53}\text{Mn}(\beta^+)$ ; measured  $E(e)$ ,  $I(e)$ ; deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela
- $^{26}\text{Si}$  2007KWZU NUCLEAR REACTIONS  $^{28}\text{Si}(\alpha, ^6\text{He})$ ,  $E=120$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $\theta(\text{particle})$  using QDD type magnetic spectrograph; deduced 5918 keV state, some candidates for unnatural parity states in  $^{26}\text{Si}$ . REPT RIKEN 2006 Annual,P15,Kwon
- 2007KWZV NUCLEAR REACTIONS  $^{28}\text{Si}(\alpha, ^6\text{He})$ ,  $E=120$  MeV; measured  $E(^6\text{He})$ ,  $I(^6\text{He})$ ,  $\theta(^6\text{He})$ ; deduced states in  $^{26}\text{Si}$ . No spin and parity determined. REPT CNS-REP-76,P3,Kwon
- 2009ER02 ATOMIC MASSES  $^{26}\text{Si}$ ; measured Q(EC) and mass using the JYFLTRAP mass spectrometer;  $^{25}\text{Al}(p, \gamma)^{26}\text{Si}$ ; deduced Q-value and reaction rates. JOUR PRVCA 79 032802
- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$ [from  $^{27}\text{Al}(p, 2n)^{26}\text{Si}$ ,  $E=35$  MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009PE04 NUCLEAR REACTIONS  $^2\text{H}(^{25}\text{Al}, n)^{26}\text{Si}$ ,  $E=91.5$  MeV;  $^2\text{H}(^{24}\text{Mg}, n)^{25}\text{Al}$ ,  $E=140$  MeV; measured decay proton spectra, resonances, excitation energies,  $\sigma$ , proton and  $\gamma$  widths.  $^{26}\text{Si}$ ; deduced levels, resonances,  $J$ ,  $\pi$ ;  $^{25}\text{Al}(p, \gamma)^{26}\text{Si}$ ; deduced reaction rate. JOUR PRVCA 79 032801

**A=27**

- $^{27}\text{Na}$  2009MI04 NUCLEAR MOMENTS  $^{20,21,27}\text{Na}$  [from  $\text{Si}(p, X)$ ,  $E=500$  MeV]; measured  $\beta$ -NMR spectra; deduced quadrupole coupling constants and quadrupole moments. Comparison with shell model predictions and data. JOUR PYLBB 672 120
- $^{27}\text{Mg}$  2008FUZV NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, p)$ ,  $E=3.5-5.9$  MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, \alpha)$ ,  $E=3.5-5.9$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta

**A=27 (continued)**

- 2009BE16 NUCLEAR REACTIONS  $^{27}\text{Al}(\text{d}, \text{p})$ ,  $(\text{d}, 2\text{p})$ ,  $(\text{d}, \text{p}\alpha)$ ,  $E=3.38\text{-}20.18$  MeV;  $^{63}\text{Cu}(\text{d}, 2\text{n})$ ,  $E=4\text{-}20$  MeV; measured excitation functions.
- $^{27}\text{Al}$  2008KA43 NUCLEAR REACTIONS  $^{26}\text{Mg}(\text{p}, \gamma)$ ,  $E=0.8\text{-}3.0$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function.  $^{27}\text{Al}$ ; deduced resonance strengths,  $B(\text{M}1)$ . JOUR BRSP 72 1544
- 2008RA27 NUCLEAR REACTIONS  $^{24}\text{Mg}(\text{}^6\text{Li}, \text{n}2\text{p})$ ,  $(\text{}^6\text{Li}, \text{np}\alpha)$ ,  $(\text{}^6\text{Li}, \text{p}\alpha)$ ,  $(\text{}^6\text{Li}, 2\text{p})$ ,  $(\text{}^6\text{Li}, \text{np})$ ,  $(\text{}^6\text{Li}, 2\alpha)$ ,  $(\text{}^6\text{Li}, \text{n}\alpha)$ ,  $(\text{}^7\text{Li}, \text{n}2\text{p})$ ,  $(\text{}^7\text{Li}, \text{np}\alpha)$ ,  $(\text{}^7\text{Li}, \text{p}\alpha)$ ,  $(\text{}^7\text{Li}, 2\text{np})$ ,  $(\text{}^7\text{Li}, \text{np})$ ,  $(\text{}^7\text{Li}, 2\alpha)$ ,  $(\text{}^7\text{Li}, \text{n}\alpha)$ ,  $E=6.0\text{-}30.0$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . JOUR PRVCA 78 064617
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(\text{n}, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(\text{n}, \text{n}')$ ,  $\text{Pb}(\text{p}, \text{xn})^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ ,  $\text{In}(\text{p}, \text{xn})^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(\text{p}, 3\text{n})$ ,  $^{63}\text{Cu}(\text{p}, 2\text{n})$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(\text{p}, 4\text{n})$ ,  $E=0.8$  GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{27}\text{Si}$  2009BE16 NUCLEAR REACTIONS  $^{27}\text{Al}(\text{d}, \text{p})$ ,  $(\text{d}, 2\text{p})$ ,  $(\text{d}, \text{p}\alpha)$ ,  $E=3.38\text{-}20.18$  MeV;  $^{63}\text{Cu}(\text{d}, 2\text{n})$ ,  $E=4\text{-}20$  MeV; measured excitation functions.
- 2009DE33 NUCLEAR REACTIONS  $^{27}\text{Al}(\text{}^3\text{He}, \text{t})$ ,  $E=25$  MeV;  $^{28}\text{Si}(\text{}^3\text{He}, \alpha)$ ,  $E=17.5$  MeV; measured  $E\text{t}$ ,  $I\text{t}$ ,  $E\alpha$ ,  $I\alpha$ ,  $E\text{p}$ ,  $I\text{p}$ ,  $\alpha\text{p}$ -coin,  $\alpha\text{p}(\theta)$ .  $^{27}\text{Si}$ ; deduced levels, angular momentum transfer, proton branching ratios from resonances.  $^{26}\text{Al}$ ; deduced levels and feedings from proton decay of unbound states in  $^{27}\text{Si}$ . Deduced reaction rates for  $^{26\text{m}}\text{Al}(\text{p}, \gamma)$  reaction as a function of stellar temperature. JOUR PRVCA 80 035806
- 2009LI29 RADIOACTIVITY  $^{29}\text{S}(2\text{p})$ ; measured  $(^{29}\text{S})(\text{p})(\text{p})$ -coin; deduced branching ratios of two proton and  $^2\text{He}$  cluster decay modes from excited states. JOUR PRVCA 80 014310
- 2009L001 NUCLEAR REACTIONS  $^{12}\text{C}(\text{}^{16}\text{O}, \text{X})^{27}\text{Si}$ ,  $E=26$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{27}\text{Si}$ ; deduced resonance energies.  $^{26}\text{Al}(\text{p}, \gamma)$ ; calculated reaction rates at astrophysical energies. JOUR PRLTA 102 162502

**A=28**

- $^{28}\text{Mg}$  2009TA08 NUCLEAR REACTIONS  $^1\text{H}(\text{}^{32}\text{Mg}, \text{}^{32}\text{Mg}')$ ,  $E=46.5$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , scattered particle spectra,  $\sigma$ ,  $\sigma(\theta)$ .  $^{32}\text{Mg}$ ; deduced levels,  $J$ ,  $\pi$ , deformation lengths, rms radii. Coupled-channel analysis of angular distribution cross sections.  $^{24,26,28,30,32,34}\text{Mg}$ ; level systematics. JOUR PRVCA 79 054319

## A=28 (continued)

- <sup>28</sup>Al      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2008RA27      NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>6</sup>Li, n2p), (<sup>6</sup>Li, np $\alpha$ ), (<sup>6</sup>Li, p $\alpha$ ), (<sup>6</sup>Li, 2p), (<sup>6</sup>Li, np), (<sup>6</sup>Li, 2 $\alpha$ ), (<sup>6</sup>Li, n $\alpha$ ), (<sup>7</sup>Li, n2p), (<sup>7</sup>Li, np $\alpha$ ), (<sup>7</sup>Li, p $\alpha$ ), (<sup>7</sup>Li, 2np), (<sup>7</sup>Li, np), (<sup>7</sup>Li, 2 $\alpha$ ), (<sup>7</sup>Li, n $\alpha$ ), E=6.0-30.0 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . JOUR PRVCA 78 064617
- 2009BE16      NUCLEAR REACTIONS <sup>27</sup>Al(d, p), (d, 2p), (d, p $\alpha$ ), E=3.38-20.18 MeV; <sup>63</sup>Cu(d, 2n), E=4-20 MeV; measured excitation functions. <sup>27</sup>Al(d, n), (d, 2n), (d,  $\alpha$ ), E<25 MeV; comparison of cross section data. Comparison with calculations from TALYS and ACSELAM computer codes, and experimental data. JOUR PRVCA 79 044610
- <sup>28</sup>Si      2008LE27      NUCLEAR REACTIONS <sup>12</sup>C(<sup>12</sup>C,  $\gamma$ ), <sup>12</sup>C(<sup>16</sup>O,  $\gamma$ ), E=9-12 MeV; measured E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin; deduced feeding states, J,  $\pi$ , energy levels. JOUR IMPEE 17 2044
- 2008RA27      NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>6</sup>Li, n2p), (<sup>6</sup>Li, np $\alpha$ ), (<sup>6</sup>Li, p $\alpha$ ), (<sup>6</sup>Li, 2p), (<sup>6</sup>Li, np), (<sup>6</sup>Li, 2 $\alpha$ ), (<sup>6</sup>Li, n $\alpha$ ), (<sup>7</sup>Li, n2p), (<sup>7</sup>Li, np $\alpha$ ), (<sup>7</sup>Li, p $\alpha$ ), (<sup>7</sup>Li, 2np), (<sup>7</sup>Li, np), (<sup>7</sup>Li, 2 $\alpha$ ), (<sup>7</sup>Li, n $\alpha$ ), E=6.0-30.0 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . JOUR PRVCA 78 064617
- 2008RE16      ATOMIC MASSES <sup>28</sup>Si, <sup>31</sup>P; measured the cyclotron frequency ratios; deduced atomic masses. Cryogenic penning trap. JOUR PRLTA 100 093002
- 2009BE16      NUCLEAR REACTIONS <sup>27</sup>Al(d, p), (d, 2p), (d, p $\alpha$ ), E=3.38-20.18 MeV; <sup>63</sup>Cu(d, 2n), E=4-20 MeV; measured excitation functions. <sup>27</sup>Al(d, n), (d, 2n), (d,  $\alpha$ ), E<25 MeV; comparison of cross section data. Comparison with calculations from TALYS and ACSELAM computer codes, and experimental data. JOUR PRVCA 79 044610
- 2009CH33      NUCLEAR REACTIONS <sup>24</sup>Mg, <sup>28</sup>Si(<sup>6</sup>Li, <sup>6</sup>Li), (<sup>6</sup>Li, <sup>6</sup>Li'), E=240 MeV; measured particle spectra,  $\sigma$  and  $\sigma(\theta)$ ; deduced optical potential model parameters using two folding model potentials and a Woods-Saxon potential. <sup>24</sup>Mg, <sup>28</sup>Si; deduced E0, E1, E2 and E3 giant resonance strength distributions, multipole parameters, B(E2) and B(E3) probabilities for first 2+ and 3- states. Comparisons with distorted-wave Born approximation (DWBA) calculations and earlier  $\alpha$  scattering and <sup>6</sup>Li scattering data. JOUR PRVCA 80 014312
- 2009TA13      NUCLEAR REACTIONS <sup>12</sup>C, <sup>26</sup>Mg, <sup>28</sup>Si, <sup>48</sup>Ca, <sup>58,64</sup>Ni, <sup>208</sup>Pb(p, p'), E=295 MeV; measured Ep, Ip,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- 2009ZE01      NUCLEAR REACTIONS <sup>28</sup>Si(<sup>6</sup>Li, <sup>6</sup>Li), E=5-11 MeV; measured excitation functions,  $\sigma$ , and barrier distributions. Comparison with coupled channel calculations. JOUR PRVCA 80 017601

KEYNUMBERS AND KEYWORDS

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**A=29**

<sup>29</sup> Na	2009HU03	NUCLEAR REACTIONS <sup>110</sup> Pd( <sup>29</sup> Na, <sup>29</sup> Na'), E=70 MeV; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, charged-particle spectra following Coulomb excitation; deduced $\sigma$ . <sup>29</sup> Na; deduced B(E2). Comparison with shell model. JOUR PYLBB 674 168
<sup>29</sup> Al	2008FUZV	NUCLEAR REACTIONS <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
<sup>29</sup> Si	2008RA27	NUCLEAR REACTIONS <sup>24</sup> Mg( <sup>6</sup> Li, n2p), ( <sup>6</sup> Li, np $\alpha$ ), ( <sup>6</sup> Li, p $\alpha$ ), ( <sup>6</sup> Li, 2p), ( <sup>6</sup> Li, np), ( <sup>6</sup> Li, 2 $\alpha$ ), ( <sup>6</sup> Li, n $\alpha$ ), ( <sup>7</sup> Li, n2p), ( <sup>7</sup> Li, np $\alpha$ ), ( <sup>7</sup> Li, p $\alpha$ ), ( <sup>7</sup> Li, 2np), ( <sup>7</sup> Li, np), ( <sup>7</sup> Li, 2 $\alpha$ ), ( <sup>7</sup> Li, n $\alpha$ ), E=6.0-30.0 MeV; measured E $\gamma$ , I $\gamma$ , $\sigma$ . JOUR PRVCA 78 064617
	2009K010	NUCLEAR REACTIONS <sup>28</sup> Si(d, p), E=1.5-2.0 MeV; measured $\sigma(\alpha, E)$ . JOUR NIMBE 267 1744
<sup>29</sup> S	2009LI29	NUCLEAR REACTIONS <sup>197</sup> Au( <sup>29</sup> S, <sup>29</sup> S'), E=49.2 MeV / nucleon; measured particle spectra by $\Delta E$ -tof, ( <sup>29</sup> S)(p)(p)-coin. <sup>29</sup> S; deduced excitation spectrum, two proton and <sup>2</sup> He cluster decay branching ratios. JOUR PRVCA 80 014310
	2009LI29	RADIOACTIVITY <sup>29</sup> S(2p); measured ( <sup>29</sup> S)(p)(p)-coin; deduced branching ratios of two proton and <sup>2</sup> He cluster decay modes from excited states. JOUR PRVCA 80 014310

**A=30**

<sup>30</sup> Na	2009SC11	RADIOACTIVITY <sup>30</sup> Na( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced J, $\pi$ , monopole strength, partial E0 lifetime. Comparison with beyond mean field calculations. JOUR PRLTA 103 012501
<sup>30</sup> Mg	2008SCZX	RADIOACTIVITY <sup>30</sup> Mg( $\beta^-$ )[from <sup>30</sup> Na]; measured I $\beta$ , E $\beta$ , $\beta\beta$ -coin, conversion electrons; deduced B(E0), B(E2); analyzed B(E0), B(E2). Deduced mixing amplitude between shape-coexisting 0 <sup>+</sup> states, <sup>30</sup> Mg g.s. deformation. REPT MLL 2007 Annual,P4,Schwerdtfeger
	2009SC11	RADIOACTIVITY <sup>30</sup> Na( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced J, $\pi$ , monopole strength, partial E0 lifetime. Comparison with beyond mean field calculations. JOUR PRLTA 103 012501
	2009TA08	NUCLEAR REACTIONS <sup>1</sup> H( <sup>32</sup> Mg, <sup>32</sup> Mg'), E=46.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , scattered particle spectra, $\sigma$ , $\sigma(\theta)$ . <sup>32</sup> Mg; deduced levels, J, $\pi$ , deformation lengths, rms radii.Coupled-channel analysis of angular distribution cross sections. <sup>24,26,28,30,32,34</sup> Mg; level systematics. JOUR PRVCA 79 054319
<sup>30</sup> Al	2008SCZX	RADIOACTIVITY <sup>30</sup> Mg( $\beta^-$ )[from <sup>30</sup> Na]; measured I $\beta$ , E $\beta$ , $\beta\beta$ -coin, conversion electrons; deduced B(E0), B(E2); analyzed B(E0), B(E2). Deduced mixing amplitude between shape-coexisting 0 <sup>+</sup> states, <sup>30</sup> Mg g.s. deformation. REPT MLL 2007 Annual,P4,Schwerdtfeger

**A=30 (continued)**

- <sup>30</sup>P      2009FU03      NUCLEAR REACTIONS <sup>12</sup>C, <sup>16</sup>O(<sup>3</sup>He, t), E=140 MeV / nucleon; measured triton spectra,  $\sigma$ , angular distributions. <sup>16</sup>F; deduced levels, J,  $\pi$ , widths. <sup>12</sup>N; deduced levels, J. Comparison with distorted wave Born approximation. <sup>30</sup>Si(<sup>3</sup>He, t), E=140 MeV / nucleon; analyzed angular distribution data for IAS. JOUR PRVCA 79 024314

**A=31**

- <sup>31</sup>Mg      2009MI12      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>32</sup>Al, X), E=91 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\sigma$ , parallel momentum distributions. <sup>31</sup>Mg; deduced levels, J,  $\pi$ . Comparison with USD and AMD+GCM shell-model calculations and discussed relevance to "island of inversion". JOUR PRVCA 79 054306
- <sup>31</sup>Al      2007NAZL      RADIOACTIVITY <sup>31</sup>Al( $\beta^-$ ); measured  $\beta^-$ -decay asymmetry using  $\beta$ -NMR technique; deduced electric quadrupole moment. REPT RIKEN 2006 Annual,P12,Nagae
- 2009DE25      RADIOACTIVITY <sup>31</sup>Al( $\beta^-$ ); measured electric quadrupole coupling constant; deduced quadrupole moment, proton effective charge using two  $\beta$ -NQR techniques. Comparison with shell model. Quadrupole systematics in nearby nuclei discussed. JOUR PYLBB 678 344
- 2009NA03      NUCLEAR REACTIONS <sup>93</sup>Nb(<sup>40</sup>Ar, X)<sup>31</sup>Al, E=95 MeV / nucleon; measured ground state electric quadrupole moment for a spin polarized <sup>31</sup>Al beam using  $\beta$ -NQR spectroscopy. JOUR PRVCA 79 027301
- 2009NA03      NUCLEAR MOMENTS <sup>31</sup>Al; measured ground state electric quadrupole moments using the  $\beta$ -NQR method. JOUR PRVCA 79 027301
- <sup>31</sup>Si      2007NAZL      RADIOACTIVITY <sup>31</sup>Al( $\beta^-$ ); measured  $\beta^-$ -decay asymmetry using  $\beta$ -NMR technique; deduced electric quadrupole moment. REPT RIKEN 2006 Annual,P12,Nagae
- 2009DE25      RADIOACTIVITY <sup>31</sup>Al( $\beta^-$ ); measured electric quadrupole coupling constant; deduced quadrupole moment, proton effective charge using two  $\beta$ -NQR techniques. Comparison with shell model. Quadrupole systematics in nearby nuclei discussed. JOUR PYLBB 678 344
- <sup>31</sup>P      2008RE16      ATOMIC MASSES <sup>28</sup>Si, <sup>31</sup>P; measured the cyclotron frequency ratios; deduced atomic masses. Cryogenic penning trap. JOUR PRLTA 100 093002
- <sup>31</sup>S      2009WR02      NUCLEAR REACTIONS <sup>31</sup>P(<sup>3</sup>He, t)<sup>31</sup>S, E=20, 25 MeV; <sup>31</sup>P(<sup>3</sup>He, t)<sup>31</sup>S, E=20 MeV; <sup>32</sup>S(d, t)<sup>31</sup>S, E=25 MeV; measured (particle)(particle)-coin, proton branching ratios, tp( $\theta$ ). <sup>31</sup>S; deduced levels, J,  $\pi$ . <sup>30</sup>P(p,  $\gamma$ )<sup>31</sup>S; deduced spectroscopic factors, widths and reaction rates. Comparison with Hauser-Feshbach statistical model estimates. JOUR PRVCA 79 045803

## A=32

$^{32}\text{Ne}$	2009D010	NUCLEAR REACTIONS C( $^{32}\text{Ne}$ , $^{32}\text{Ne}'$ ), E=226 MeV / nucleon; $^{32}\text{Ne}$ ; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin following projectile Coulomb excitation; deduced level energy, J, $\pi$ . Secondary beams from $^{48}\text{Ca}$ fragmentation. JOUR PRLTA 103 032501
$^{32}\text{Mg}$	2008TAZU	NUCLEAR REACTIONS $^{32}\text{Mg}(\gamma, \gamma')$ , E not given; measured $E\gamma$ , $I\gamma$ using Coulomb excitation; deduced $d\sigma(\theta)$ , B(E2), $\beta_2$ , $\beta_4$ ; calculated $d\sigma(\theta)$ using CC code ECIS97 with KD02 optical model parameters. Compared to data; symmetric rotational model for two-step transitions, one-step hexadecapole model, harmonic vibrational model. REPT RIKEN 2007 Annual,Pxvi,Takeuchi
	2009TA08	NUCLEAR REACTIONS $^1\text{H}(^{32}\text{Mg}, ^{32}\text{Mg}')$ , E=46.5 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , scattered particle spectra, $\sigma$ , $\sigma(\theta)$ . $^{32}\text{Mg}$ ; deduced levels, J, $\pi$ , deformation lengths, rms radii.Coupled-channel analysis of angular distribution cross sections. $^{24,26,28,30,32,34}\text{Mg}$ ; level systematics. JOUR PRVCA 79 054319
	2009TAZZ	NUCLEAR REACTIONS $^1\text{H}(^{32}\text{Mg}, ^{32}\text{Mg}')$ , E=46.5 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\sigma(\theta)$ . $^{32}\text{Mg}$ ; deduced level energies, J, $\pi$ . REPT RIKEN-NC-NP-32,Takeuchi
$^{32}\text{Al}$	2007KAZK	RADIOACTIVITY $^{32}\text{Al}(\beta^-)$ ; measured $\beta^-$ -decay asymmetry using $\beta$ -NMR technique; deduced electric quadrupole moment. Compared to other Al isotopes. REPT RIKEN 2006 Annual,Piii,Kameda
	2007TAZJ	RADIOACTIVITY $^{32}\text{Al}(\beta^-)$ ; measured isomer decay, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. using time differential perturbed angular distribution method; deduced $T_{1/2}$ , g-factor. REPT RIKEN 2006 Annual,P13,Takase
	2008KAZQ	RADIOACTIVITY $^{32}\text{Al}$ ; measured $E\gamma$ , $I\gamma$ from spin aligned $^{32}\text{Al}$ ; deduced isomer decay ratio, $T_{1/2}$ . Time differential perturbed angular distribution method. REPT RIKEN 2007 Annual,P17,Kameda
$^{32}\text{Si}$	2007KAZK	RADIOACTIVITY $^{32}\text{Al}(\beta^-)$ ; measured $\beta^-$ -decay asymmetry using $\beta$ -NMR technique; deduced electric quadrupole moment. Compared to other Al isotopes. REPT RIKEN 2006 Annual,Piii,Kameda
	2007TAZJ	RADIOACTIVITY $^{32}\text{Al}(\beta^-)$ ; measured isomer decay, $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. using time differential perturbed angular distribution method; deduced $T_{1/2}$ , g-factor. REPT RIKEN 2006 Annual,P13,Takase
$^{32}\text{S}$	2008NOZZ	NUCLEAR REACTIONS $^{238}\text{U}(\alpha, \text{X})$ , E=62 MeV; $^{19}\text{F}$ , $^{25}\text{Mg}$ , $^{32}\text{S}$ , $^{34}\text{S}$ , $^{88}\text{Sr}$ , $^{103}\text{Rh}$ ; measured $E\gamma$ , $I\gamma$ ; deduced neutron clusters. Activation method, Ge detector. CONF Moscow,P74,Novatsky
	2009DE37	NUCLEAR REACTIONS $^{12}\text{C}(^{20}\text{Ne}, \text{pX})$ , $(^{20}\text{Ne}, \text{dX})$ , $(^{20}\text{Ne}, \text{tX})$ , $(^{20}\text{Ne}, \alpha\text{X})$ , E=145, 158, 170, 180, 200 MeV; $^{27}\text{Al}(^{20}\text{Ne}, \text{pX})$ , $(^{20}\text{Ne}, \text{dX})$ , $(^{20}\text{Ne}, \text{tX})$ , $(^{20}\text{Ne}, \alpha\text{X})$ , E=158 MeV; measured $\sigma(\theta, E)$ , light-charged-particle energy spectra, (charged-particle)(fragment)-coin; deduced reaction mechanism features, deformation parameters, radius. $^{32}\text{S}$ ; deduced sequential decay chain data. Comparison with the CASCADE statistical model code. JOUR ZAANE 41 39

**A=33**

- <sup>33</sup>P      2007LIZN      NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>33</sup>P, E=70 MeV; <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>36</sup>Si, E=70 MeV; <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>38</sup>Ar, E=70 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced J,  $\pi$ . REPT JAEA-Review 2007-046,P25,Liu
- 2009CH43      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, X)<sup>33</sup>P / <sup>34</sup>P / <sup>33</sup>S / <sup>34</sup>S, E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO ratios,  $\gamma(\text{lin pol})$ . <sup>33,34</sup>P, <sup>33</sup>S, <sup>34</sup>S; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, bands, branching ratios, transition probabilities. Comparison with truncated shell model calculations in the sd<sub>pf</sub> valence space. JOUR PRVCA 80 034326
- <sup>33</sup>S      2009CH43      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, X)<sup>33</sup>P / <sup>34</sup>P / <sup>33</sup>S / <sup>34</sup>S, E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO ratios,  $\gamma(\text{lin pol})$ . <sup>33,34</sup>P, <sup>33</sup>S, <sup>34</sup>S; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, bands, branching ratios, transition probabilities. Comparison with truncated shell model calculations in the sd<sub>pf</sub> valence space. JOUR PRVCA 80 034326

**A=34**

- <sup>34</sup>Mg      2009TA08      NUCLEAR REACTIONS <sup>1</sup>H(<sup>32</sup>Mg, <sup>32</sup>Mg'), E=46.5 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , scattered particle spectra,  $\sigma$ ,  $\sigma(\theta)$ . <sup>32</sup>Mg; deduced levels, J,  $\pi$ , deformation lengths, rms radii. Coupled-channel analysis of angular distribution cross sections. <sup>24,26,28,30,32,34</sup>Mg; level systematics. JOUR PRVCA 79 054319
- <sup>34</sup>P      2009BE26      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, np), E=20, 24, 25, 30, 44 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, p $\gamma$ -coin,  $\gamma(\theta)$ , DSA and half-lives. <sup>34</sup>P; deduced levels, J,  $\pi$ , multipolarities, transition strengths and configurations. Island of inversion. Comparison with shell-model calculations using a modified WBP interaction. JOUR PRVCA 80 014302
- 2009CH43      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, X)<sup>33</sup>P / <sup>34</sup>P / <sup>33</sup>S / <sup>34</sup>S, E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO ratios,  $\gamma(\text{lin pol})$ . <sup>33,34</sup>P, <sup>33</sup>S, <sup>34</sup>S; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, bands, branching ratios, transition probabilities. Comparison with truncated shell model calculations in the sd<sub>pf</sub> valence space. JOUR PRVCA 80 034326
- <sup>34</sup>S      2008NOZZ      NUCLEAR REACTIONS <sup>238</sup>U( $\alpha$ , X), E=62 MeV; <sup>19</sup>F, <sup>25</sup>Mg, <sup>32</sup>S, <sup>34</sup>S, <sup>88</sup>Sr, <sup>103</sup>Rh; measured E $\gamma$ , I $\gamma$ ; deduced neutron clusters. Activation method, Ge detector. CONF Moscow,P74,Novatsky
- 2009CH43      NUCLEAR REACTIONS <sup>18</sup>O(<sup>18</sup>O, X)<sup>33</sup>P / <sup>34</sup>P / <sup>33</sup>S / <sup>34</sup>S, E=34 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO ratios,  $\gamma(\text{lin pol})$ . <sup>33,34</sup>P, <sup>33</sup>S, <sup>34</sup>S; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, bands, branching ratios, transition probabilities. Comparison with truncated shell model calculations in the sd<sub>pf</sub> valence space. JOUR PRVCA 80 034326
- 2009ER02      RADIOACTIVITY <sup>26</sup>Si(EC), ( $\beta^+$ )[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802



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**A=34 (continued)**

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| $^{34}\text{Cl}$ | 2009ER02 | RADIOACTIVITY $^{26}\text{Si}(\text{EC}), (\beta^+)$ [from $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft. $^{10}\text{C}, ^{14}\text{O}, ^{22}\text{Mg}, ^{26m}\text{Al}, ^{26}\text{Si}, ^{34}\text{Cl}, ^{34}\text{Ar}, ^{38m}\text{K}, ^{42}\text{Sc}, ^{46}\text{V}, ^{50}\text{Mn}, ^{54}\text{Co}, ^{62}\text{Ga}, ^{74}\text{Rb}(\text{EC}), (\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802 |
|                  | 2009PA28 | NUCLEAR REACTIONS $^{34}\text{S}(^3\text{He}, \text{t})$ , E=25 MeV; measured triton spectra, $\sigma(\theta)$ . $^{34}\text{Cl}$ ; deduced levels, resonances and resonance parameters. $^{33}\text{S}(\text{p}, \gamma)$ , E not given; deduced thermonuclear reaction rates. Comparison with previous experimental data. JOUR PRVCA 80 015802   |
| $^{34}\text{Ar}$ | 2009ER02 | RADIOACTIVITY $^{26}\text{Si}(\text{EC}), (\beta^+)$ [from $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft. $^{10}\text{C}, ^{14}\text{O}, ^{22}\text{Mg}, ^{26m}\text{Al}, ^{26}\text{Si}, ^{34}\text{Cl}, ^{34}\text{Ar}, ^{38m}\text{K}, ^{42}\text{Sc}, ^{46}\text{V}, ^{50}\text{Mn}, ^{54}\text{Co}, ^{62}\text{Ga}, ^{74}\text{Rb}(\text{EC}), (\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802 |

**A=35**

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| $^{35}\text{S}$  | 2008AL39 | RADIOACTIVITY $^{35}\text{S}(\beta^-)$ ; measured internal bremsstrahlung spectrum. JOUR BRSPE 72 1556 |
| $^{35}\text{Cl}$ | 2008AL39 | RADIOACTIVITY $^{35}\text{S}(\beta^-)$ ; measured internal bremsstrahlung spectrum. JOUR BRSPE 72 1556 |
|                  | 2008SI29 | NUCLEAR MOMENTS $^{35}\text{Cl}$ ; measured nuclear quadrupole resonance spectra. JOUR ZNASE 63a 81    |

**A=36**

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| $^{36}\text{Si}$ | 2007LIZN | NUCLEAR REACTIONS $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{33}\text{P}$ , E=70 MeV; $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{36}\text{Si}$ , E=70 MeV; $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{38}\text{Ar}$ , E=70 MeV; measured $E\gamma, I\gamma, \gamma\gamma$ -coin.; deduced J, $\pi$ . REPT JAEA-Review 2007-046,P25,Liu           |
| $^{36}\text{S}$  | 2007LIZO | NUCLEAR REACTIONS $^{24}\text{Mg}(^{18}\text{O}, 2\text{p}\alpha)$ , E=70 MeV; measured $E\gamma, I\gamma, \gamma\gamma$ -coin., deduced high-spin states in $^{33}\text{P}, ^{34}\text{S}, ^{35}\text{Cl}, ^{38}\text{Ar}, ^{39}\text{K}$ . REPT CNS-REP-76,P21,Liu  |
|                  | 2008IDZZ | NUCLEAR REACTIONS $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{36}\text{S}$ , E=70 MeV; $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{36}\text{Cl}$ , E=70 MeV; measured $E\gamma, I\gamma, \gamma\gamma$ -coin., particle- $\gamma$ -coin. Analysis in progress. REPT JAEA-Review 2008-054,P25,Ideguchi   |
| $^{36}\text{Cl}$ | 2008IDZZ | NUCLEAR REACTIONS $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{36}\text{S}$ , E=70 MeV; $^{24}\text{Mg}(^{18}\text{O}, \text{x})^{36}\text{Cl}$ , E=70 MeV; measured $E\gamma, I\gamma, \gamma\gamma$ -coin., particle- $\gamma$ -coin. Analysis in progress. REPT JAEA-Review 2008-054,P25,Ideguchi   |
|                  | 2008LAZV | NUCLEAR REACTIONS $\text{Mg}(^3\text{He}, \text{X})^{26}\text{Al}, \text{Ca}(^3\text{He}, \text{X})^{36}\text{Cl}$ , E=15-36 MeV; measured $^{26}\text{Al} / ^{27}\text{Al}$ and $^{36}\text{Cl} / \text{Cl}$ ratio using accelerator mass spectrometry; deduced $\sigma$ . Compared with TALYS calculation. REPT MLL 2007 Annual,P31,Lachner |
|                  | 2009VAZY | RADIOACTIVITY $^{10}\text{Be}, ^{36}\text{Cl}, ^{60}\text{Fe}(\beta^-); ^{26}\text{Al}, ^{41}\text{Ca}, ^{59}\text{Ni}, ^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela  |
| $^{36}\text{Ar}$ | 2009VAZY | RADIOACTIVITY $^{10}\text{Be}, ^{36}\text{Cl}, ^{60}\text{Fe}(\beta^-); ^{26}\text{Al}, ^{41}\text{Ca}, ^{59}\text{Ni}, ^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela  |

**A=37**

- <sup>37</sup>Cl 2009I001 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>16</sup>O, 3p), E=70 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler shift attenuation method using GASP array. <sup>37</sup>Cl; deduced levels, J,  $\pi$ , multipolarities, B(M1), B(E2) and configurations. Comparison with large-scale shell model calculations involving sd and fp orbitals using the sdpf and SDPF-M effective interactions. JOUR PRVCA 80 034314
- <sup>37</sup>Ar 2008SA44 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>24</sup>Mg, X)<sup>48</sup>Cr / <sup>45</sup>Ti / <sup>44</sup>Sc / <sup>42</sup>Ca / <sup>41</sup>K / <sup>41</sup>Ca / <sup>39</sup>K / <sup>38</sup>Ar / <sup>37</sup>Ar, E=45.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced <sup>48</sup>Cr population mechanism, molecular resonances. JOUR IMPEE 17 2029

**A=38**

- <sup>38</sup>Cl 2008FUZV NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2008MOZV NUCLEAR REACTIONS <sup>26</sup>Mg(<sup>18</sup>O, x)<sup>38</sup>Cl, E=3.72, 5.0 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced J,  $\pi$ ; calculated E, J,  $\pi$  using shell model. REPT JAEA-Review 2008-054,P27,Morikawa
- <sup>38</sup>Ar 2007LIZN NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>33</sup>P, E=70 MeV; <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>36</sup>Si, E=70 MeV; <sup>24</sup>Mg(<sup>18</sup>O, x)<sup>38</sup>Ar, E=70 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced J,  $\pi$ . REPT JAEA-Review 2007-046,P25,Liu
- 2008SA44 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>24</sup>Mg, X)<sup>48</sup>Cr / <sup>45</sup>Ti / <sup>44</sup>Sc / <sup>42</sup>Ca / <sup>41</sup>K / <sup>41</sup>Ca / <sup>39</sup>K / <sup>38</sup>Ar / <sup>37</sup>Ar, E=45.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced <sup>48</sup>Cr population mechanism, molecular resonances. JOUR IMPEE 17 2029
- 2009ER02 RADIOACTIVITY <sup>26</sup>Si(EC), ( $\beta^+$ )[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- <sup>38</sup>K 2009ER02 RADIOACTIVITY <sup>26</sup>Si(EC), ( $\beta^+$ )[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802

**A=39**

- <sup>39</sup>K 2008ME15 NUCLEAR REACTIONS <sup>12</sup>C, <sup>40</sup>Ca, <sup>93</sup>Nb, Pb(polarized  $\gamma$ ,  $p\pi^0$ ), E=0.6-2.2 GeV bremsstrahlung; measured invariant- and missing-mass spectra,  $\eta$ -meson production  $\sigma$ ,  $\sigma(\theta)$ . Comparison with BUU transport model and other data. JOUR ZAANE 38 195

KEYNUMBERS AND KEYWORDS

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**A=39 (continued)**

2008SA44 NUCLEAR REACTIONS  $^{24}\text{Mg}(^{24}\text{Mg}, \text{X})^{48}\text{Cr}$  /  $^{45}\text{Ti}$  /  $^{44}\text{Sc}$  /  $^{42}\text{Ca}$  /  $^{41}\text{K}$  /  $^{41}\text{Ca}$  /  $^{39}\text{K}$  /  $^{38}\text{Ar}$  /  $^{37}\text{Ar}$ , E=45.7 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma^-$ , particle- $\gamma$ -coin.; deduced  $^{48}\text{Cr}$  population mechanism, molecular resonances. JOUR IMPEE 17 2029

**A=40**

$^{40}\text{K}$  2009REZZ RADIOACTIVITY  $^{40}\text{K}(\beta^-)$ ,  $^{137}\text{Cs}(\beta^-)$ ,  $^{210}\text{Pb}(\beta^-)$ ,  $^{226}\text{Ra}(\alpha)$ ,  $^{232}\text{Th}(\alpha)$ ,  $^{238}\text{U}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156, Reyes

2009SIZZ RADIOACTIVITY  $^{40}\text{K}(\beta^-)$ ,  $^{238}\text{U}(\alpha)$ ,  $^{232}\text{Th}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced soil natural activities. CONF Brazil (Nuclear Physics 2008) Proc. P153, Silveira

$^{40}\text{Ca}$  2009REZZ RADIOACTIVITY  $^{40}\text{K}(\beta^-)$ ,  $^{137}\text{Cs}(\beta^-)$ ,  $^{210}\text{Pb}(\beta^-)$ ,  $^{226}\text{Ra}(\alpha)$ ,  $^{232}\text{Th}(\alpha)$ ,  $^{238}\text{U}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156, Reyes

2009SIZZ RADIOACTIVITY  $^{40}\text{K}(\beta^-)$ ,  $^{238}\text{U}(\alpha)$ ,  $^{232}\text{Th}(\alpha)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced soil natural activities. CONF Brazil (Nuclear Physics 2008) Proc. P153, Silveira

**A=41**

$^{41}\text{Si}$  2007SOZY NUCLEAR REACTIONS  $^{48}\text{Ca}(^{12}\text{C}, \text{X})$ , E = 60 MeV / nucleon;  $^{41}\text{Si}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced level energy. REPT ATOMKI 2007 Annual, P24, Sohler

$^{41}\text{Ar}$  2008FUZY NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08, P56, Furuta

$^{41}\text{K}$  2008SA44 NUCLEAR REACTIONS  $^{24}\text{Mg}(^{24}\text{Mg}, \text{X})^{48}\text{Cr}$  /  $^{45}\text{Ti}$  /  $^{44}\text{Sc}$  /  $^{42}\text{Ca}$  /  $^{41}\text{K}$  /  $^{41}\text{Ca}$  /  $^{39}\text{K}$  /  $^{38}\text{Ar}$  /  $^{37}\text{Ar}$ , E=45.7 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma^-$ , particle- $\gamma$ -coin.; deduced  $^{48}\text{Cr}$  population mechanism, molecular resonances. JOUR IMPEE 17 2029

2009VAZY RADIOACTIVITY  $^{10}\text{Be}$ ,  $^{36}\text{Cl}$ ,  $^{60}\text{Fe}(\beta^-)$ ;  $^{26}\text{Al}$ ,  $^{41}\text{Ca}$ ,  $^{59}\text{Ni}$ ,  $^{53}\text{Mn}(\beta^+)$ ; measured  $E(\text{e})$ ,  $I(\text{e})$ ; deduced age of the crater. REPT MLL 2008 Annual, P25, Valenzuela

$^{41}\text{Ca}$  2008SA44 NUCLEAR REACTIONS  $^{24}\text{Mg}(^{24}\text{Mg}, \text{X})^{48}\text{Cr}$  /  $^{45}\text{Ti}$  /  $^{44}\text{Sc}$  /  $^{42}\text{Ca}$  /  $^{41}\text{K}$  /  $^{41}\text{Ca}$  /  $^{39}\text{K}$  /  $^{38}\text{Ar}$  /  $^{37}\text{Ar}$ , E=45.7 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma^-$ , particle- $\gamma$ -coin.; deduced  $^{48}\text{Cr}$  population mechanism, molecular resonances. JOUR IMPEE 17 2029

A=41 (*continued*)

- 2009DI04 NUCLEAR REACTIONS  $^{40}\text{Ca}(n, \gamma)$ ,  $E < 106$  keV; measured  $\sigma$ ,  $\sigma(E)$  using activation technique and accelerator mass spectrometry; deduced Maxwellian averaged cross sections. Neutrons from  $^7\text{Li}(p, n)^7\text{Be}$  reaction at  $E(p) = 1912$  keV.  $^{197}\text{Au}(n, \gamma)$ ,  $E < 106$  keV; measured  $\sigma$  and used as a standard. Comparison with previous experimental data and theoretical predictions. JOUR PRVCA 79 065805
- 2009VAZY RADIOACTIVITY  $^{10}\text{Be}$ ,  $^{36}\text{Cl}$ ,  $^{60}\text{Fe}(\beta^-)$ ;  $^{26}\text{Al}$ ,  $^{41}\text{Ca}$ ,  $^{59}\text{Ni}$ ,  $^{53}\text{Mn}(\beta^+)$ ; measured  $E(e)$ ,  $I(e)$ ; deduced age of the crater. REPT MLL 2008 Annual, P25, Valenzuela

## A=42

- $^{42}\text{P}$  2008DAZY NUCLEAR REACTIONS  $^9\text{Be}(^{48}\text{Ca}, X)$ ,  $E = 60$  MeV / nucleon;  $^{43}\text{S}$ ,  $^{42}\text{P}$ ; measured excitation energy, gyromagnetic factor; deduced  $T_{1/2}$ . CONF Cappadocia (Nuclear Physics and Astrophysics), P293, Daugas
- $^{42}\text{Ca}$  2008SA44 NUCLEAR REACTIONS  $^{24}\text{Mg}(^{24}\text{Mg}, X)^{48}\text{Cr} / ^{45}\text{Ti} / ^{44}\text{Sc} / ^{42}\text{Ca} / ^{41}\text{K} / ^{41}\text{Ca} / ^{39}\text{K} / ^{38}\text{Ar} / ^{37}\text{Ar}$ ,  $E = 45.7$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced  $^{48}\text{Cr}$  population mechanism, molecular resonances. JOUR IMPEE 17 2029
- 2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$  [from  $^{27}\text{Al}(p, 2n)^{26}\text{Si}$ ,  $E = 35$  MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009KU19 ATOMIC MASSES  $^{42}\text{Ti}$ ,  $^{42}\text{Sc}$ ,  $^{42m}\text{Sc}$ ,  $^{42}\text{Ca}$ ; measured mass differences using JYFLTRAP Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 035502
- $^{42}\text{Sc}$  2009ER02 RADIOACTIVITY  $^{26}\text{Si}(\text{EC})$ ,  $(\beta^+)$  [from  $^{27}\text{Al}(p, 2n)^{26}\text{Si}$ ,  $E = 35$  MeV]; deduced Q value and log ft.  $^{10}\text{C}$ ,  $^{14}\text{O}$ ,  $^{22}\text{Mg}$ ,  $^{26m}\text{Al}$ ,  $^{26}\text{Si}$ ,  $^{34}\text{Cl}$ ,  $^{34}\text{Ar}$ ,  $^{38m}\text{K}$ ,  $^{42}\text{Sc}$ ,  $^{46}\text{V}$ ,  $^{50}\text{Mn}$ ,  $^{54}\text{Co}$ ,  $^{62}\text{Ga}$ ,  $^{74}\text{Rb}(\text{EC})$ ,  $(\beta^+)$ ; systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009KU19 RADIOACTIVITY  $^{42}\text{Ti}(\text{EC})$ ; measured  $E\gamma$ ,  $\beta\gamma$ -coin, half-life, branching ratio, Q value from measured mass differences; deduced logft value for  $0+$  to  $0+$  superallowed  $\beta$  transition. JOUR PRVCA 80 035502
- 2009KU19 ATOMIC MASSES  $^{42}\text{Ti}$ ,  $^{42}\text{Sc}$ ,  $^{42m}\text{Sc}$ ,  $^{42}\text{Ca}$ ; measured mass differences using JYFLTRAP Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 035502
- $^{42}\text{Ti}$  2009KU19 RADIOACTIVITY  $^{42}\text{Ti}(\text{EC})$ ; measured  $E\gamma$ ,  $\beta\gamma$ -coin, half-life, branching ratio, Q value from measured mass differences; deduced logft value for  $0+$  to  $0+$  superallowed  $\beta$  transition. JOUR PRVCA 80 035502
- 2009KU19 ATOMIC MASSES  $^{42}\text{Ti}$ ,  $^{42}\text{Sc}$ ,  $^{42m}\text{Sc}$ ,  $^{42}\text{Ca}$ ; measured mass differences using JYFLTRAP Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 035502

KEYNUMBERS AND KEYWORDS

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**A=43**

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| $^{43}\text{S}$  | 2008DAZY | NUCLEAR REACTIONS $^9\text{Be}(^{48}\text{Ca}, \text{X})$ , $E=60$ MeV / nucleon; $^{43}\text{S}$ , $^{42}\text{P}$ ; measured excitation energy, gyromagnetic factor; deduced $T_{1/2}$ . CONF Cappadocia (Nuclear Physics and Astrophysics), P293, Daugas   |
|                  | 2009GA05 | RADIOACTIVITY $^{43}\text{S}(\text{IT})$ ; measured $E_\gamma$ , $I_\gamma(\theta)$ , g-factor using the time dependent perturbed angular distribution method; deduced $B(\text{E}2)$ , $B(\text{M}1)$ . JOUR PRLTA 102 092501  |
|                  | 2009RI11 | NUCLEAR REACTIONS $^9\text{Be}(^{44}\text{S}, \text{X})$ , $E=92$ MeV / nucleon; $^9\text{Be}(^{45}\text{Cl}, \text{X})$ , $E=98$ MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin and $\sigma$ using SeGA array. $^{43}\text{S}$ ; deduced levels, J, $\pi$ , rotational band and branching ratios. One-neutron knockout and fragmentation reactions. Comparison with shell-model calculations. JOUR PRVCA 80 037305 |
| $^{43}\text{Ar}$ | 2009M009 | NUCLEAR REACTIONS $^9\text{Be}(^{36}\text{S}, \text{X})$ , $E=95$ MeV; measured $E_\gamma$ , $I_\gamma$ , (particle) $\gamma$ -coin. $^{43}\text{Ar}$ ; deduced levels, J, $\pi$ . Calculated production $\sigma$ of S, Cl, Ar, K, Ca isotopes using CASCADE. JOUR PRVCA 79 037302  |
| $^{43}\text{K}$  | 2009DA05 | NUCLEAR REACTIONS $^{45}\text{Sc}(\text{p}, \text{X})^{43}\text{K} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{44}\text{Ti}$ , $E < 37$ MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the activation technique. JOUR NIMBE 267 755   |
| $^{43}\text{Sc}$ | 2009DA05 | NUCLEAR REACTIONS $^{45}\text{Sc}(\text{p}, \text{X})^{43}\text{K} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{44}\text{Ti}$ , $E < 37$ MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the activation technique. JOUR NIMBE 267 755   |
|                  | 2009KH03 | NUCLEAR REACTIONS $\text{Ti}(\text{p}, \text{x})^{48}\text{V} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{46}\text{Sc} / ^{47}\text{Sc} / ^{48}\text{Sc}$ , $E=3.9-37.8$ MeV; Measured $E_\gamma$ , $I_\gamma$ , production $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348  |
| $^{43}\text{Cr}$ | 2009BL06 | RADIOACTIVITY $^{45}\text{Fe}$ , $^{48}\text{Ni}$ , $^{54}\text{Zn}(2\text{p})$ [from $\text{Ni}(^{58}\text{Ni}, \text{X})$ ]; measured $E_p$ , $I_p$ , $\beta^+ \text{p}$ -coin for 2p decay mode; $^{59}\text{Ge}$ , $^{63}\text{Se}$ , $^{67}\text{Kr}$ deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124  |
|                  | 2009GR07 | RADIOACTIVITY $^6\text{Be}$ , $^{45}\text{Fe}(2\text{p})$ ; measured energy and angular correlation distributions. JOUR PYLBB 677 30  |

**A=44**

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| $^{44}\text{Cl}$ | 2009RI04 | NUCLEAR REACTIONS $^9\text{Be}(^{45}\text{Cl}, ^{44}\text{Cl})$ , $E=99.6$ MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , (particle) $\gamma$ -coin and parallel momentum distributions. $^{44}\text{Cl}$ ; deduced levels, J, $\pi$ , half-life, cross section. One-neutron knockout reaction. Comparison with shell model calculations. JOUR PRVCA 79 051303   |
| $^{44}\text{Ar}$ | 2009ME05 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})$ , $E=310$ MeV; $^{50}\text{Ca}$ , $^{51}\text{Sc}$ , $^{44,45,46}\text{Ar}$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced lifetime, $B(\text{E}2)$ . JOUR APOBB 40 485   |
|                  | 2009ZI01 | NUCLEAR REACTIONS $^{109}\text{Ag}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , $E=2.68$ MeV / nucleon; $^{208}\text{Pb}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , $E=3.68$ MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , (particle) $\gamma$ -coin, $\gamma$ yields. $^{44}\text{Ar}$ ; deduced levels, $B(\text{E}2)$ matrix elements, spectroscopic quadrupole moments. Comparisons with experimental data for neighboring $A=42-46$ Ar, S and Si nuclides and GCM(GOA), AMPGCM, and Shell model calculations. JOUR PRVCA 80 014317 |

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**A=44 (continued)**

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| $^{44}\text{Sc}$ | 2008SA44 | NUCLEAR REACTIONS $^{24}\text{Mg}(^{24}\text{Mg}, \text{X})^{48}\text{Cr} / ^{45}\text{Ti} / ^{44}\text{Sc} / ^{42}\text{Ca} / ^{41}\text{K} / ^{41}\text{Ca} / ^{39}\text{K} / ^{38}\text{Ar} / ^{37}\text{Ar}$ , E=45.7 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced $^{48}\text{Cr}$ population mechanism, molecular resonances. JOUR IMPEE 17 2029   |
|                  | 2009DA05 | NUCLEAR REACTIONS $^{45}\text{Sc}(\text{p}, \text{X})^{43}\text{K} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{44}\text{Ti}$ , E < 37 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the activation technique. JOUR NIMBE 267 755  |
|                  | 2009KH03 | NUCLEAR REACTIONS $\text{Ti}(\text{p}, \text{x})^{48}\text{V} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{46}\text{Sc} / ^{47}\text{Sc} / ^{48}\text{Sc}$ , E=3.9-37.8 MeV; Measured $E\gamma$ , $I\gamma$ , production $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348   |
|                  | 2009KIZY | NUCLEAR REACTIONS $\text{Mo}(\text{n}, \gamma)$ , E=0.01-200 eV; measured In; deduced $\sigma$ ; $^{186}\text{W}(\text{n}, \gamma)$ , E=thermal; $^{98}\text{Mo}(\text{n}, \gamma)$ , E=thermal; measured In relative to $^{197}\text{Au}(\text{n}, \gamma)$ ; deduced $\sigma$ , resonance integral; $^{45}\text{Sc}(\gamma, \text{n})$ , E=65 MeV; $\text{Ti}(\gamma, \text{x})^{44}\text{Sc}$ , E=65 MeV; $^{103}\text{Rh}(\gamma, 4\text{n})$ , E=65 MeV; $\text{Fe}(\gamma, \text{x})^{52}\text{Mn}$ , E=65 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , isomeric transition. Compared to other data. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P72, Kim |
| $^{44}\text{Ti}$ | 2009DA05 | NUCLEAR REACTIONS $^{45}\text{Sc}(\text{p}, \text{X})^{43}\text{K} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{44}\text{Ti}$ , E < 37 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the activation technique. JOUR NIMBE 267 755  |

**A=45**

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| $^{45}\text{Ar}$ | 2009ME05 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})$ , E=310 MeV; $^{50}\text{Ca}$ , $^{51}\text{Sc}$ , $^{44,45,46}\text{Ar}$ ; measured $E\gamma$ , $I\gamma$ ; deduced lifetime, B(E2). JOUR APOBB 40 485  |
| $^{45}\text{Ti}$ | 2008SA44 | NUCLEAR REACTIONS $^{24}\text{Mg}(^{24}\text{Mg}, \text{X})^{48}\text{Cr} / ^{45}\text{Ti} / ^{44}\text{Sc} / ^{42}\text{Ca} / ^{41}\text{K} / ^{41}\text{Ca} / ^{39}\text{K} / ^{38}\text{Ar} / ^{37}\text{Ar}$ , E=45.7 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced $^{48}\text{Cr}$ population mechanism, molecular resonances. JOUR IMPEE 17 2029   |
|                  | 2009SY02 | NUCLEAR REACTIONS $^{46}\text{Ti}(\text{p}, \text{d})$ , E=32 MeV; measured $E\gamma$ , (particle) $\gamma$ -coin; deduced level densities, $\gamma$ -ray strength function, entropy, temperature, and spin distributions using Oslo method. Comparison of measured level densities with combinatorial BCS model calculations using Nilsson orbitals, and measured $\gamma$ -ray strength functions with generalized Lorentzian model calculations. JOUR PRVCA 80 044309 |
| $^{45}\text{Fe}$ | 2009BL06 | RADIOACTIVITY $^{45}\text{Fe}$ , $^{48}\text{Ni}$ , $^{54}\text{Zn}(2\text{p})$ [from $\text{Ni}(^{58}\text{Ni}, \text{X})$ ]; measured $E\text{p}$ , $I\text{p}$ , $\beta^+$ p-coin for 2p decay mode; $^{59}\text{Ge}$ , $^{63}\text{Se}$ , $^{67}\text{Kr}$ deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124   |
|                  | 2009GR07 | NUCLEAR REACTIONS $^1\text{H}(^{10}\text{B}, \text{n})$ , E not given; $\text{Ni}(^{58}\text{Ni}, \text{X})^{45}\text{Fe}$ , E=161 MeV / nucleon; measured $E\text{p}$ , $I\text{p}$ , $E\alpha$ , $I\alpha$ , product energy and angular correlation distributions in a kinematically complete experiment. Comparison with three-body cluster model. JOUR PYLBB 677 30  |

KEYNUMBERS AND KEYWORDS

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**A=45 (continued)**

2009GR07 RADIOACTIVITY  ${}^6\text{Be}$ ,  ${}^{45}\text{Fe}(2p)$ ; measured energy and angular correlation distributions. JOUR PYLBB 677 30

**A=46**

- ${}^{46}\text{S}$  2009GA09 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{46}\text{Cl}, {}^{46}\text{S})$ , ( ${}^{48}\text{K}$ ,  ${}^{48}\text{Ar}$ ),  $E \geq 85$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , inclusive  $\sigma$ , yields, longitudinal momentum distributions;  ${}^{46}\text{S}$ ,  ${}^{48}\text{Ar}$ ; deduced level energies. Comparisons with Large-scale shell-model calculations using SDPF-NR effective interaction. JOUR PRLTA 102 182502
- ${}^{46}\text{Ar}$  2007NIZX NUCLEAR REACTIONS  ${}^9\text{Be}({}^{46}\text{Ar}, xn){}^{49,50,51}\text{Ti}$ ,  $E=2-8$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ; deduced level properties: J,  $\pi$ .  ${}^{46}\text{Ar}$  beam from fragmentation of 64 MeV / nucleon  ${}^{48}\text{Ca}$ . REPT CNS-REP-76,P23,Niikura
- 2009ME05 NUCLEAR REACTIONS  ${}^{208}\text{Pb}({}^{48}\text{Ca}, X)$ ,  $E=310$  MeV;  ${}^{50}\text{Ca}$ ,  ${}^{51}\text{Sc}$ ,  ${}^{44,45,46}\text{Ar}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced lifetime,  $B(E2)$ . JOUR APOBB 40 485
- ${}^{46}\text{Ca}$  2008VAZW NUCLEAR REACTIONS  ${}^{208}\text{Pb}({}^{48}\text{Ca}, X)$ ,  $E=310$  MeV;  ${}^{46}\text{Ca}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced lifetime,  $B(E2)$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P197,Valiente-Dobon
- ${}^{46}\text{Sc}$  2009KH03 NUCLEAR REACTIONS  $\text{Ti}(p, x){}^{48}\text{V} / {}^{43}\text{Sc} / {}^{44}\text{Sc} / {}^{46}\text{Sc} / {}^{47}\text{Sc} / {}^{48}\text{Sc}$ ,  $E=3.9-37.8$  MeV; Measured  $E\gamma$ ,  $I\gamma$ , production  $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348
- ${}^{46}\text{Ti}$  2009ER02 RADIOACTIVITY  ${}^{26}\text{Si}(\text{EC})$ , ( $\beta^+$ )[from  ${}^{27}\text{Al}(p, 2n){}^{26}\text{Si}$ ,  $E=35$  MeV]; deduced Q value and log ft.  ${}^{10}\text{C}$ ,  ${}^{14}\text{O}$ ,  ${}^{22}\text{Mg}$ ,  ${}^{26m}\text{Al}$ ,  ${}^{26}\text{Si}$ ,  ${}^{34}\text{Cl}$ ,  ${}^{34}\text{Ar}$ ,  ${}^{38m}\text{K}$ ,  ${}^{42}\text{Sc}$ ,  ${}^{46}\text{V}$ ,  ${}^{50}\text{Mn}$ ,  ${}^{54}\text{Co}$ ,  ${}^{62}\text{Ga}$ ,  ${}^{74}\text{Rb}(\text{EC})$ , ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- ${}^{46}\text{V}$  2009ER02 RADIOACTIVITY  ${}^{26}\text{Si}(\text{EC})$ , ( $\beta^+$ )[from  ${}^{27}\text{Al}(p, 2n){}^{26}\text{Si}$ ,  $E=35$  MeV]; deduced Q value and log ft.  ${}^{10}\text{C}$ ,  ${}^{14}\text{O}$ ,  ${}^{22}\text{Mg}$ ,  ${}^{26m}\text{Al}$ ,  ${}^{26}\text{Si}$ ,  ${}^{34}\text{Cl}$ ,  ${}^{34}\text{Ar}$ ,  ${}^{38m}\text{K}$ ,  ${}^{42}\text{Sc}$ ,  ${}^{46}\text{V}$ ,  ${}^{50}\text{Mn}$ ,  ${}^{54}\text{Co}$ ,  ${}^{62}\text{Ga}$ ,  ${}^{74}\text{Rb}(\text{EC})$ , ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- ${}^{46}\text{Fe}$  2009BL06 RADIOACTIVITY  ${}^{45}\text{Fe}$ ,  ${}^{48}\text{Ni}$ ,  ${}^{54}\text{Zn}(2p)$  [from  $\text{Ni}({}^{58}\text{Ni}, X)$ ]; measured  $E_p$ ,  $I_p$ ,  $\beta^+$ -p-coin for 2p decay mode;  ${}^{59}\text{Ge}$ ,  ${}^{63}\text{Se}$ ,  ${}^{67}\text{Kr}$  deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124

**A=47**

- ${}^{47}\text{Ca}$  2009MA16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{48}\text{Ca}, n{}^{47}\text{Ca})$ , ( ${}^{56}\text{Ti}$ ,  $n{}^{55}\text{Ti}$ ),  $E=450$  MeV / nucleon; measured  $\sigma$ ,  $E\gamma$ ,  $I\gamma$ , (recoil) $\gamma$ -coin after Doppler correction, momentum distributions.  ${}^{47}\text{Ca}$ ,  ${}^{55}\text{Ti}$ ; deduced J,  $\pi$ , levels. Comparison with shell-model calculations. FRS with secondary beam and MINIBALL array. JOUR PYLBB 675 22

KEYNUMBERS AND KEYWORDS

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**A=47 (continued)**

- <sup>47</sup>Sc      2009KH03      NUCLEAR REACTIONS Ti(p, x)<sup>48</sup>V / <sup>43</sup>Sc / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc, E=3.9-37.8 MeV; Measured E $\gamma$ , I $\gamma$ , production  $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc;<sup>48</sup>V;<sup>59</sup>Fe;<sup>72</sup>Zn;<sup>75</sup>Se;<sup>77</sup>Br;<sup>83</sup>Rb;<sup>85</sup>Kr;<sup>87</sup>Y;<sup>88</sup>Kr;<sup>88</sup>Zr;<sup>89</sup>Zr;<sup>91</sup>Sr;<sup>92</sup>Sr;<sup>95</sup>Zr;<sup>97</sup>Zr;<sup>99</sup>Mo;<sup>99</sup>Rh;<sup>103</sup>Ru;<sup>105</sup>Ru;<sup>105</sup>Rh;<sup>105</sup>Ag;<sup>111</sup>Ag;<sup>111</sup>In;<sup>112</sup>Ag;<sup>115</sup>Cd;<sup>117</sup>Cd;<sup>121</sup>Te;<sup>129</sup>Sb;<sup>60</sup>Co; Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891

**A=48**

- <sup>48</sup>Ar      2009GA09      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>46</sup>Cl, <sup>46</sup>S), (<sup>48</sup>K, <sup>48</sup>Ar), E  $\geq$  85 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , inclusive  $\sigma$ , yields, longitudinal momentum distributions; <sup>46</sup>S, <sup>48</sup>Ar; deduced level energies. Comparisons with Large-scale shell-model calculations using SDPF-NR effective interaction. JOUR PRLTA 102 182502
- <sup>48</sup>Ca      2008KOZV      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  $0\nu 2\beta^-$ -decay T<sub>1/2</sub> lower limits,  $2\nu 2\beta^-$ -decay T<sub>1/2</sub>. CONF Moscow,P203,Kochetov
- 2008UM05      RADIOACTIVITY <sup>48</sup>Ca( $2\beta$ ); measured half-life for neutrinoless double-beta decay. JOUR PRVCA 78 058501
- 2009KI19      RADIOACTIVITY <sup>48</sup>Ca( $2\beta^-$ ); measured energy of electrons, radioactive background; deduced T<sub>1/2</sub> for  $0\nu\beta\beta$ -decay, neutrino mass limit. CaF<sub>2</sub>(Eu) crystals. JOUR IMPEE 18 2129
- 2009KOZY      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  $0\nu 2\beta^-$ -decay T<sub>1/2</sub> lower limit,  $2\nu 2\beta^-$ -decay T<sub>1/2</sub>. CONF Cheboksary,P84,Kochetov
- 2009TA13      NUCLEAR REACTIONS <sup>12</sup>C, <sup>26</sup>Mg, <sup>28</sup>Si, <sup>48</sup>Ca, <sup>58,64</sup>Ni, <sup>208</sup>Pb(p, p'), E=295 MeV; measured E<sub>p</sub>, I<sub>p</sub>,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- <sup>48</sup>Sc      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009KH03      NUCLEAR REACTIONS Ti(p, x)<sup>48</sup>V / <sup>43</sup>Sc / <sup>44</sup>Sc / <sup>46</sup>Sc / <sup>47</sup>Sc / <sup>48</sup>Sc, E=3.9-37.8 MeV; Measured E $\gamma$ , I $\gamma$ , production  $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348
- 2009SA48      NUCLEAR REACTIONS <sup>48</sup>Ca, <sup>116</sup>Cd(p, n), <sup>48</sup>Ti, <sup>116</sup>Sn(n, p), E=300 MeV; measured  $\sigma(\theta, E)$ ; deduced GT plus IVSM strength distributions. Comparison with fp-shell model space and GXPF1A interaction. JOUR IMPEE 18 2119



KEYNUMBERS AND KEYWORDS

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**A=48 (continued)**

- 2009YA07 NUCLEAR REACTIONS  $^{48}\text{Ca}(p, n)$ ,  $^{48}\text{Ti}(n, p)$ ,  $E=300$  MeV; measured  $E_p$ ,  $I_p$ ,  $E_n$ ,  $I_n$ ; deduced  $\sigma(E, \theta)$ , Gamow-Teller strengths. Comparison with GXPF1A shell model. JOUR PRLTA 103 012503
- 2009YAZX NUCLEAR REACTIONS  $^{48}\text{Ca}(p, n)$ ,  $E=295$  MeV; measured  $E_n$ ,  $I_n$ ,  $\theta(n)$ ;  $^{48}\text{Ti}(n, p)$ ,  $E=293$  MeV; measured  $E_p$ ,  $I_p$ ,  $\theta(p)$ ; deduced  $d\sigma$ ; calculated  $d\sigma$  using DW81 code, transition strength Gamow-Teller component using multipole decomposition. CONF Tokai (Perspective in Nuc Phys), Proc.P47,Yako
- $^{48}\text{Ti}$  2008GR22 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{48}\text{Ti}$ ,  $^{58,64}\text{Ni}(d, d')$ ,  $E=37$  MeV; measured  $E_d$ ,  $I_d$ ; deduced  $\sigma(E, \theta)$ , excitation of electric giant resonances. JOUR PANUE 71 1711
- 2008KOZV 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limits,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Moscow,P203,Kochetov
- 2009KI19 RADIOACTIVITY  $^{48}\text{Ca}(2\beta^-)$ ; measured energy of electrons, radioactive background; deduced  $T_{1/2}$  for  $0\nu\beta\beta$ -decay, neutrino mass limit.  $\text{CaF}_2(\text{Eu})$  crystals. JOUR IMPEE 18 2129
- 2009KOZY 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limit,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
- 2009SC23 NUCLEAR REACTIONS  $\text{Ti}(^{20}\text{Na}, ^{20}\text{Na}')$ ,  $E=1.7$  MeV / nucleon; measured particle spectra,  $E\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin, angular correlations and  $\gamma$ -ray yield.  $^{20}\text{Na}$ ,  $^{48}\text{Ti}$ ; deduced levels,  $J$ ,  $\pi$ , mixing ratios, transition matrix elements,  $B(M1)$ ,  $B(E2)$ , and static electric quadrupole moments. 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, and with results for  $^{20}\text{F}$  mirror nucleus. JOUR PRVCA 80 044325
- 2009SC23 NUCLEAR MOMENTS  $^{20}\text{Na}$ ,  $^{48}\text{Ti}$ ; deduced static electric quadrupole moments from Coulomb excitation experiment. JOUR PRVCA 80 044325
- $^{48}\text{V}$  2009HE15 NUCLEAR REACTIONS  $\text{Ti}(d, X)^{48}\text{V}$ ,  $^{181}\text{Ta}(d, 2n)$ ,  $(d, p)$ ,  $(d, p2n)$ ,  $(d, 4np)$ ,  $(d, xn2p)$ ,  $E<45$  MeV;  $^{179}\text{Hf}$ ,  $^{180}\text{Hf}$ ; measured X-ray,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
- 2009KH03 NUCLEAR REACTIONS  $\text{Ti}(p, x)^{48}\text{V} / ^{43}\text{Sc} / ^{44}\text{Sc} / ^{46}\text{Sc} / ^{47}\text{Sc} / ^{48}\text{Sc}$ ,  $E=3.9-37.8$  MeV; Measured  $E\gamma$ ,  $I\gamma$ , production  $\sigma$ , yields using Stacked-foil activation technique. Compared results to model calculations using TALYS and ALICE-IPPE codes. JOUR ARISE 67 1348
- 2009KI01 NUCLEAR REACTIONS  $\text{Ti}(d, X)^{48}\text{V}$ ,  $E < 10$  MeV;  $\text{Fe}(d, X)^{55}\text{Co} / ^{56}\text{Co} / ^{57}\text{Co} / ^{58}\text{Co} / ^{59}\text{Fe} / ^{52}\text{Mn} / ^{54}\text{Mn}$ ,  $E < 10$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15
- 2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, F)$ ,  $E=2.5$  GeV;  $^{47}\text{Sc}$ ;  $^{48}\text{V}$ ;  $^{59}\text{Fe}$ ;  $^{72}\text{Zn}$ ;  $^{75}\text{Se}$ ;  $^{77}\text{Br}$ ;  $^{83}\text{Rb}$ ;  $^{85}\text{Kr}$ ;  $^{87}\text{Y}$ ;  $^{88}\text{Kr}$ ;  $^{88}\text{Zr}$ ;  $^{89}\text{Zr}$ ;  $^{91}\text{Sr}$ ;  $^{92}\text{Sr}$ ;  $^{95}\text{Zr}$ ;  $^{97}\text{Zr}$ ;  $^{99}\text{Mo}$ ;  $^{99}\text{Rh}$ ;  $^{103}\text{Ru}$ ;  $^{105}\text{Ru}$ ;  $^{105}\text{Rh}$ ;  $^{105}\text{Ag}$ ;  $^{111}\text{Ag}$ ;  $^{111}\text{In}$ ;  $^{112}\text{Ag}$ ;  $^{115}\text{Cd}$ ;  $^{117}\text{Cd}$ ;  $^{121}\text{Te}$ ;  $^{129}\text{Sb}$ ;  $^{60}\text{Zn}$ ; Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891

KEYNUMBERS AND KEYWORDS

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**A=48 (continued)**

- 2009SI24 NUCLEAR REACTIONS Ti(t, X)<sup>48</sup>V, E=2.74 MeV; measured E $\gamma$ , I $\gamma$ ; deduced isotope yields. JOUR RAACA 465 543
- 2010TA01 NUCLEAR REACTIONS <sup>133</sup>Cs(p, x)<sup>128</sup>Ba / <sup>129</sup>Ba / <sup>133</sup>Ba / <sup>127</sup>Cs / <sup>129</sup>Cs / <sup>132</sup>Cs / <sup>125</sup>Xe / <sup>127</sup>Xe / <sup>129</sup>Xe, Ti(p, x)<sup>48</sup>V, Al(p, x)<sup>24</sup>Na, E < 70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- <sup>48</sup>Cr 2008SA44 NUCLEAR REACTIONS <sup>24</sup>Mg(<sup>24</sup>Mg, X)<sup>48</sup>Cr / <sup>45</sup>Ti / <sup>44</sup>Sc / <sup>42</sup>Ca / <sup>41</sup>K / <sup>41</sup>Ca / <sup>39</sup>K / <sup>38</sup>Ar / <sup>37</sup>Ar, E=45.7 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, particle- $\gamma$ -coin.; deduced <sup>48</sup>Cr population mechanism, molecular resonances. JOUR IMPEE 17 2029
- <sup>48</sup>Ni 2009BL06 RADIOACTIVITY <sup>45</sup>Fe, <sup>48</sup>Ni, <sup>54</sup>Zn(2p) [from Ni(<sup>58</sup>Ni, X)]; measured Ep, Ip,  $\beta^+$ p-coin for 2p decay mode; <sup>59</sup>Ge, <sup>63</sup>Se, <sup>67</sup>Kr deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124

**A=49**

- <sup>49</sup>V 2009BR06 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ni, X)<sup>49</sup>Fe / <sup>49</sup>V / <sup>53</sup>Ni / <sup>53</sup>Mn, E not given; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. <sup>49</sup>Fe, <sup>53</sup>Ni; deduced levels, J,  $\pi$ . JOUR PRVCA 80 011306
- <sup>49</sup>Fe 2009BR06 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>56</sup>Ni, X)<sup>49</sup>Fe / <sup>49</sup>V / <sup>53</sup>Ni / <sup>53</sup>Mn, E not given; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. <sup>49</sup>Fe, <sup>53</sup>Ni; deduced levels, J,  $\pi$ . JOUR PRVCA 80 011306

**A=50**

- <sup>50</sup>Cl 2009TA05 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24 NUCLEAR REACTIONS <sup>9</sup>Be, W(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured fragment yields, production  $\sigma$  for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- <sup>50</sup>K 2009CR03 RADIOACTIVITY <sup>54</sup>Sc, <sup>50</sup>K, <sup>53</sup>Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ , isomeric transitions. JOUR APOBB 40 481
- <sup>50</sup>Ca 2008KRZW NUCLEAR REACTIONS <sup>86</sup>Kr(<sup>9</sup>Be, X), <sup>124</sup>Xe(<sup>9</sup>Be, X), E=500, 1000 MeV / nucleon; <sup>50</sup>Ca, <sup>56</sup>Ti, <sup>100</sup>Sn; measured E $\gamma$ , I $\gamma$ ; deduced angular momentum values, spectroscopic factors. CONF Cappadocia (Nuclear Physics and Astrophysics), P52, Krucken
- 2009CR03 RADIOACTIVITY <sup>54</sup>Sc, <sup>50</sup>K, <sup>53</sup>Ca( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ , isomeric transitions. JOUR APOBB 40 481
- 2009ME05 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>48</sup>Ca, X), E=310 MeV; <sup>50</sup>Ca, <sup>51</sup>Sc, <sup>44,45,46</sup>Ar; measured E $\gamma$ , I $\gamma$ ; deduced lifetime, B(E2). JOUR APOBB 40 485

KEYNUMBERS AND KEYWORDS

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**A=50 (continued)**

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|                  | 2009VA06 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, ^{50}\text{Ca})$ , ( $^{48}\text{Ca}$ , $^{51}\text{Sc}$ ), E=310 MeV; measured $E\gamma$ , $I\gamma$ , half-lives for first excited states using DSAM. $^{50}\text{Ca}$ , $^{51}\text{Sc}$ ; deduced B(E2). JOUR PRLTA 102 242502   |
| $^{50}\text{V}$  | 2009VE01 | NUCLEAR REACTIONS $^{51}\text{V}(\gamma, n)$ , E=25.5 MeV; $^{52}\text{Cr}(\gamma, n)$ , E=18.5, 21.0, 23.0 MeV; measured neutron emission spectra, cross sections. JOUR PANUE 72 387   |
| $^{50}\text{Cr}$ | 2009ER02 | RADIOACTIVITY $^{26}\text{Si}(\text{EC})$ , ( $\beta^+$ )[from $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft. $^{10}\text{C}$ , $^{14}\text{O}$ , $^{22}\text{Mg}$ , $^{26m}\text{Al}$ , $^{26}\text{Si}$ , $^{34}\text{Cl}$ , $^{34}\text{Ar}$ , $^{38m}\text{K}$ , $^{42}\text{Sc}$ , $^{46}\text{V}$ , $^{50}\text{Mn}$ , $^{54}\text{Co}$ , $^{62}\text{Ga}$ , $^{74}\text{Rb}(\text{EC})$ , ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802 |
| $^{50}\text{Mn}$ | 2009ER02 | RADIOACTIVITY $^{26}\text{Si}(\text{EC})$ , ( $\beta^+$ )[from $^{27}\text{Al}(\text{p}, 2\text{n})^{26}\text{Si}$ , E=35 MeV]; deduced Q value and log ft. $^{10}\text{C}$ , $^{14}\text{O}$ , $^{22}\text{Mg}$ , $^{26m}\text{Al}$ , $^{26}\text{Si}$ , $^{34}\text{Cl}$ , $^{34}\text{Ar}$ , $^{38m}\text{K}$ , $^{42}\text{Sc}$ , $^{46}\text{V}$ , $^{50}\text{Mn}$ , $^{54}\text{Co}$ , $^{62}\text{Ga}$ , $^{74}\text{Rb}(\text{EC})$ , ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802 |
|                  | 2009FU15 | NUCLEAR REACTIONS $^{50}\text{Cr}$ , $^{58}\text{Ni}$ , $^{56}\text{Fe}(^3\text{He}, \text{t})$ , E=140 MeV / nucleon; measured reaction products; deduced GT transition strengths. JOUR IMPEE 18 2134  |

**A=51**

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| $^{51}\text{Sc}$ | 2009BH02 | NUCLEAR REACTIONS $^{48}\text{Ca}(^{238}\text{U}, \text{X})^{51}\text{Sc}$ / $^{52}\text{Sc}$ / $^{53}\text{Sc}$ , E=1.31 GeV; measured $E\gamma$ , $I\gamma$ , yrast and non-yrast states; deduced levels, J, $\pi$ . Comparison with shell-model calculations using full pf space. JOUR PRVCA 79 014313   |
|                  | 2009ME05 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, \text{X})$ , E=310 MeV; $^{50}\text{Ca}$ , $^{51}\text{Sc}$ , $^{44,45,46}\text{Ar}$ ; measured $E\gamma$ , $I\gamma$ ; deduced lifetime, B(E2). JOUR APOBB 40 485   |
|                  | 2009VA06 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{48}\text{Ca}, ^{50}\text{Ca})$ , ( $^{48}\text{Ca}$ , $^{51}\text{Sc}$ ), E=310 MeV; measured $E\gamma$ , $I\gamma$ , half-lives for first excited states using DSAM. $^{50}\text{Ca}$ , $^{51}\text{Sc}$ ; deduced B(E2). JOUR PRLTA 102 242502   |
| $^{51}\text{Ti}$ | 2008FUZV | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta |
| $^{51}\text{V}$  | 2009LIZY | NUCLEAR REACTIONS $^{51}\text{V}(^8\text{Li}, ^8\text{Li})$ , E=26 MeV; $^{51}\text{V}(^6\text{He}, ^6\text{He})$ , E=15.4, 23 MeV; $^{120}\text{Sn}(^6\text{He}, ^6\text{He})$ , E=17.4, 17.1, 19.8, 20.5 MeV; measured E(particle), $\theta$ (particle), I(particle); deduced $d\sigma$ ; calculated $d\sigma$ using CDCC; $^{120}\text{Sn}(^6\text{He}, \alpha)$ , E=17.4, 17.1, 19.8, 20.5 MeV; measured $E\alpha$ , $I\alpha$ , $\theta\alpha$ ; deduced $d\sigma$ ; calculated $d\sigma$ using CDCC and Transfer-to-Continuum DWBA; $^{120}\text{Sn}(^6\text{He}, ^5\text{He})$ , E=17.4, 17.1, 19.8, 20.5 MeV; calculated $d\sigma$ . RIBRAS system. CONF Brazil (Nuclear Physics 2008) Proc. P76,Lichtenthaler      |
| $^{51}\text{Cr}$ | 2009VE01 | NUCLEAR REACTIONS $^{51}\text{V}(\gamma, n)$ , E=25.5 MeV; $^{52}\text{Cr}(\gamma, n)$ , E=18.5, 21.0, 23.0 MeV; measured neutron emission spectra, cross sections. JOUR PANUE 72 387   |

KEYNUMBERS AND KEYWORDS

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**A=51 (continued)**

<sup>51</sup>Mn      2007SZZY      NUCLEAR REACTIONS V(<sup>3</sup>He, X)<sup>51</sup>Mn / <sup>52</sup>Mn, E < 40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . REPT ATOMKI 2007 Annual,P69,Szelecsenyi

**A=52**

<sup>52</sup>Sc      2009BH02      NUCLEAR REACTIONS <sup>48</sup>Ca(<sup>238</sup>U, X)<sup>51</sup>Sc / <sup>52</sup>Sc / <sup>53</sup>Sc, E=1.31 GeV; measured E $\gamma$ , I $\gamma$ , yrast and non-yrast states; deduced levels, J,  $\pi$ . Comparison with shell-model calculations using full pf space. JOUR PRVCA 79 014313

          2009ZH23      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, X)<sup>52</sup>Ti / <sup>52</sup>Sc / <sup>55</sup>V / <sup>55</sup>Cr, E=172 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives by DSAM. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . Comparison with full fp shell-model calculations using GXPF1A, FPD6, and KB3G effective interactions. JOUR PRVCA 80 024318

          2009ZH23      RADIOACTIVITY <sup>52</sup>Sc( $\beta^-$ )[from <sup>9</sup>Be(<sup>48</sup>Ca, X), E=172 MeV]; measured E $\gamma$ , I $\gamma$  and  $\gamma\gamma$ -coin. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . JOUR PRVCA 80 024318

<sup>52</sup>Ti      2009ZH23      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, X)<sup>52</sup>Ti / <sup>52</sup>Sc / <sup>55</sup>V / <sup>55</sup>Cr, E=172 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives by DSAM. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . Comparison with full fp shell-model calculations using GXPF1A, FPD6, and KB3G effective interactions. JOUR PRVCA 80 024318

          2009ZH23      RADIOACTIVITY <sup>52</sup>Sc( $\beta^-$ )[from <sup>9</sup>Be(<sup>48</sup>Ca, X), E=172 MeV]; measured E $\gamma$ , I $\gamma$  and  $\gamma\gamma$ -coin. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . JOUR PRVCA 80 024318

<sup>52</sup>Mn      2007SZZY      NUCLEAR REACTIONS V(<sup>3</sup>He, X)<sup>51</sup>Mn / <sup>52</sup>Mn, E < 40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . REPT ATOMKI 2007 Annual,P69,Szelecsenyi

          2009KI01      NUCLEAR REACTIONS Ti(d, X)<sup>48</sup>V, E < 10 MeV; Fe(d, X)<sup>55</sup>Co / <sup>56</sup>Co / <sup>57</sup>Co / <sup>58</sup>Co / <sup>59</sup>Fe / <sup>52</sup>Mn / <sup>54</sup>Mn, E < 10 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15

          2009KIZY      NUCLEAR REACTIONS Mo(n,  $\gamma$ ), E=0.01-200 eV; measured In; deduced  $\sigma$ ; <sup>186</sup>W(n,  $\gamma$ ), E=thermal; <sup>98</sup>Mo(n,  $\gamma$ ), E=thermal; measured In relative to <sup>197</sup>Au(n,  $\gamma$ ); deduced  $\sigma$ , resonance integral; <sup>45</sup>Sc( $\gamma$ , n), E=65 MeV; Ti( $\gamma$ , x)<sup>44</sup>Sc, E=65 MeV; <sup>103</sup>Rh( $\gamma$ , 4n), E=65 MeV; Fe( $\gamma$ , x)<sup>52</sup>Mn, E=65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , isomeric transition. Compared to other data. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P72, Kim

<sup>52</sup>Ni      2009BL06      RADIOACTIVITY <sup>45</sup>Fe, <sup>48</sup>Ni, <sup>54</sup>Zn(2p) [from Ni(<sup>58</sup>Ni, X)]; measured Ep, Ip,  $\beta^+$  p-coin for 2p decay mode; <sup>59</sup>Ge, <sup>63</sup>Se, <sup>67</sup>Kr deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124

## A=53

$^{53}\text{Ar}$	2009TA05	NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
	2009TA24	NUCLEAR REACTIONS $^9\text{Be}, \text{W}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
$^{53}\text{Ca}$	2009CR03	RADIOACTIVITY $^{54}\text{Sc}$ , $^{50}\text{K}$ , $^{53}\text{Ca}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ , isomeric transitions. JOUR APOBB 40 481
$^{53}\text{Sc}$	2009BH02	NUCLEAR REACTIONS $^{48}\text{Ca}(^{238}\text{U}, \text{X})^{51}\text{Sc} / ^{52}\text{Sc} / ^{53}\text{Sc}$ , E=1.31 GeV; measured $E\gamma$ , $I\gamma$ , yrast and non-yrast states; deduced levels, $J$ , $\pi$ . Comparison with shell-model calculations using full pf space. JOUR PRVCA 79 014313
	2009CR03	RADIOACTIVITY $^{54}\text{Sc}$ , $^{50}\text{K}$ , $^{53}\text{Ca}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ , isomeric transitions. JOUR APOBB 40 481
$^{53}\text{V}$	2008LUZZ	NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , $(^{70}\text{Zn}, \text{X})$ , E=400, 460 MeV; $^{53,55,57}\text{V}$ , $^{57,59,61,63}\text{Mn}$ , $^{61,63,65}\text{Fe}$ ; measured $E\gamma$ , $I\gamma$ ; deduced $J$ , $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi
$^{53}\text{Cr}$	2009VAZY	RADIOACTIVITY $^{10}\text{Be}$ , $^{36}\text{Cl}$ , $^{60}\text{Fe}(\beta^-)$ ; $^{26}\text{Al}$ , $^{41}\text{Ca}$ , $^{59}\text{Ni}$ , $^{53}\text{Mn}(\beta^+)$ ; measured $E(e)$ , $I(e)$ ; deduced age of the crater. REPT MLL 2008 Annual, P25, Valenzuela
$^{53}\text{Mn}$	2009BR06	NUCLEAR REACTIONS $^9\text{Be}(^{56}\text{Ni}, \text{X})^{49}\text{Fe} / ^{49}\text{V} / ^{53}\text{Ni} / ^{53}\text{Mn}$ , E not given; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin. $^{49}\text{Fe}$ , $^{53}\text{Ni}$ ; deduced levels, $J$ , $\pi$ . JOUR PRVCA 80 011306
	2009VAZY	RADIOACTIVITY $^{10}\text{Be}$ , $^{36}\text{Cl}$ , $^{60}\text{Fe}(\beta^-)$ ; $^{26}\text{Al}$ , $^{41}\text{Ca}$ , $^{59}\text{Ni}$ , $^{53}\text{Mn}(\beta^+)$ ; measured $E(e)$ , $I(e)$ ; deduced age of the crater. REPT MLL 2008 Annual, P25, Valenzuela
	2009WAZZ	NUCLEAR REACTIONS $^{54}\text{Fe}(n, np)$ , E $\approx$ 13.4-14.9 MeV; $^{54}\text{Fe}(n, d)$ , E $\approx$ 13.4-14.9 MeV; $^{54}\text{Fe}(n, 2n)$ , E $\approx$ 13.4-14.9 MeV; measured $^{53}\text{Mn}$ yield using accelerator mass spectrometry; deduced $\sigma$ as the sum of all three reactions. Compared to ENDF-B / VII and other data. REPT MLL 2008 Annual, P28, Wallner
$^{53}\text{Fe}$	2009WAZZ	NUCLEAR REACTIONS $^{54}\text{Fe}(n, np)$ , E $\approx$ 13.4-14.9 MeV; $^{54}\text{Fe}(n, d)$ , E $\approx$ 13.4-14.9 MeV; $^{54}\text{Fe}(n, 2n)$ , E $\approx$ 13.4-14.9 MeV; measured $^{53}\text{Mn}$ yield using accelerator mass spectrometry; deduced $\sigma$ as the sum of all three reactions. Compared to ENDF-B / VII and other data. REPT MLL 2008 Annual, P28, Wallner
$^{53}\text{Ni}$	2009BR06	NUCLEAR REACTIONS $^9\text{Be}(^{56}\text{Ni}, \text{X})^{49}\text{Fe} / ^{49}\text{V} / ^{53}\text{Ni} / ^{53}\text{Mn}$ , E not given; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin. $^{49}\text{Fe}$ , $^{53}\text{Ni}$ ; deduced levels, $J$ , $\pi$ . JOUR PRVCA 80 011306

## A=54

<sup>54</sup> Sc	2009CR03	RADIOACTIVITY <sup>54</sup> Sc, <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured $E_\gamma$ , $I_\gamma$ ; deduced level scheme, $J\pi$ , isomeric transitions. JOUR APOBB 40 481
<sup>54</sup> Ti	2009CR03	RADIOACTIVITY <sup>54</sup> Sc, <sup>50</sup> K, <sup>53</sup> Ca( $\beta^-$ ); measured $E_\gamma$ , $I_\gamma$ ; deduced level scheme, $J\pi$ , isomeric transitions. JOUR APOBB 40 481
<sup>54</sup> Cr	2009CR02	RADIOACTIVITY <sup>61</sup> Cr( $\beta^-$ ) [from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma^-$ , $\beta\gamma$ -coin, half-life. <sup>61</sup> Mn; deduced levels, $J$ , $\pi$ . <sup>54,56,58,60,62</sup> Cr, <sup>56,58,60,62,64,66,68</sup> Fe, <sup>58,60,62,64,66,68,70</sup> Ni, <sup>57,59,61,63</sup> Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
<sup>54</sup> Mn	2008ADZX	RADIOACTIVITY <sup>54</sup> Mn; measured $T_{1/2}$ . compared with adopted value. REPT Univ Washington Annual 2008,P53,Adelberger
	2009KI01	NUCLEAR REACTIONS Ti(d, X) <sup>48</sup> V, E < 10 MeV; Fe(d, X) <sup>55</sup> Co / <sup>56</sup> Co / <sup>57</sup> Co / <sup>58</sup> Co / <sup>59</sup> Fe / <sup>52</sup> Mn / <sup>54</sup> Mn, E < 10 MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15
<sup>54</sup> Fe	2009EA02	NUCLEAR REACTIONS C( <sup>54</sup> Fe, <sup>54</sup> Fe'), ( <sup>56</sup> Fe, <sup>56</sup> Fe'), ( <sup>58</sup> Fe, <sup>58</sup> Fe), E=110 MeV / nucleon; measured $E_\gamma$ , $I_\gamma(\theta)$ , $\gamma\gamma^-$ , <sup>12</sup> C- $\gamma$ coin, precession angles. <sup>54,56,58</sup> Fe; deduced g factors. JOUR PRVCA 79 024304
	2009EA02	NUCLEAR MOMENTS <sup>54,56,58</sup> Fe; measured g factors of first 2+ states of <sup>54</sup> Fe and <sup>58</sup> Fe relative to that of the first 2+ state in <sup>56</sup> Fe using transient-field technique in Coulomb excitation in inverse kinematics. Comparison with shell-model calculations in fp model space. JOUR PRVCA 79 024304
	2009ER02	RADIOACTIVITY <sup>26</sup> Si(EC), ( $\beta^+$ ) [from <sup>27</sup> Al(p, 2n) <sup>26</sup> Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup> C, <sup>14</sup> O, <sup>22</sup> Mg, <sup>26m</sup> Al, <sup>26</sup> Si, <sup>34</sup> Cl, <sup>34</sup> Ar, <sup>38m</sup> K, <sup>42</sup> Sc, <sup>46</sup> V, <sup>50</sup> Mn, <sup>54</sup> Co, <sup>62</sup> Ga, <sup>74</sup> Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
	2009J003	NUCLEAR REACTIONS <sup>28</sup> Si( <sup>36</sup> Ar, 2p $\alpha$ ), E=136, 143, 148 MeV; measured $E_\gamma$ , $I_\gamma$ , Ep, Ip, E $\alpha$ , (particle) $\gamma^-$ , n $\gamma^-$ , p $\gamma^-$ , $\alpha\gamma^-$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , DCO. <sup>58</sup> Ni; deduced levels, $J$ , $\pi$ , multipolarity, mixing ratio, bands and configurations. <sup>57</sup> Co, <sup>54</sup> Fe; deduced levels, $J$ , $\pi$ from prompt proton and $\alpha$ emission from <sup>58</sup> Ni high-spin states. Comparison with large-scale shell model and cranked Nilsson-Strutinsky calculations. JOUR PRVCA 80 014321
<sup>54</sup> Co	2008FUZW	NUCLEAR REACTIONS <sup>54</sup> Fe( <sup>3</sup> He, t), ( <sup>3</sup> He, 3N), E=140 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin.; deduced absolute values of Gamow-Teller transition strengths B(GT). CONF Cappadocia (Nuclear Physics and Astrophysics),P3,Fujita
	2009ER02	RADIOACTIVITY <sup>26</sup> Si(EC), ( $\beta^+$ ) [from <sup>27</sup> Al(p, 2n) <sup>26</sup> Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup> C, <sup>14</sup> O, <sup>22</sup> Mg, <sup>26m</sup> Al, <sup>26</sup> Si, <sup>34</sup> Cl, <sup>34</sup> Ar, <sup>38m</sup> K, <sup>42</sup> Sc, <sup>46</sup> V, <sup>50</sup> Mn, <sup>54</sup> Co, <sup>62</sup> Ga, <sup>74</sup> Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
<sup>54</sup> Zn	2009BL06	RADIOACTIVITY <sup>45</sup> Fe, <sup>48</sup> Ni, <sup>54</sup> Zn(2p) [from Ni( <sup>58</sup> Ni, X)]; measured Ep, Ip, $\beta^+$ p-coin for 2p decay mode; <sup>59</sup> Ge, <sup>63</sup> Se, <sup>67</sup> Kr deduced as new two-proton radioactivity candidates. Reviewed sequential and direct 2p decay modes. JOUR IMPEE 18 2124

## A=55

- <sup>55</sup>K      2009TA05      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24      NUCLEAR REACTIONS <sup>9</sup>Be, W(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured fragment yields, production  $\sigma$  for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- <sup>55</sup>Ti      2009MA16      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, n<sup>47</sup>Ca), (<sup>56</sup>Ti, n<sup>55</sup>Ti), E=450 MeV / nucleon; measured  $\sigma$ , E $\gamma$ , I $\gamma$ , (recoil) $\gamma$ -coin after Doppler correction, momentum distributions. <sup>47</sup>Ca, <sup>55</sup>Ti; deduced J,  $\pi$ , levels. Comparison with shell-model calculations. FRS with secondary beam and MINIBALL array. JOUR PYLBB 675 22
- <sup>55</sup>V      2008LUZZ      NUCLEAR REACTIONS <sup>238</sup>U(<sup>64</sup>Ni, X), (<sup>70</sup>Zn, X), E=400, 460 MeV; <sup>53,55,57</sup>V, <sup>57,59,61,63</sup>Mn, <sup>61,63,65</sup>Fe; measured E $\gamma$ , I $\gamma$ ; deduced J,  $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi
- 2009ZH23      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, X)<sup>52</sup>Ti / <sup>52</sup>Sc / <sup>55</sup>V / <sup>55</sup>Cr, E=172 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives by DSAM. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . Comparison with full fp shell-model calculations using GXPF1A, FPD6, and KB3G effective interactions. JOUR PRVCA 80 024318
- <sup>55</sup>Cr      2009ZH23      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>48</sup>Ca, X)<sup>52</sup>Ti / <sup>52</sup>Sc / <sup>55</sup>V / <sup>55</sup>Cr, E=172 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives by DSAM. <sup>52</sup>Ti; deduced levels, J,  $\pi$ . Comparison with full fp shell-model calculations using GXPF1A, FPD6, and KB3G effective interactions. JOUR PRVCA 80 024318
- <sup>55</sup>Mn      2009CA22      NUCLEAR REACTIONS <sup>55</sup>Mn( $\gamma$ ,  $\gamma'$ ), E<2.8 MeV; measured E $\gamma$ , I $\gamma$  and absolute cross sections. <sup>55</sup>Mn; deduced levels, half-lives and branching ratios. Comparison with previous experimental and evaluated data. JOUR PRVCA 80 037302
- <sup>55</sup>Fe      2009MA32      NUCLEAR REACTIONS <sup>54</sup>Fe(polarized d, p), E=14 MeV; measured reaction product spectra,  $\sigma(\theta)$ , analyzing power. <sup>55</sup>Fe; deduced levels, J,  $\pi$ , spectroscopic factors. DWBA analysis. Role of cross-shell excitation discussed. Comparison with shell model. JOUR ZAANE 40 35
- <sup>55</sup>Co      2009BE22      RADIOACTIVITY <sup>55</sup>Ni( $\beta^+$ )[from <sup>9</sup>Be(<sup>58</sup>Ni, X), E=160 MeV / nucleon]; measured  $\beta$  asymmetry from spin polarized <sup>55</sup>Ni ions, deduced g-factor. JOUR PRVCA 79 064305
- 2009BE22      NUCLEAR MOMENTS <sup>55</sup>Ni; measured g-factor by  $\beta$ -NMR method; deduced magnetic moment. <sup>55</sup>Ni, <sup>55</sup>Co; comparison of measured magnetic moments with shell-model calculations in full fp shell using GXPF1 interaction. JOUR PRVCA 79 064305

KEYNUMBERS AND KEYWORDS

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**A=55 (continued)**

- 2009KI01 NUCLEAR REACTIONS Ti(d, X)<sup>48</sup>V, E < 10 MeV; Fe(d, X)<sup>55</sup>Co / <sup>56</sup>Co / <sup>57</sup>Co / <sup>58</sup>Co / <sup>59</sup>Fe / <sup>52</sup>Mn / <sup>54</sup>Mn, E < 10 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15
- <sup>55</sup>Ni 2009BE22 RADIOACTIVITY <sup>55</sup>Ni( $\beta^+$ )[from <sup>9</sup>Be(<sup>58</sup>Ni, X), E=160 MeV / nucleon]; measured  $\beta$  asymmetry from spin polarized <sup>55</sup>Ni ions, deduced g-factor. JOUR PRVCA 79 064305
- 2009BE22 NUCLEAR MOMENTS <sup>55</sup>Ni; measured g-factor by  $\beta$ -NMR method; deduced magnetic moment. <sup>55</sup>Ni, <sup>55</sup>Co; comparison of measured magnetic moments with shell-model calculations in full fp shell using GXPF1 interaction. JOUR PRVCA 79 064305

**A=56**

- <sup>56</sup>K 2009TA05 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24 NUCLEAR REACTIONS <sup>9</sup>Be, W(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured fragment yields, production  $\sigma$  for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- <sup>56</sup>Ti 2008KRZW NUCLEAR REACTIONS <sup>86</sup>Kr(<sup>9</sup>Be, X), <sup>124</sup>Xe(<sup>9</sup>Be, X), E=500, 1000 MeV / nucleon, <sup>50</sup>Ca, <sup>56</sup>Ti, <sup>100</sup>Sn; measured E $\gamma$ , I $\gamma$ ; deduced angular momentum values, spectroscopic factors. CONF Cappadocia (Nuclear Physics and Astrophysics),P52,Krucken
- <sup>56</sup>Cr 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- <sup>56</sup>Fe 2008AL35 NUCLEAR REACTIONS <sup>57</sup>Fe(<sup>3</sup>He, <sup>3</sup>He' $\gamma$ ), (<sup>3</sup>He,  $\alpha\gamma$ ), E=45 MeV; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin. Deduced level densities, thermodynamic properties. JOUR PRVCA 78 054321
- 2009BRZZ RADIOACTIVITY <sup>56</sup>Co(EC); measured E $\gamma$ , I $\gamma$ , circular polarization. Deduced electron neutrino helicity. CONF Cheboksary,P82,Brudanin
- 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- 2009EA01 NUCLEAR REACTIONS C(<sup>56</sup>Fe, <sup>56</sup>Fe'), (<sup>57</sup>Fe, <sup>57</sup>Fe'), E=2 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ( $\theta$ ),  $\gamma\gamma^-$ , <sup>12</sup>C- $\gamma$  coin, angular correlations, precession angles. <sup>56,57</sup>Fe; deduced g factors. JOUR PRVCA 79 024303



KEYNUMBERS AND KEYWORDS

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**A=56 (continued)**

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| 2009EA01         | NUCLEAR MOMENTS $^{56}\text{Fe}$ , $^{57}\text{Fe}$ ; measured g factor of first 2+ state of $^{56}\text{Fe}$ relative to that of the first 5 / 2- state in $^{57}\text{Fe}$ using transient-field technique in Coulomb excitation. JOUR PRVCA 79 024303   |
| 2009EA02         | NUCLEAR REACTIONS C( $^{54}\text{Fe}$ , $^{54}\text{Fe}'$ ), ( $^{56}\text{Fe}$ , $^{56}\text{Fe}'$ ), ( $^{58}\text{Fe}$ , $^{58}\text{Fe}$ ), E=110 MeV / nucleon; measured $E\gamma$ , $I\gamma(\theta)$ , $\gamma\gamma$ -, $^{12}\text{C}$ - $\gamma$ coin, precession angles. $^{54,56,58}\text{Fe}$ ; deduced g factors. JOUR PRVCA 79 024304 |
| 2009EA02         | NUCLEAR MOMENTS $^{54,56,58}\text{Fe}$ ; measured g factors of first 2+ states of $^{54}\text{Fe}$ and $^{58}\text{Fe}$ relative to that of the first 2+ state in $^{56}\text{Fe}$ using transient-field technique in Coulomb excitation in inverse kinematics. Comparison with shell-model calculations in fp model space. JOUR PRVCA 79 024304     |
| $^{56}\text{Co}$ | 2009BRZZ RADIOACTIVITY $^{56}\text{Co}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , circular polarization. Deduced electron neutrino helicity. CONF Cheboksary,P82,Brudanin  |
|                  | 2009FU15 NUCLEAR REACTIONS $^{50}\text{Cr}$ , $^{58}\text{Ni}$ , $^{56}\text{Fe}(^3\text{He}, \text{t})$ , E=140 MeV / nucleon; measured reaction products; deduced GT transition strengths. JOUR IMPEE 18 2134  |
|                  | 2009KI01 NUCLEAR REACTIONS Ti(d, X) $^{48}\text{V}$ , E < 10 MeV; Fe(d, X) $^{55}\text{Co}$ / $^{56}\text{Co}$ / $^{57}\text{Co}$ / $^{58}\text{Co}$ / $^{59}\text{Fe}$ / $^{52}\text{Mn}$ / $^{54}\text{Mn}$ , E < 10 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15     |

**A=57**

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| $^{57}\text{Ca}$ | 2009TA05 NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{50}\text{Cl}$ / $^{53}\text{Ar}$ / $^{55}\text{K}$ / $^{56}\text{K}$ / $^{57}\text{Ca}$ / $^{58}\text{Ca}$ / $^{59}\text{Sc}$ / $^{60}\text{Sc}$ / $^{61}\text{Sc}$ / $^{62}\text{Ti}$ / $^{63}\text{Ti}$ / $^{65}\text{V}$ / $^{66}\text{V}$ / $^{68}\text{Cr}$ / $^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501  |
|                  | 2009TA24 NUCLEAR REACTIONS $^9\text{Be}$ , W( $^{76}\text{Ge}$ , X) $^{50}\text{Cl}$ / $^{53}\text{Ar}$ / $^{55}\text{K}$ / $^{56}\text{K}$ / $^{57}\text{Ca}$ / $^{58}\text{Ca}$ / $^{59}\text{Sc}$ / $^{60}\text{Sc}$ / $^{61}\text{Sc}$ / $^{62}\text{Ti}$ / $^{63}\text{Ti}$ / $^{65}\text{V}$ / $^{66}\text{V}$ / $^{68}\text{Cr}$ / $^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609 |
| $^{57}\text{Sc}$ | 2009CR02 NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{57}\text{Sc}$ / $^{58}\text{Ti}$ / $^{59}\text{Ti}$ / $^{59}\text{V}$ / $^{60}\text{V}$ / $^{60}\text{Cr}$ / $^{61}\text{Cr}$ / $^{62}\text{Cr}$ / $^{62}\text{Mn}$ / $^{63}\text{Mn}$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320  |
| $^{57}\text{V}$  | 2008LUZZ NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , ( $^{70}\text{Zn}, \text{X}$ ), E=400, 460 MeV; $^{53,55,57}\text{V}$ , $^{57,59,61,63}\text{Mn}$ , $^{61,63,65}\text{Fe}$ ; measured $E\gamma$ , $I\gamma$ ; deduced J, $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics),P160,Lunardi   |
| $^{57}\text{Mn}$ | 2008LUZZ NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , ( $^{70}\text{Zn}, \text{X}$ ), E=400, 460 MeV; $^{53,55,57}\text{V}$ , $^{57,59,61,63}\text{Mn}$ , $^{61,63,65}\text{Fe}$ ; measured $E\gamma$ , $I\gamma$ ; deduced J, $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics),P160,Lunardi   |

## A=57 (continued)

- 2009CR02 RADIOACTIVITY  $^{61}\text{Cr}(\beta^-)$ [from  $\text{Be}(^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life.  $^{61}\text{Mn}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{54,56,58,60,62}\text{Cr}$ ,  $^{56,58,60,62,64,66,68}\text{Fe}$ ,  $^{58,60,62,64,66,68,70}\text{Ni}$ ,  $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- $^{57}\text{Fe}$  2008AL35 NUCLEAR REACTIONS  $^{57}\text{Fe}(^3\text{He}, ^3\text{He}'\gamma)$ ,  $(^3\text{He}, \alpha\gamma)$ ,  $E=45$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ , (particle) $\gamma$ -coin. Deduced level densities, thermodynamic properties. JOUR PRVCA 78 054321
- 2009EA01 NUCLEAR REACTIONS  $\text{C}(^{56}\text{Fe}, ^{56}\text{Fe}')$ ,  $(^{57}\text{Fe}, ^{57}\text{Fe}')$ ,  $E=2$  MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ ,  $\gamma\gamma$ -,  $^{12}\text{C}$ - $\gamma$  coin, angular correlations, precession angles.  $^{56,57}\text{Fe}$ ; deduced  $g$  factors. JOUR PRVCA 79 024303
- 2009EA01 NUCLEAR MOMENTS  $^{56}\text{Fe}$ ,  $^{57}\text{Fe}$ ; measured  $g$  factor of first  $2+$  state of  $^{56}\text{Fe}$  relative to that of the first  $5-$  state in  $^{57}\text{Fe}$  using transient-field technique in Coulomb excitation. JOUR PRVCA 79 024303
- 2009V002 NUCLEAR REACTIONS  $^{55}\text{Mn}(^6\text{Li}, \text{X})$ ,  $(^7\text{Li}, \text{X})$ ,  $E=15$  MeV;  $^{59}\text{Co}(d, p)$ ,  $(d, \alpha)$ ,  $E=7.5$  MeV; measured neutron and proton evaporation spectra,  $\alpha$  spectra,  $\sigma$ . Hauser-Feshbach analysis. Comparison with predictions of constant temperature, Fermi-gas, and Hartree-Fock-BCS models. JOUR PRVCA 79 031301
- $^{57}\text{Co}$  2009HU13 NUCLEAR REACTIONS  $^{58}\text{Ni}(\alpha, \alpha'p)$ ,  $E=386$  MeV; measured  $E_\alpha$ ,  $I_\alpha$ ,  $\alpha p$ -coin,  $\sigma$ ,  $\sigma(\theta)$ , and width.  $^{58}\text{Ni}$ ; deduced isoscalar giant dipole resonance (ISGDR), associated resonance parameters and branching ratios for proton decays to  $^{57}\text{Co}$ ; analyzed EWSR.  $^{57}\text{Co}$ ; deduced levels,  $J$ ,  $\pi$ . Grand Raiden spectrometer at RCNP facility. Proton branching ratios compared with continuum-RPA calculations. JOUR PRVCA 80 044317
- 2009J003 NUCLEAR REACTIONS  $^{28}\text{Si}(^{36}\text{Ar}, 2p\alpha)$ ,  $E=136, 143, 148$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $E_p$ ,  $I_p$ ,  $E_\alpha$ , (particle) $\gamma$ -,  $n\gamma$ -,  $p\gamma$ -,  $\alpha\gamma$ -,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO.  $^{58}\text{Ni}$ ; deduced levels,  $J$ ,  $\pi$ , multipolarity, mixing ratio, bands and configurations.  $^{57}\text{Co}$ ,  $^{54}\text{Fe}$ ; deduced levels,  $J$ ,  $\pi$  from prompt proton and  $\alpha$  emission from  $^{58}\text{Ni}$  high-spin states. Comparison with large-scale shell model and cranked Nilsson-Strutinsky calculations. JOUR PRVCA 80 014321
- 2009KI01 NUCLEAR REACTIONS  $\text{Ti}(d, \text{X})^{48}\text{V}$ ,  $E < 10$  MeV;  $\text{Fe}(d, \text{X})^{55}\text{Co}$  /  $^{56}\text{Co}$  /  $^{57}\text{Co}$  /  $^{58}\text{Co}$  /  $^{59}\text{Fe}$  /  $^{52}\text{Mn}$  /  $^{54}\text{Mn}$ ,  $E < 10$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15
- $^{57}\text{Ni}$  2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(n, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(n, n')$ ,  $\text{Pb}(p, xn)^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$ ,  $\text{In}(p, xn)^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(p, 3n)$ ,  $^{63}\text{Cu}(p, 2n)$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(p, 4n)$ ,  $E=0.8$  GeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{57}\text{Cu}$  2009C014 NUCLEAR MOMENTS  $^{57,59,63,65}\text{Cu}$ ; measured hyperfine spectra and parameters; deduced nuclear magnetic dipole moments. Comparison with GXPF1 shell model calculations. JOUR PRLTA 103 102501

**A=57 (continued)**

- 2009JI08 NUCLEAR REACTIONS  $^3\text{He}(^{56}\text{Ni}, d)$ ,  $E=250$  MeV; measured  $E_d$ ,  $I_d$ ,  $\sigma$ ,  $\sigma(\theta)$ .  $^{57}\text{Cu}$ ; deduced levels,  $J$ ,  $\pi$ , spectroscopic factors. DWBA analysis. Discussed implications for  $^{56}\text{Ni}(p, \gamma)^{57}\text{Cu}$  reaction of astrophysical interest. JOUR PRVCA 80 044613

**A=58**

- $^{58}\text{Ca}$  2009TA05 NUCLEAR REACTIONS  $^9\text{Be}(^{76}\text{Ge}, X)^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ ,  $E=132$  MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24 NUCLEAR REACTIONS  $^9\text{Be}, W(^{76}\text{Ge}, X)^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ ,  $E=132$  MeV / nucleon; measured fragment yields, production  $\sigma$  for  $A=33-74$ ,  $Z=13-29$  nuclides, longitudinal momentum distributions for  $Z=17-25$  nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- $^{58}\text{Ti}$  2009CR02 NUCLEAR REACTIONS  $^9\text{Be}(^{76}\text{Ge}, X)^{57}\text{Sc} / ^{58}\text{Ti} / ^{59}\text{Ti} / ^{59}\text{V} / ^{60}\text{V} / ^{60}\text{Cr} / ^{61}\text{Cr} / ^{62}\text{Cr} / ^{62}\text{Mn} / ^{63}\text{Mn}$ ,  $E=130$  MeV / nucleon; measured yields. JOUR PRVCA 79 054320
- $^{58}\text{Cr}$  2009CR02 RADIOACTIVITY  $^{61}\text{Cr}(\beta^-)$ [from  $\text{Be}(^{76}\text{Ge}, X)$ ,  $E=130$  MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life.  $^{61}\text{Mn}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{54,56,58,60,62}\text{Cr}$ ,  $^{56,58,60,62,64,66,68}\text{Fe}$ ,  $^{58,60,62,64,66,68,70}\text{Ni}$ ,  $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- $^{58}\text{Fe}$  2008FUZV NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, p)$ ,  $E=3.5-5.9$  MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, \alpha)$ ,  $E=3.5-5.9$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009CR02 RADIOACTIVITY  $^{61}\text{Cr}(\beta^-)$ [from  $\text{Be}(^{76}\text{Ge}, X)$ ,  $E=130$  MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life.  $^{61}\text{Mn}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{54,56,58,60,62}\text{Cr}$ ,  $^{56,58,60,62,64,66,68}\text{Fe}$ ,  $^{58,60,62,64,66,68,70}\text{Ni}$ ,  $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- 2009EA02 NUCLEAR REACTIONS  $\text{C}(^{54}\text{Fe}, ^{54}\text{Fe}')$ ,  $(^{56}\text{Fe}, ^{56}\text{Fe}')$ ,  $(^{58}\text{Fe}, ^{58}\text{Fe})$ ,  $E=110$  MeV / nucleon; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ ,  $\gamma\gamma^-$ ,  $^{12}\text{C}-\gamma$  coin, precession angles.  $^{54,56,58}\text{Fe}$ ; deduced  $g$  factors. JOUR PRVCA 79 024304
- 2009EA02 NUCLEAR MOMENTS  $^{54,56,58}\text{Fe}$ ; measured  $g$  factors of first  $2+$  states of  $^{54}\text{Fe}$  and  $^{58}\text{Fe}$  relative to that of the first  $2+$  state in  $^{56}\text{Fe}$  using transient-field technique in Coulomb excitation in inverse kinematics. Comparison with shell-model calculations in fp model space. JOUR PRVCA 79 024304
- $^{58}\text{Co}$  2009KI01 NUCLEAR REACTIONS  $\text{Ti}(d, X)^{48}\text{V}$ ,  $E < 10$  MeV;  $\text{Fe}(d, X)^{55}\text{Co} / ^{56}\text{Co} / ^{57}\text{Co} / ^{58}\text{Co} / ^{59}\text{Fe} / ^{52}\text{Mn} / ^{54}\text{Mn}$ ,  $E < 10$  MeV; measured  $E_\gamma$ ,  $I_\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15

## A=58 (continued)

- <sup>58</sup>Ni 2008GR22 NUCLEAR REACTIONS <sup>12</sup>C, <sup>48</sup>Ti, <sup>58,64</sup>Ni(d, d'), E=37 MeV; measured Ed, Id; deduced  $\sigma(E, \theta)$ , excitation of electric giant resonances. JOUR PANUE 71 1711
- 2009AG02 NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>6</sup>Li, <sup>6</sup>Li), E=9.9, 11.2, 12.1, 13.0, 14.0 MeV; <sup>58</sup>Ni(<sup>7</sup>Be, <sup>7</sup>Be), E=15.1, 17.1, 18.5, 19.9, 21.4 MeV; <sup>58</sup>Ni(<sup>8</sup>B, <sup>8</sup>B), E=20.7, 23.4, 25.3, 27.2, 29.3 MeV; measured  $\sigma$ , angular distributions; deduced total reaction and breakup cross section for (<sup>8</sup>B, <sup>8</sup>B) reaction, and proton halo effects for <sup>8</sup>B. Comparison with optical-model calculations. JOUR PRVCA 79 021601
- 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ ) [from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- 2009HU13 NUCLEAR REACTIONS <sup>58</sup>Ni( $\alpha$ ,  $\alpha'$ p), E=386 MeV; measured E $\alpha$ , I $\alpha$ ,  $\alpha$ p-coin,  $\sigma$ ,  $\sigma(\theta)$ , and width. <sup>58</sup>Ni; deduced isoscalar giant dipole resonance (ISGDR), associated resonance parameters and branching ratios for proton decays to <sup>57</sup>Co; analyzed EWSR. <sup>57</sup>Co; deduced levels, J,  $\pi$ . Grand Raiden spectrometer at RCNP facility. Proton branching ratios compared with continuum-RPA calculations. JOUR PRVCA 80 044317
- 2009J003 NUCLEAR REACTIONS <sup>28</sup>Si(<sup>36</sup>Ar, 2p $\alpha$ ), E=136, 143, 148 MeV; measured E $\gamma$ , I $\gamma$ , Ep, Ip, E $\alpha$ , (particle) $\gamma$ -, n $\gamma$ -, p $\gamma$ -,  $\alpha\gamma$ -,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , DCO. <sup>58</sup>Ni; deduced levels, J,  $\pi$ , multipolarity, mixing ratio, bands and configurations. <sup>57</sup>Co, <sup>54</sup>Fe; deduced levels, J,  $\pi$  from prompt proton and  $\alpha$  emission from <sup>58</sup>Ni high-spin states. Comparison with large-scale shell model and cranked Nilsson-Strutinsky calculations. JOUR PRVCA 80 014321
- 2009SH19 NUCLEAR REACTIONS <sup>58</sup>Ni, <sup>89</sup>Y, <sup>90</sup>Zr, <sup>120</sup>Sn, <sup>142</sup>Nd, <sup>166</sup>Er, <sup>208</sup>Pb(p, p'), E=200 MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305
- 2009TA13 NUCLEAR REACTIONS <sup>12</sup>C, <sup>26</sup>Mg, <sup>28</sup>Si, <sup>48</sup>Ca, <sup>58,64</sup>Ni, <sup>208</sup>Pb(p, p'), E=295 MeV; measured Ep, Ip,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- <sup>58</sup>Cu 2008AN15 NUCLEAR REACTIONS <sup>58,60,62,64</sup>Ni(p, n), E=134.3 MeV; measured neutron spectra, angular distributions,  $\sigma$ ; calculated B(GT), reaction rates. <sup>58,60,62,64</sup>Cu; deduced levels. Comparison with (n, p) reactions, shell model calculations. JOUR PRVCA 78 065803
- 2009FU15 NUCLEAR REACTIONS <sup>50</sup>Cr, <sup>58</sup>Ni, <sup>56</sup>Fe(<sup>3</sup>He, t), E=140 MeV / nucleon; measured reaction products; deduced GT transition strengths. JOUR IMPEE 18 2134
- 2009FU15 RADIOACTIVITY <sup>58</sup>Zn( $\beta^+$ ), (EC) [from Ni(<sup>64</sup>Zn, X)]; measured E $\gamma$ , I $\gamma$ ; deduced T<sub>1/2</sub>. JOUR IMPEE 18 2134

KEYNUMBERS AND KEYWORDS

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**A=58 (continued)**

- 2009SA06 NUCLEAR REACTIONS  ${}^7\text{Li}$ , C(p, n), E=297 MeV;  ${}^{58}\text{Ni}$ ,  ${}^{70}\text{Zn}$ ,  ${}^{114}\text{Cd}$ ,  ${}^{118}\text{Sn}$ ,  ${}^{120}\text{Sn}$ (p, n), E=198, 297 MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  ${}^7\text{Be}$ ,  ${}^{12}\text{N}$ ,  ${}^{13}\text{N}$ ,  ${}^{58}\text{Cu}$ ,  ${}^{70}\text{Ga}$ ,  ${}^{114}\text{In}$ ,  ${}^{118}\text{Sb}$ ,  ${}^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
- ${}^{58}\text{Zn}$  2009FU15 RADIOACTIVITY  ${}^{58}\text{Zn}(\beta^+)$ , (EC) [from Ni( ${}^{64}\text{Zn}$ , X)]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$ . JOUR IMPEE 18 2134

**A=59**

- ${}^{59}\text{Sc}$  2009TA05 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X}){}^{50}\text{Cl} / {}^{53}\text{Ar} / {}^{55}\text{K} / {}^{56}\text{K} / {}^{57}\text{Ca} / {}^{58}\text{Ca} / {}^{59}\text{Sc} / {}^{60}\text{Sc} / {}^{61}\text{Sc} / {}^{62}\text{Ti} / {}^{63}\text{Ti} / {}^{65}\text{V} / {}^{66}\text{V} / {}^{68}\text{Cr} / {}^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24 NUCLEAR REACTIONS  ${}^9\text{Be}$ , W( ${}^{76}\text{Ge}$ , X) ${}^{50}\text{Cl} / {}^{53}\text{Ar} / {}^{55}\text{K} / {}^{56}\text{K} / {}^{57}\text{Ca} / {}^{58}\text{Ca} / {}^{59}\text{Sc} / {}^{60}\text{Sc} / {}^{61}\text{Sc} / {}^{62}\text{Ti} / {}^{63}\text{Ti} / {}^{65}\text{V} / {}^{66}\text{V} / {}^{68}\text{Cr} / {}^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production  $\sigma$  for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- ${}^{59}\text{Ti}$  2009CR02 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X}){}^{57}\text{Sc} / {}^{58}\text{Ti} / {}^{59}\text{Ti} / {}^{59}\text{V} / {}^{60}\text{V} / {}^{60}\text{Cr} / {}^{61}\text{Cr} / {}^{62}\text{Cr} / {}^{62}\text{Mn} / {}^{63}\text{Mn}$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320
- ${}^{59}\text{V}$  2009CR02 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{76}\text{Ge}, \text{X}){}^{57}\text{Sc} / {}^{58}\text{Ti} / {}^{59}\text{Ti} / {}^{59}\text{V} / {}^{60}\text{V} / {}^{60}\text{Cr} / {}^{61}\text{Cr} / {}^{62}\text{Cr} / {}^{62}\text{Mn} / {}^{63}\text{Mn}$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320
- ${}^{59}\text{Mn}$  2008LUZZ NUCLEAR REACTIONS  ${}^{238}\text{U}({}^{64}\text{Ni}, \text{X})$ , ( ${}^{70}\text{Zn}$ , X), E=400, 460 MeV;  ${}^{53,55,57}\text{V}$ ,  ${}^{57,59,61,63}\text{Mn}$ ,  ${}^{61,63,65}\text{Fe}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced J,  $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi
- 2009CR02 RADIOACTIVITY  ${}^{61}\text{Cr}(\beta^-)$  [from Be( ${}^{76}\text{Ge}$ , X), E=130 MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life.  ${}^{61}\text{Mn}$ ; deduced levels, J,  $\pi$ .  ${}^{54,56,58,60,62}\text{Cr}$ ,  ${}^{56,58,60,62,64,66,68}\text{Fe}$ ,  ${}^{58,60,62,64,66,68,70}\text{Ni}$ ,  ${}^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- ${}^{59}\text{Fe}$  2009KI01 NUCLEAR REACTIONS Ti(d, X) ${}^{48}\text{V}$ , E < 10 MeV; Fe(d, X) ${}^{55}\text{Co} / {}^{56}\text{Co} / {}^{57}\text{Co} / {}^{58}\text{Co} / {}^{59}\text{Fe} / {}^{52}\text{Mn} / {}^{54}\text{Mn}$ , E < 10 MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the stacked foil activation technique. JOUR NIMBE 267 15
- 2009NA10 NUCLEAR REACTIONS  ${}^{209}\text{Bi}(\gamma, \text{F})$ , E=2.5 GeV;  ${}^{47}\text{Sc}$ ;  ${}^{48}\text{V}$ ;  ${}^{59}\text{Fe}$ ;  ${}^{72}\text{Zn}$ ;  ${}^{75}\text{Se}$ ;  ${}^{77}\text{Br}$ ;  ${}^{83}\text{Rb}$ ;  ${}^{85}\text{Kr}$ ;  ${}^{87}\text{Y}$ ;  ${}^{88}\text{Kr}$ ;  ${}^{88}\text{Zr}$ ;  ${}^{89}\text{Zr}$ ;  ${}^{91}\text{Sr}$ ;  ${}^{92}\text{Sr}$ ;  ${}^{95}\text{Zr}$ ;  ${}^{97}\text{Zr}$ ;  ${}^{99}\text{Mo}$ ;  ${}^{99}\text{Rh}$ ;  ${}^{103}\text{Ru}$ ;  ${}^{105}\text{Ru}$ ;  ${}^{105}\text{Rh}$ ;  ${}^{105}\text{Ag}$ ;  ${}^{111}\text{Ag}$ ;  ${}^{111}\text{In}$ ;  ${}^{112}\text{Ag}$ ;  ${}^{115}\text{Cd}$ ;  ${}^{117}\text{Cd}$ ;  ${}^{121}\text{Te}$ ;  ${}^{129}\text{Sb}$ ;  ${}^{60}\text{Ni}$ ; Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- ${}^{59}\text{Co}$  2008WAZW RADIOACTIVITY  ${}^{59}\text{Ni}(\text{EC})$ ; analyzed prior  $T_{1/2}$  measurement that relied on n-capture *null* for  ${}^{54}\text{Fe}$ . CONF Nice (Nucl Data for Sci and Technol) Proc, P1007

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**A=59 (continued)**

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|                  | 2009GUZY | NUCLEAR REACTIONS $^{62}\text{Ni}(p, \alpha)$ , E=23 MeV using polarized p; measured $E\alpha$ , $I\alpha$ , $\theta\alpha$ ; deduced $\sigma(\theta)$ , analyzing power, J, $\pi$ , optical model parameters. Computer code TWOFNR. REPT MLL 2008 Annual,P6,Guazzoni   |
|                  | 2009TI09 | NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(n, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(n, n')$ , $\text{Pb}(p, xn)^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ , $\text{In}(p, xn)^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(p, 3n)$ , $^{63}\text{Cu}(p, 2n)$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(p, 4n)$ , E=0.8 GeV; measured $E\gamma$ , $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48 |
|                  | 2009VAZY | RADIOACTIVITY $^{10}\text{Be}$ , $^{36}\text{Cl}$ , $^{60}\text{Fe}(\beta^-)$ ; $^{26}\text{Al}$ , $^{41}\text{Ca}$ , $^{59}\text{Ni}$ , $^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela  |
| $^{59}\text{Ni}$ | 2008WAZW | NUCLEAR REACTIONS $^{60}\text{Ni}(n, 2n)$ , E=17, 19 MeV; measured reaction fragments, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . AMS, comparison with other measurements and evaluations. CONF Nice (Nucl Data for Sci and Technol) Proc,P1007   |
|                  | 2008WAZW | RADIOACTIVITY $^{59}\text{Ni}(\text{EC})$ ; analyzed prior $T_{1/2}$ measurement that relied on n-capture <i>snuff</i> for $^{54}\text{Fe}$ . CONF Nice (Nucl Data for Sci and Technol) Proc,P1007  |
|                  | 2009DIZZ | NUCLEAR REACTIONS $^{58}\text{Ni}(n, \gamma)$ , E = low (simulation of Maxwellian distribution at kT=25 keV); measured $^{59}\text{Ni}$ yield using AMS; deduced $\sigma$ . Compared to other data. REPT MLL 2008 Annual,P29,Dillmann   |
|                  | 2009VAZY | RADIOACTIVITY $^{10}\text{Be}$ , $^{36}\text{Cl}$ , $^{60}\text{Fe}(\beta^-)$ ; $^{26}\text{Al}$ , $^{41}\text{Ca}$ , $^{59}\text{Ni}$ , $^{53}\text{Mn}(\beta^+)$ ; measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela  |
| $^{59}\text{Cu}$ | 2009C014 | NUCLEAR MOMENTS $^{57,59,63,65}\text{Cu}$ ; measured hyperfine spectra and parameters; deduced nuclear magnetic dipole moments. Comparison with GXPF1 shell model calculations. JOUR PRLTA 103 102501   |

**A=60**

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| $^{60}\text{Sc}$ | 2009TA05 | NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, X)^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501   |
|                  | 2009TA24 | NUCLEAR REACTIONS $^9\text{Be}$ , W( $^{76}\text{Ge}$ , X) $^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609 |
| $^{60}\text{V}$  | 2009CR02 | NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, X)^{57}\text{Sc} / ^{58}\text{Ti} / ^{59}\text{Ti} / ^{59}\text{V} / ^{60}\text{V} / ^{60}\text{Cr} / ^{61}\text{Cr} / ^{62}\text{Cr} / ^{62}\text{Mn} / ^{63}\text{Mn}$ , E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320   |

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A=60 (*continued*)

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| <sup>60</sup> Cr | 2009A001 | NUCLEAR REACTIONS <sup>1</sup> H( <sup>60</sup> Cr, <sup>60</sup> Cr'), E=42 MeV / nucleon; <sup>1</sup> H( <sup>62</sup> Cr, <sup>62</sup> Cr'), E=39 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ , (particle) $\gamma$ -coin. <sup>60</sup> Cr; deduced deformation length. <sup>62</sup> Cr; deduced levels, J, $\pi$ , deformation length. JOUR PRLTA 102 012502   |
|                  | 2009CR02 | RADIOACTIVITY <sup>61</sup> Cr( $\beta^-$ )[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. <sup>61</sup> Mn; deduced levels, J, $\pi$ . <sup>54,56,58,60,62</sup> Cr, <sup>56,58,60,62,64,66,68</sup> Fe, <sup>58,60,62,64,66,68,70</sup> Ni, <sup>57,59,61,63</sup> Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320  |
|                  | 2009CR02 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>76</sup> Ge, X) <sup>57</sup> Sc / <sup>58</sup> Ti / <sup>59</sup> Ti / <sup>59</sup> V / <sup>60</sup> V / <sup>60</sup> Cr / <sup>61</sup> Cr / <sup>62</sup> Cr / <sup>62</sup> Mn / <sup>63</sup> Mn, E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320   |
| <sup>60</sup> Mn | 2009F005 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>60m</sup> Mn / <sup>78m</sup> Ga / <sup>82m</sup> Ga / <sup>92m</sup> Br / <sup>95m</sup> Rb / <sup>98m</sup> Rb / <sup>92m</sup> Y / <sup>101m</sup> Y / <sup>112m</sup> Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup> Mn, <sup>78,82</sup> Ga, <sup>92</sup> Br, <sup>95,98</sup> Rb, <sup>92,101</sup> Y, <sup>112</sup> Tc; deduced levels, J, $\pi$ . <sup>66m</sup> Cu, <sup>78m</sup> Zn, <sup>88m</sup> Br, <sup>95m</sup> Kr, <sup>96m</sup> Rb, <sup>97m,100m</sup> Sr, <sup>99m</sup> Mo, <sup>121m</sup> Pd, <sup>124m</sup> Sn, <sup>125m</sup> Xe; measured E $\gamma$ and half-lives. <sup>91,92,93</sup> Y; measured E $\gamma$ . JOUR PRVCA 79 064318 |
|                  | 2009CR02 | RADIOACTIVITY <sup>61</sup> Cr( $\beta^-$ )[from Be( <sup>76</sup> Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. <sup>61</sup> Mn; deduced levels, J, $\pi$ . <sup>54,56,58,60,62</sup> Cr, <sup>56,58,60,62,64,66,68</sup> Fe, <sup>58,60,62,64,66,68,70</sup> Ni, <sup>57,59,61,63</sup> Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320  |
| <sup>60</sup> Fe | 2009RU08 | RADIOACTIVITY <sup>60</sup> Fe( $\beta^-$ ); measured E $\gamma$ , $\gamma$ ; deduced T <sub>1/2</sub> . JOUR PRLTA 103 072502  |
|                  | 2009VAZY | RADIOACTIVITY <sup>10</sup> Be, <sup>36</sup> Cl, <sup>60</sup> Fe( $\beta^-$ ); <sup>26</sup> Al, <sup>41</sup> Ca, <sup>59</sup> Ni, <sup>53</sup> Mn( $\beta^+$ ); measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela   |
|                  | 2009G06  | NUCLEAR REACTIONS <sup>58</sup> Fe( <sup>6</sup> Li, X), E=15 MeV; <sup>57</sup> Fe( <sup>7</sup> Li, X), E=15 MeV; measured particle spectra, $\sigma$ , angular distributions; deduced optical model parameters. <sup>60</sup> Co, <sup>63</sup> Ni; deduced level densities. Comparison with Hauser-Feshbach model calculations. JOUR PRVCA 80 034305  |
| <sup>60</sup> Co | 2009RU08 | RADIOACTIVITY <sup>60</sup> Fe( $\beta^-$ ); measured E $\gamma$ , $\gamma$ ; deduced T <sub>1/2</sub> . JOUR PRLTA 103 072502  |
|                  | 2009TI09 | NUCLEAR REACTIONS <sup>59</sup> Co, <sup>197</sup> Au, <sup>181</sup> Ta, <sup>64</sup> Zn(n, $\gamma$ ), <sup>59</sup> Co, <sup>27</sup> Al, <sup>181</sup> Ta, <sup>115</sup> In, <sup>64</sup> Zn, <sup>65</sup> Cu, <sup>115</sup> In(n, n'), Pb(p, xn) <sup>203</sup> Bi / <sup>204</sup> Bi / <sup>205</sup> Bi / <sup>206</sup> Bi, In(p, xn) <sup>113</sup> Sn, <sup>59</sup> Co, <sup>209</sup> Bi(p, 3n), <sup>63</sup> Cu(p, 2n), <sup>209</sup> Bi, <sup>169</sup> Tm, <sup>93</sup> Nb, <sup>65</sup> Cu(p, 4n), E=0.8 GeV; measured E $\gamma$ , I $\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48  |
|                  | 2009VAZY | RADIOACTIVITY <sup>10</sup> Be, <sup>36</sup> Cl, <sup>60</sup> Fe( $\beta^-$ ); <sup>26</sup> Al, <sup>41</sup> Ca, <sup>59</sup> Ni, <sup>53</sup> Mn( $\beta^+$ ); measured E(e), I(e); deduced age of the crater. REPT MLL 2008 Annual,P25,Valenzuela   |
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KEYNUMBERS AND KEYWORDS

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**A=60 (continued)**

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|                  | 2009V002 | NUCLEAR REACTIONS $^{55}\text{Mn}(^6\text{Li}, \text{X})$ , $(^7\text{Li}, \text{X})$ , $E=15$ MeV; $^{59}\text{Co}(\text{d}, \text{p})$ , $(\text{d}, \alpha)$ , $E=7.5$ MeV; measured neutron and proton evaporation spectra, $\alpha$ spectra, $\sigma$ . Hauser-Feshbach analysis. Comparison with predictions of constant temperature, Fermi-gas, and Hartree-Fock-BCS models. JOUR PRVCA 79 031301  |
| $^{60}\text{Ni}$ | 2008T015 | NUCLEAR REACTIONS $^{28}\text{Si}(^{36}\text{Ar}, 4\text{p})$ , $E=134, 143, 148$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{60}\text{Ni}$ ; deduced levels, $J$ , $\pi$ , multipolarity, mixing ratios, $B(\text{M}1)$ , $B(\text{E}2)$ . Comparison with cranked Nilsson Strutinsky calculations. JOUR PRVCA 78 054318   |
|                  | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , $E=130$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, $J$ , $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320 |
| $^{60}\text{Cu}$ | 2008AN15 | NUCLEAR REACTIONS $^{58,60,62,64}\text{Ni}(\text{p}, \text{n})$ , $E=134.3$ MeV; measured neutron spectra, angular distributions, $\sigma$ ; calculated $B(\text{GT})$ , reaction rates. $^{58,60,62,64}\text{Cu}$ ; deduced levels. Comparison with $(\text{n}, \text{p})$ reactions, shell model calculations. JOUR PRVCA 78 065803   |

**A=61**

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| $^{61}\text{Sc}$ | 2009TA05 | NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , $E=132$ MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501   |
|                  | 2009TA24 | NUCLEAR REACTIONS $^9\text{Be}, \text{W}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , $E=132$ MeV / nucleon; measured fragment yields, production $\sigma$ for $A=33-74$ , $Z=13-29$ nuclides, longitudinal momentum distributions for $Z=17-25$ nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609 |
| $^{61}\text{Cr}$ | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , $E=130$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, $J$ , $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320   |
|                  | 2009CR02 | NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{57}\text{Sc} / ^{58}\text{Ti} / ^{59}\text{Ti} / ^{59}\text{V} / ^{60}\text{V} / ^{60}\text{Cr} / ^{61}\text{Cr} / ^{62}\text{Cr} / ^{62}\text{Mn} / ^{63}\text{Mn}$ , $E=130$ MeV / nucleon; measured yields. JOUR PRVCA 79 054320   |
| $^{61}\text{Mn}$ | 2008LUZZ | NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , $(^{70}\text{Zn}, \text{X})$ , $E=400, 460$ MeV; $^{53,55,57}\text{V}$ , $^{57,59,61,63}\text{Mn}$ , $^{61,63,65}\text{Fe}$ ; measured $E\gamma$ , $I\gamma$ ; deduced $J$ , $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi  |
|                  | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , $E=130$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, $J$ , $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320   |



KEYNUMBERS AND KEYWORDS

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**A=61 (continued)**

$^{61}\text{Fe}$	2008LUZZ	NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , ( $^{70}\text{Zn}, \text{X}$ ), E=400, 460 MeV; $^{53,55,57}\text{V}$ , $^{57,59,61,63}\text{Mn}$ , $^{61,63,65}\text{Fe}$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ ; deduced J, $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi
$^{61}\text{Co}$	2008FUZV	NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08, P56, Furuta
	2009PA16	RADIOACTIVITY $^{65,65m}\text{Fe}$ , $^{65}\text{Co}$ , $^{67}\text{Fe}(\beta^-)$ [from $^{238}\text{U}(\text{p}, \text{F})$ , E=30 MeV]; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. $^{65}\text{Co}$ , $^{65}\text{Ni}$ , $^{67}\text{Co}$ ; deduced levels, J, $\pi$ , configurations. $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309
$^{61}\text{Ni}$	2008FUZV	NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08, P56, Furuta
$^{61}\text{Cu}$	2008ANZZ	NUCLEAR REACTIONS $^{28}\text{Si}(^{36}\text{Ar}, \text{X})$ , E=142, 143, 148 MeV; $^{61}\text{Cu}$ , $^{61}\text{Zn}$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ , $\gamma\gamma\gamma$ -coin.; deduced level scheme, energies, J, $\pi$ . Cranked Nilsson-Strutinsky calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P211, Andersson
$^{61}\text{Zn}$	2008ANZZ	NUCLEAR REACTIONS $^{28}\text{Si}(^{36}\text{Ar}, \text{X})$ , E=142, 143, 148 MeV; $^{61}\text{Cu}$ , $^{61}\text{Zn}$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ , $\gamma\gamma\gamma$ -coin.; deduced level scheme, energies, J, $\pi$ . Cranked Nilsson-Strutinsky calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P211, Andersson
	2009AN01	NUCLEAR REACTIONS $^{36}\text{Ar}(^{28}\text{Si}, \text{n}2\text{p})$ , E=142, 148 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -coin, neutron and particle spectra. $^{61}\text{Zn}$ ; deduced levels, J, $\pi$ , multipolarity, bands. Comparison with Cranked Nilsson-Strutinsky calculations. JOUR PRVCA 79 024312

**A=62**

$^{62}\text{Ti}$	2009TA05	NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})$ $^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
	2009TA24	NUCLEAR REACTIONS $^9\text{Be}, \text{W}(^{76}\text{Ge}, \text{X})$ $^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609

## A=62 (continued)

- <sup>62</sup>Cr 2009A001 NUCLEAR REACTIONS <sup>1</sup>H(<sup>60</sup>Cr, <sup>60</sup>Cr'), E=42 MeV / nucleon; <sup>1</sup>H(<sup>62</sup>Cr, <sup>62</sup>Cr'), E=39 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ , (particle) $\gamma$ -coin. <sup>60</sup>Cr; deduced deformation length. <sup>62</sup>Cr; deduced levels, J,  $\pi$ , deformation length. JOUR PRLTA 102 012502
- 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- 2009CR02 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>57</sup>Sc / <sup>58</sup>Ti / <sup>59</sup>Ti / <sup>59</sup>V / <sup>60</sup>V / <sup>60</sup>Cr / <sup>61</sup>Cr / <sup>62</sup>Cr / <sup>62</sup>Mn / <sup>63</sup>Mn, E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320
- <sup>62</sup>Mn 2009CR02 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>57</sup>Sc / <sup>58</sup>Ti / <sup>59</sup>Ti / <sup>59</sup>V / <sup>60</sup>V / <sup>60</sup>Cr / <sup>61</sup>Cr / <sup>62</sup>Cr / <sup>62</sup>Mn / <sup>63</sup>Mn, E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320
- <sup>62</sup>Fe 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- <sup>62</sup>Co 2008FUZV NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- <sup>62</sup>Ni 2009CR02 RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- <sup>62</sup>Cu 2008AN15 NUCLEAR REACTIONS <sup>58,60,62,64</sup>Ni(p, n), E=134.3 MeV; measured neutron spectra, angular distributions,  $\sigma$ ; calculated B(GT), reaction rates. <sup>58,60,62,64</sup>Cu; deduced levels. Comparison with (n, p) reactions, shell model calculations. JOUR PRVCA 78 065803
- <sup>62</sup>Zn 2009ER02 RADIOACTIVITY <sup>26</sup>Si(EC), ( $\beta^+$ )[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802
- 2009SI22 NUCLEAR REACTIONS Cu(p, X)<sup>62</sup>Zn / <sup>63</sup>Zn / <sup>65</sup>Zn, E=7-16.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with the IAEA Charged particle cross section database for medical radioisotope production. JOUR ARISE 67 2037
- 2009TI09 NUCLEAR REACTIONS <sup>59</sup>Co, <sup>197</sup>Au, <sup>181</sup>Ta, <sup>64</sup>Zn(n,  $\gamma$ ), <sup>59</sup>Co, <sup>27</sup>Al, <sup>181</sup>Ta, <sup>115</sup>In, <sup>64</sup>Zn, <sup>65</sup>Cu, <sup>115</sup>In(n, n'), Pb(p, xn)<sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi, In(p, xn)<sup>113</sup>Sn, <sup>59</sup>Co, <sup>209</sup>Bi(p, 3n), <sup>63</sup>Cu(p, 2n), <sup>209</sup>Bi, <sup>169</sup>Tm, <sup>93</sup>Nb, <sup>65</sup>Cu(p, 4n), E=0.8 GeV; measured E $\gamma$ , I $\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48

KEYNUMBERS AND KEYWORDS

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**A=62 (continued)**

<sup>62</sup>Ga      2009ER02      RADIOACTIVITY <sup>26</sup>Si(EC), ( $\beta^+$ )[from <sup>27</sup>Al(p, 2n)<sup>26</sup>Si, E=35 MeV]; deduced Q value and log ft. <sup>10</sup>C, <sup>14</sup>O, <sup>22</sup>Mg, <sup>26m</sup>Al, <sup>26</sup>Si, <sup>34</sup>Cl, <sup>34</sup>Ar, <sup>38m</sup>K, <sup>42</sup>Sc, <sup>46</sup>V, <sup>50</sup>Mn, <sup>54</sup>Co, <sup>62</sup>Ga, <sup>74</sup>Rb(EC), ( $\beta^+$ ); systematics of ft values for superallowed transitions. JOUR PRVCA 79 032802

**A=63**

<sup>63</sup>Ti      2009TA05      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501

2009TA24      NUCLEAR REACTIONS <sup>9</sup>Be, W(<sup>76</sup>Ge, X)<sup>50</sup>Cl / <sup>53</sup>Ar / <sup>55</sup>K / <sup>56</sup>K / <sup>57</sup>Ca / <sup>58</sup>Ca / <sup>59</sup>Sc / <sup>60</sup>Sc / <sup>61</sup>Sc / <sup>62</sup>Ti / <sup>63</sup>Ti / <sup>65</sup>V / <sup>66</sup>V / <sup>68</sup>Cr / <sup>70</sup>Mn, E=132 MeV / nucleon; measured fragment yields, production  $\sigma$  for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609

<sup>63</sup>Mn      2008LUZZ      NUCLEAR REACTIONS <sup>238</sup>U(<sup>64</sup>Ni, X), (<sup>70</sup>Zn, X), E=400, 460 MeV; <sup>53,55,57</sup>V, <sup>57,59,61,63</sup>Mn, <sup>61,63,65</sup>Fe; measured E $\gamma$ , I $\gamma$ ; deduced J,  $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi

2009CR02      RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ )[from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320

2009CR02      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>76</sup>Ge, X)<sup>57</sup>Sc / <sup>58</sup>Ti / <sup>59</sup>Ti / <sup>59</sup>V / <sup>60</sup>V / <sup>60</sup>Cr / <sup>61</sup>Cr / <sup>62</sup>Cr / <sup>62</sup>Mn / <sup>63</sup>Mn, E=130 MeV / nucleon; measured yields. JOUR PRVCA 79 054320

2009MA22      RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ , T<sub>1/2</sub>, B(M1). JOUR APOBB 40 477

<sup>63</sup>Fe      2008LUZZ      NUCLEAR REACTIONS <sup>238</sup>U(<sup>64</sup>Ni, X), (<sup>70</sup>Zn, X), E=400, 460 MeV; <sup>53,55,57</sup>V, <sup>57,59,61,63</sup>Mn, <sup>61,63,65</sup>Fe; measured E $\gamma$ , I $\gamma$ ; deduced J,  $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi

2009MA22      RADIOACTIVITY <sup>63</sup>Mn( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ , T<sub>1/2</sub>, B(M1). JOUR APOBB 40 477

<sup>63</sup>Co      2009PA16      RADIOACTIVITY <sup>65,65m</sup>Fe, <sup>65</sup>Co, <sup>67</sup>Fe( $\beta^-$ )[from <sup>238</sup>U(p, F), E=30 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma$ -coin, half-lives. <sup>65</sup>Co, <sup>65</sup>Ni, <sup>67</sup>Co; deduced levels, J,  $\pi$ , configurations. <sup>61,63,65</sup>Co; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309

<sup>63</sup>Ni      2007TSZY      NUCLEAR REACTIONS <sup>2</sup>H(<sup>62</sup>Ni, p), E=3.5 MeV / nucleon; measured E<sub>p</sub>, I<sub>p</sub>,  $\theta(p)$ ; deduced  $\sigma$ ; calculated spectroscopic factor. Experimental value still to be deduced. REPT JAEA-Review 2007-046, P49, Tshoo

KEYNUMBERS AND KEYWORDS

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**A=63 (continued)**

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|                  | 2008DIZX | NUCLEAR REACTIONS $^{62}\text{Ni}(n, \gamma)$ , E=low; measured $I_\gamma$ , $E_\gamma$ using activation method plus accelerator mass spectrometry; deduced $\sigma$ . Compared with older data. REPT MLL 2007 Annual,P27,Dillmann  |
|                  | 20090G06 | NUCLEAR REACTIONS $^{58}\text{Fe}(^6\text{Li}, X)$ , E=15 MeV; $^{57}\text{Fe}(^7\text{Li}, X)$ , E=15 MeV; measured particle spectra, $\sigma$ , angular distributions; deduced optical model parameters. $^{60}\text{Co}$ , $^{63}\text{Ni}$ ; deduced level densities. Comparison with Hauser-Feshbach model calculations. JOUR PRVCA 80 034305                              |
| $^{63}\text{Cu}$ | 2008SH24 | NUCLEAR REACTIONS $^{63}\text{Cu}(^{16}\text{O}, ^{16}\text{O})$ , E=30.0-48.0 MeV; measured $\sigma$ , angular distributions; deduced experimental barrier distributions. Comparison with coupled channel calculations. JOUR PRVCA 78 064610   |
|                  | 2009C014 | NUCLEAR MOMENTS $^{57,59,63,65}\text{Cu}$ ; measured hyperfine spectra and parameters; deduced nuclear magnetic dipole moments. Comparison with GXPF1 shell model calculations. JOUR PRLTA 103 102501   |
| $^{63}\text{Zn}$ | 2009BE16 | NUCLEAR REACTIONS $^{27}\text{Al}(d, p)$ , $(d, 2p)$ , $(d, p\alpha)$ , E=3.38-20.18 MeV; $^{63}\text{Cu}(d, 2n)$ , E=4-20 MeV; measured excitation functions. $^{27}\text{Al}(d, n)$ , $(d, 2n)$ , $(d, \alpha)$ , E<25 MeV; comparison of cross section data. Comparison with calculations from TALYS and ACSELAM computer codes, and experimental data. JOUR PRVCA 79 044610 |
|                  | 2009LEZY | NUCLEAR REACTIONS $^{64}\text{Zn}(d, t)$ , E=22 MeV; measured $E_t$ , $I_t$ , $\theta(t)$ with polarized d; deduced J, $\pi$ , $\sigma(\theta)$ , analyzing powers. REPT MLL 2008 Annual,P7,Leach   |
|                  | 2009SI22 | NUCLEAR REACTIONS $\text{Cu}(p, X)^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=7-16.5 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Comparison with the IAEA Charged particle cross section database for medical radioisotope production. JOUR ARISE 67 2037  |

**A=64**

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| $^{64}\text{Fe}$ | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, X)$ , E=130 MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma^-$ , $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, J, $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320   |
| $^{64}\text{Ni}$ | 2008FA12 | RADIOACTIVITY $^{64}\text{Cu}(\beta^+)$ , $(\beta^-)$ ; measured half-life, temperature dependence. JOUR PRVCA 78 057301   |
|                  | 2008FUZV | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(n, p)$ , E=3.5-5.9 MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(n, \alpha)$ , E=3.5-5.9 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta |
|                  | 2008GR22 | NUCLEAR REACTIONS $^{12}\text{C}$ , $^{48}\text{Ti}$ , $^{58,64}\text{Ni}(d, d')$ , E=37 MeV; measured $E_d$ , $I_d$ ; deduced $\sigma(E, \theta)$ , excitation of electric giant resonances. JOUR PANUE 71 1711   |

A=64 (*continued*)

- 2009BE27 RADIOACTIVITY  $^{64}\text{Zn}(2\text{EC})$ ,  $(\beta^+\text{EC})$ ;  $^{70}\text{Zn}$ ,  $^{186}\text{W}(2\beta^-)$ ;  $^{180}\text{W}(2\text{EC})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes.  $\text{ZnWO}_4$  crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
- 2009CR02 RADIOACTIVITY  $^{61}\text{Cr}(\beta^-)$ [from  $\text{Be}(^{76}\text{Ge}, \text{X})$ ,  $E=130$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life.  $^{61}\text{Mn}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{54,56,58,60,62}\text{Cr}$ ,  $^{56,58,60,62,64,66,68}\text{Fe}$ ,  $^{58,60,62,64,66,68,70}\text{Ni}$ ,  $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- 2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009TA13 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{26}\text{Mg}$ ,  $^{28}\text{Si}$ ,  $^{48}\text{Ca}$ ,  $^{58,64}\text{Ni}$ ,  $^{208}\text{Pb}(p, p')$ ,  $E=295$  MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- $^{64}\text{Cu}$  2008AN15 NUCLEAR REACTIONS  $^{58,60,62,64}\text{Ni}(p, n)$ ,  $E=134.3$  MeV; measured neutron spectra, angular distributions,  $\sigma$ ; calculated B(GT), reaction rates.  $^{58,60,62,64}\text{Cu}$ ; deduced levels. Comparison with (n, p) reactions, shell model calculations. JOUR PRVCA 78 065803
- 2008FA12 RADIOACTIVITY  $^{64}\text{Cu}(\beta^+)$ ,  $(\beta^-)$ ; measured half-life, temperature dependence. JOUR PRVCA 78 057301
- 2008FUZV NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, p)$ ,  $E=3.5-5.9$  MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(n, \alpha)$ ,  $E=3.5-5.9$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009DA04 NUCLEAR REACTIONS  $^{64}\text{Ni}(d, 2n)$ ,  $(d, p)$ ,  $E < 20.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function using the stacked foil activation technique. JOUR ARISE 67 506
- 2009HI08 NUCLEAR REACTIONS  $^{64}\text{Zn}(t, ^3\text{He})$ ,  $E=115$  MeV / nucleon; measured particle spectra,  $\sigma(\theta)$  and Gamow-Teller strength distributions; deduced electron capture rate on  $^{64}\text{Zn}$  as a function of stellar temperature. Comparison with shell model calculations and experimental data from  $^{64}\text{Zn}(d, ^2\text{He})$  reaction. JOUR PRVCA 80 014313
- 2009P007 NUCLEAR REACTIONS  $^{64}\text{Ni}(^3\text{He}, t)$ ,  $E=140$  MeV / nucleon; measured triton spectra,  $\sigma$ ,  $\sigma(\theta)$ ,  $L$ .  $^{64}\text{Cu}$ ; deduced levels,  $J$ ,  $\pi$ , Gamow-Teller strengths, and Gamow-Teller Giant resonance. Comparison with Ikeda sum rule predictions. JOUR PRVCA 79 064312
- 2009RE02 NUCLEAR REACTIONS  $^{64}\text{Ni}(p, n)$ ,  $E < 24$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function using the stacked foil activation technique. Compared results to existing data and model calculations. JOUR NIMBE 267 457
- $^{64}\text{Zn}$  2008FA12 RADIOACTIVITY  $^{64}\text{Cu}(\beta^+)$ ,  $(\beta^-)$ ; measured half-life, temperature dependence. JOUR PRVCA 78 057301

KEYNUMBERS AND KEYWORDS

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**A=64 (continued)**

- 2009BE27 RADIOACTIVITY  $^{64}\text{Zn}(2\text{EC})$ ,  $(\beta^+\text{EC})$ ;  $^{70}\text{Zn}$ ,  $^{186}\text{W}(2\beta^-)$ ;  $^{180}\text{W}(2\text{EC})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes.  $\text{ZnWO}_4$  crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
- 2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(n, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(n, n')$ ,  $\text{Pb}(p, xn)^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$ ,  $\text{In}(p, xn)^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(p, 3n)$ ,  $^{63}\text{Cu}(p, 2n)$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(p, 4n)$ ,  $E=0.8$  GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{64}\text{Ge}$  2009ST04 RADIOACTIVITY  $^{80}\text{Y}$ ,  $^{81}\text{Zr}$ ,  $^{83,84}\text{Nb}$ ,  $^{84}\text{Mo}(\text{EC})$ ,  $(\beta^+)$  [from  $^9\text{Be}(^{124}\text{Xe}, X)$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life.  $^{64}\text{Ge}$ ,  $^{68}\text{Se}$ ,  $^{72}\text{Kr}$ ,  $^{76}\text{Sr}$ ,  $^{80}\text{Zr}$ ,  $^{84}\text{Mo}$ ,  $^{88}\text{Ru}$ ; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

**A=65**

- $^{65}\text{V}$  2009TA05 NUCLEAR REACTIONS  $^9\text{Be}(^{76}\text{Ge}, X)^{50}\text{Cl}$  /  $^{53}\text{Ar}$  /  $^{55}\text{K}$  /  $^{56}\text{K}$  /  $^{57}\text{Ca}$  /  $^{58}\text{Ca}$  /  $^{59}\text{Sc}$  /  $^{60}\text{Sc}$  /  $^{61}\text{Sc}$  /  $^{62}\text{Ti}$  /  $^{63}\text{Ti}$  /  $^{65}\text{V}$  /  $^{66}\text{V}$  /  $^{68}\text{Cr}$  /  $^{70}\text{Mn}$ ,  $E=132$  MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
- 2009TA24 NUCLEAR REACTIONS  $^9\text{Be}$ ,  $\text{W}(^{76}\text{Ge}, X)^{50}\text{Cl}$  /  $^{53}\text{Ar}$  /  $^{55}\text{K}$  /  $^{56}\text{K}$  /  $^{57}\text{Ca}$  /  $^{58}\text{Ca}$  /  $^{59}\text{Sc}$  /  $^{60}\text{Sc}$  /  $^{61}\text{Sc}$  /  $^{62}\text{Ti}$  /  $^{63}\text{Ti}$  /  $^{65}\text{V}$  /  $^{66}\text{V}$  /  $^{68}\text{Cr}$  /  $^{70}\text{Mn}$ ,  $E=132$  MeV / nucleon; measured fragment yields, production  $\sigma$  for  $A=33-74$ ,  $Z=13-29$  nuclides, longitudinal momentum distributions for  $Z=17-25$  nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
- $^{65}\text{Fe}$  2008LUZZ NUCLEAR REACTIONS  $^{238}\text{U}(^{64}\text{Ni}, X)$ ,  $(^{70}\text{Zn}, X)$ ,  $E=400, 460$  MeV;  $^{53,55,57}\text{V}$ ,  $^{57,59,61,63}\text{Mn}$ ,  $^{61,63,65}\text{Fe}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $J$ ,  $\pi$ , level scheme, deformation. Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics), P160, Lunardi
- 2009PA16 RADIOACTIVITY  $^{65,65m}\text{Fe}$ ,  $^{65}\text{Co}$ ,  $^{67}\text{Fe}(\beta^-)$  [from  $^{238}\text{U}(p, F)$ ,  $E=30$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives.  $^{65}\text{Co}$ ,  $^{65}\text{Ni}$ ,  $^{67}\text{Co}$ ; deduced levels,  $J$ ,  $\pi$ , configurations.  $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309
- $^{65}\text{Co}$  2009PA16 RADIOACTIVITY  $^{65,65m}\text{Fe}$ ,  $^{65}\text{Co}$ ,  $^{67}\text{Fe}(\beta^-)$  [from  $^{238}\text{U}(p, F)$ ,  $E=30$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives.  $^{65}\text{Co}$ ,  $^{65}\text{Ni}$ ,  $^{67}\text{Co}$ ; deduced levels,  $J$ ,  $\pi$ , configurations.  $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309

## A=65 (continued)

- 2009PA16 NUCLEAR REACTIONS  $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{65}\text{Co}$ ; deduced levels, J,  $\pi$ , configurations. JOUR PRVCA 79 044309
- $^{65}\text{Ni}$  2008FUZV NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009DA04 NUCLEAR REACTIONS  $^{64}\text{Ni}(\text{d}, 2\text{n})$ , (d, p), E < 20.5 MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function using the stacked foil activation technique. JOUR ARISE 67 506
- 2009PA16 RADIOACTIVITY  $^{65,65\text{m}}\text{Fe}$ ,  $^{65}\text{Co}$ ,  $^{67}\text{Fe}(\beta^-)$ [from  $^{238}\text{U}(\text{p}, \text{F})$ , E=30 MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-lives.  $^{65}\text{Co}$ ,  $^{65}\text{Ni}$ ,  $^{67}\text{Co}$ ; deduced levels, J,  $\pi$ , configurations.  $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309
- $^{65}\text{Cu}$  2009C014 NUCLEAR MOMENTS  $^{57,59,63,65}\text{Cu}$ ; measured hyperfine spectra and parameters; deduced nuclear magnetic dipole moments. Comparison with GXPF1 shell model calculations. JOUR PRLTA 103 102501
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(\text{n}, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(\text{n}, \text{n}')$ ,  $\text{Pb}(\text{p}, \text{xn})^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ ,  $\text{In}(\text{p}, \text{xn})^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(\text{p}, 3\text{n})$ ,  $^{63}\text{Cu}(\text{p}, 2\text{n})$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(\text{p}, 4\text{n})$ , E=0.8 GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{65}\text{Zn}$  2009SI22 NUCLEAR REACTIONS  $\text{Cu}(\text{p}, \text{X})^{62}\text{Zn} / ^{63}\text{Zn} / ^{65}\text{Zn}$ , E=7-16.5 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with the IAEA Charged particle cross section database for medical radioisotope production. JOUR ARISE 67 2037
- 2009SZ03 NUCLEAR REACTIONS  $^{192}\text{Os}(\text{p}, \alpha 3\text{n})$ ,  $^{186}\text{W}(\text{p}, \text{n})$ , (d, 2n),  $\text{Cu}(\text{p}, \text{X})^{65}\text{Zn}$ ,  $\text{Al}(\text{p}, \text{X})^{24}\text{Na}$ , E<66.7 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ , uncertainties. JOUR JRNCD 282 261
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(\text{n}, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(\text{n}, \text{n}')$ ,  $\text{Pb}(\text{p}, \text{xn})^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ ,  $\text{In}(\text{p}, \text{xn})^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(\text{p}, 3\text{n})$ ,  $^{63}\text{Cu}(\text{p}, 2\text{n})$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(\text{p}, 4\text{n})$ , E=0.8 GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- 2009VA05 NUCLEAR REACTIONS  $^{88}\text{Sr}(\text{p}, \text{n})$ ,  $\text{Cu}(\text{p}, \text{x})$ , E=5-20 MeV;  $^{65}\text{Zn}$ ; Measured  $\sigma$ .  $\text{SrCl}_2$  target. Ion exchange chromatographic methods. JOUR ARISE 67 1320

KEYNUMBERS AND KEYWORDS

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**A=66**

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| $^{66}\text{V}$  | 2009TA05 | NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501  |
|                  | 2009TA24 | NUCLEAR REACTIONS $^9\text{Be}, \text{W}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609   |
| $^{66}\text{Fe}$ | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, J, $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320   |
| $^{66}\text{Ni}$ | 2009CR02 | RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, J, $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320   |
| $^{66}\text{Cu}$ | 2008FUZV | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta  |
|                  | 2009F005 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{60\text{m}}\text{Mn} / ^{78\text{m}}\text{Ga} / ^{82\text{m}}\text{Ga} / ^{92\text{m}}\text{Br} / ^{95\text{m}}\text{Rb} / ^{98\text{m}}\text{Rb} / ^{92\text{m}}\text{Y} / ^{101\text{m}}\text{Y} / ^{112\text{m}}\text{Tc}$ , E=80 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. $^{60}\text{Mn}$ , $^{78,82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95,98}\text{Rb}$ , $^{92,101}\text{Y}$ , $^{112}\text{Tc}$ ; deduced levels, J, $\pi$ . $^{66\text{m}}\text{Cu}$ , $^{78\text{m}}\text{Zn}$ , $^{88\text{m}}\text{Br}$ , $^{95\text{m}}\text{Kr}$ , $^{96\text{m}}\text{Rb}$ , $^{97\text{m},100\text{m}}\text{Sr}$ , $^{99\text{m}}\text{Mo}$ , $^{121\text{m}}\text{Pd}$ , $^{124\text{m}}\text{Sn}$ , $^{125\text{m}}\text{Xe}$ ; measured $E\gamma$ and half-lives. $^{91,92,93}\text{Y}$ ; measured $E\gamma$ . JOUR PRVCA 79 064318 |

**A=67**

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| $^{67}\text{Fe}$ | 2009PA16 | RADIOACTIVITY $^{65,65\text{m}}\text{Fe}$ , $^{65}\text{Co}$ , $^{67}\text{Fe}(\beta^-)$ [from $^{238}\text{U}(\text{p}, \text{F})$ , E=30 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. $^{65}\text{Co}$ , $^{65}\text{Ni}$ , $^{67}\text{Co}$ ; deduced levels, J, $\pi$ , configurations. $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309 |
| $^{67}\text{Co}$ | 2009PA16 | RADIOACTIVITY $^{65,65\text{m}}\text{Fe}$ , $^{65}\text{Co}$ , $^{67}\text{Fe}(\beta^-)$ [from $^{238}\text{U}(\text{p}, \text{F})$ , E=30 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-lives. $^{65}\text{Co}$ , $^{65}\text{Ni}$ , $^{67}\text{Co}$ ; deduced levels, J, $\pi$ , configurations. $^{61,63,65}\text{Co}$ ; level systematics. Interpretation in terms of core coupled states with proton intruder orbitals. JOUR PRVCA 79 044309 |



KEYNUMBERS AND KEYWORDS

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**A=67 (continued)**

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| $^{67}\text{Cu}$ | 2008FUZV | NUCLEAR REACTIONS $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \text{p})$ , $E=3.5\text{-}5.9$ MeV; $^{27}\text{Al}$ , $^{28,29}\text{Si}$ , $^{41}\text{K}$ , $^{51}\text{V}$ , $^{61}\text{Ni}$ , $^{65}\text{Cu}$ , $^{64,67}\text{Zn}$ , $^{69}\text{Ga}$ , $^{79}\text{Br}$ , $^{92}\text{Mo}$ , $^{93}\text{Nb}(\text{n}, \alpha)$ , $E=3.5\text{-}5.9$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta |
|                  | 2009BH06 | NUCLEAR REACTIONS $^{67}\text{Zn}$ , $^{92}\text{Mo}(\text{n}, \text{p})$ , $^{98}\text{Mo}(\text{n}, \gamma)$ , $E=1.6, 3.7$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with EMPIRE-2.19 model code. JOUR NSENA 163 175   |
|                  | 2009SZ01 | NUCLEAR REACTIONS $^{68}\text{Zn}(\text{p}, 2\text{p})$ , $E=19.2\text{-}39.7$ MeV; Measured $\sigma$ ; compiled and evaluated earlier measurements. JOUR NIMBE 267 1877  |
| $^{67}\text{Zn}$ | 2009OR01 | NUCLEAR MOMENTS $^1\text{H}$ , $^{67}\text{Zn}$ ; measured dynamic nuclear polarization. JOUR PRBMD 79 165316   |
| $^{67}\text{As}$ | 2009OR02 | NUCLEAR REACTIONS $^{40}\text{Ca}(\text{}^{32}\text{S}, \alpha\text{p})$ , $(\text{}^{32}\text{S}, \alpha\text{n})$ , $E=90$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma\gamma\text{-coin.}$ , particle- $\gamma\gamma\text{-coin.}$ ; deduced partial level schemes, lifetimes of the excited states, $B(E1)$ , $B(M2)$ , isovector and isoscalar components of electromagnetic transition amplitudes. JOUR PRLTA 103 052501   |
|                  | 2009WIZX | NUCLEAR REACTIONS $^{40}\text{Ca}(\text{}^{32}\text{S}, \text{x})^{67}\text{As}$ , $E=90$ MeV; $^{40}\text{Ca}(\text{}^{32}\text{S}, \text{x})^{67}\text{Se}$ , $E=90$ MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $E\text{n}$ , $I\text{n}$ , $E\text{p}$ , $I\text{p}$ , $\gamma\gamma\gamma\text{-coin.}$ , $\gamma\gamma\alpha\text{n-coin.}$ , $\gamma\gamma\alpha\text{p-coin.}$ ; deduced $J$ , $\pi$ , $E$ using ADO analysis, $\sigma$ using fusion evaporation code PACE, $B(E1)$ , $B(M2)$ transition strengths; calculated $\sigma$ , $B(\lambda)$ . CONF Brazil (Nuclear Physics 2008) Proc. P115,Wiedemann  |
| $^{67}\text{Se}$ | 2009OR02 | NUCLEAR REACTIONS $^{40}\text{Ca}(\text{}^{32}\text{S}, \alpha\text{p})$ , $(\text{}^{32}\text{S}, \alpha\text{n})$ , $E=90$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma\gamma\text{-coin.}$ , particle- $\gamma\gamma\text{-coin.}$ ; deduced partial level schemes, lifetimes of the excited states, $B(E1)$ , $B(M2)$ , isovector and isoscalar components of electromagnetic transition amplitudes. JOUR PRLTA 103 052501   |
|                  | 2009WIZX | NUCLEAR REACTIONS $^{40}\text{Ca}(\text{}^{32}\text{S}, \text{x})^{67}\text{As}$ , $E=90$ MeV; $^{40}\text{Ca}(\text{}^{32}\text{S}, \text{x})^{67}\text{Se}$ , $E=90$ MeV; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ , $E\text{n}$ , $I\text{n}$ , $E\text{p}$ , $I\text{p}$ , $\gamma\gamma\gamma\text{-coin.}$ , $\gamma\gamma\alpha\text{n-coin.}$ , $\gamma\gamma\alpha\text{p-coin.}$ ; deduced $J$ , $\pi$ , $E$ using ADO analysis, $\sigma$ using fusion evaporation code PACE, $B(E1)$ , $B(M2)$ transition strengths; calculated $\sigma$ , $B(\lambda)$ . CONF Brazil (Nuclear Physics 2008) Proc. P115,Wiedemann  |

**A=68**

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| $^{68}\text{Cr}$ | 2009TA05 | NUCLEAR REACTIONS $^9\text{Be}(\text{}^{76}\text{Ge}, \text{X})^{50}\text{Cl} / \text{}^{53}\text{Ar} / \text{}^{55}\text{K} / \text{}^{56}\text{K} / \text{}^{57}\text{Ca} / \text{}^{58}\text{Ca} / \text{}^{59}\text{Sc} / \text{}^{60}\text{Sc} / \text{}^{61}\text{Sc} / \text{}^{62}\text{Ti} / \text{}^{63}\text{Ti} / \text{}^{65}\text{V} / \text{}^{66}\text{V} / \text{}^{68}\text{Cr} / \text{}^{70}\text{Mn}$ , $E=132$ MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501   |
|                  | 2009TA24 | NUCLEAR REACTIONS $^9\text{Be}$ , $\text{W}(\text{}^{76}\text{Ge}, \text{X})^{50}\text{Cl} / \text{}^{53}\text{Ar} / \text{}^{55}\text{K} / \text{}^{56}\text{K} / \text{}^{57}\text{Ca} / \text{}^{58}\text{Ca} / \text{}^{59}\text{Sc} / \text{}^{60}\text{Sc} / \text{}^{61}\text{Sc} / \text{}^{62}\text{Ti} / \text{}^{63}\text{Ti} / \text{}^{65}\text{V} / \text{}^{66}\text{V} / \text{}^{68}\text{Cr} / \text{}^{70}\text{Mn}$ , $E=132$ MeV / nucleon; measured fragment yields, production $\sigma$ for $A=33\text{-}74$ , $Z=13\text{-}29$ nuclides, longitudinal momentum distributions for $Z=17\text{-}25$ nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609 |

KEYNUMBERS AND KEYWORDS

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**A=68 (continued)**

- <sup>68</sup>Fe      2009CR02      RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ ) [from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- <sup>68</sup>Ni      2009CR02      RADIOACTIVITY <sup>61</sup>Cr( $\beta^-$ ) [from Be(<sup>76</sup>Ge, X), E=130 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin, half-life. <sup>61</sup>Mn; deduced levels, J,  $\pi$ . <sup>54,56,58,60,62</sup>Cr, <sup>56,58,60,62,64,66,68</sup>Fe, <sup>58,60,62,64,66,68,70</sup>Ni, <sup>57,59,61,63</sup>Mn; level systematics and shell-model calculations. JOUR PRVCA 79 054320
- <sup>68</sup>Se      20090B02      NUCLEAR REACTIONS <sup>197</sup>Au(<sup>68</sup>Se, X), E=92 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, t-o-f method using SeGa array. <sup>68</sup>Se, <sup>78</sup>Kr; deduced levels, J,  $\pi$ , B(E2). Coulomb excitation. Systematics of first 2+ states in Z=30-38 self-conjugate nuclei. Comparisons with several theoretical predictions. JOUR PRVCA 80 031304
- 2009SA12      ATOMIC MASSES <sup>68,70</sup>Se, <sup>70,71</sup>Kr; measured masses using a penning trap. JOUR PRLTA 102 132501
- 2009ST04      RADIOACTIVITY <sup>80</sup>Y, <sup>81</sup>Zr, <sup>83,84</sup>Nb, <sup>84</sup>Mo(EC), ( $\beta^+$ ) [from <sup>9</sup>Be(<sup>124</sup>Xe, X), E=140 MeV / nucleon]; measured E $\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life. <sup>64</sup>Ge, <sup>68</sup>Se, <sup>72</sup>Kr, <sup>76</sup>Sr, <sup>80</sup>Zr, <sup>84</sup>Mo, <sup>88</sup>Ru; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

**A=69**

- <sup>69</sup>Ni      2009ST07      RADIOACTIVITY <sup>71</sup>Co, <sup>71</sup>Ni( $\beta^-$ ) [from <sup>238</sup>U(p, X), E=30 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin with laser on Co resonance, half-lives. <sup>71</sup>Ni, <sup>71</sup>Cu; deduced levels, J,  $\pi$ , configurations. <sup>69</sup>Ni, <sup>69</sup>Cu; systematics. JOUR PRVCA 79 044325
- <sup>69</sup>Cu      2009ST07      RADIOACTIVITY <sup>71</sup>Co, <sup>71</sup>Ni( $\beta^-$ ) [from <sup>238</sup>U(p, X), E=30 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta$ ,  $\gamma\gamma$ -,  $\beta\gamma$ -coin with laser on Co resonance, half-lives. <sup>71</sup>Ni, <sup>71</sup>Cu; deduced levels, J,  $\pi$ , configurations. <sup>69</sup>Ni, <sup>69</sup>Cu; systematics. JOUR PRVCA 79 044325
- <sup>69</sup>Zn      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>
- <sup>69</sup>As      2009BA30      NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>14</sup>N, 2pn), E=37-52 MeV; measured E $\gamma$ , I $\gamma$ , n- $\gamma$ , n- $\gamma\gamma$ -coin., I $\gamma$ ( $\theta$ ), linear polarization; <sup>69</sup>As deduced levels, J,  $\pi$ ,  $\delta$ . Enriched <sup>58</sup>Ni target. JOUR RJPHE 54 467

## A=70

$^{70}\text{Mn}$	2009TA05	NUCLEAR REACTIONS $^9\text{Be}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured cross sections. JOUR PRLTA 102 142501
	2009TA24	NUCLEAR REACTIONS $^9\text{Be}, \text{W}(^{76}\text{Ge}, \text{X})^{50}\text{Cl} / ^{53}\text{Ar} / ^{55}\text{K} / ^{56}\text{K} / ^{57}\text{Ca} / ^{58}\text{Ca} / ^{59}\text{Sc} / ^{60}\text{Sc} / ^{61}\text{Sc} / ^{62}\text{Ti} / ^{63}\text{Ti} / ^{65}\text{V} / ^{66}\text{V} / ^{68}\text{Cr} / ^{70}\text{Mn}$ , E=132 MeV / nucleon; measured fragment yields, production $\sigma$ for A=33-74, Z=13-29 nuclides, longitudinal momentum distributions for Z=17-25 nuclides, time-of-flight. Comparison with various model calculations. JOUR PRVCA 80 034609
$^{70}\text{Ni}$	2009CR02	RADIOACTIVITY $^{61}\text{Cr}(\beta^-)$ [from $\text{Be}(^{76}\text{Ge}, \text{X})$ , E=130 MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -coin, half-life. $^{61}\text{Mn}$ ; deduced levels, J, $\pi$ . $^{54,56,58,60,62}\text{Cr}$ , $^{56,58,60,62,64,66,68}\text{Fe}$ , $^{58,60,62,64,66,68,70}\text{Ni}$ , $^{57,59,61,63}\text{Mn}$ ; level systematics and shell-model calculations. JOUR PRVCA 79 054320
	2009ST05	NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{71}\text{Cu}$ ; deduced levels, J, $\pi$ , configurations. $^{70}\text{Ni}$ , $^{71}\text{Cu}$ , $^{92}\text{Mo}$ ; level systematics. Comparison with shell-model calculations. JOUR PRVCA 79 034319
$^{70}\text{Zn}$	2009BE27	RADIOACTIVITY $^{64}\text{Zn}(2\text{EC})$ , $(\beta^+\text{EC})$ ; $^{70}\text{Zn}$ , $^{186}\text{W}(2\beta^-)$ ; $^{180}\text{W}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ lower limits for various $2\beta$ -decay modes. $\text{ZnWO}_4$ crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
	2009MU06	NUCLEAR REACTIONS $^{12}\text{C}(^{70}\text{Zn}, \text{X})$ , E=180-200 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin, $\gamma\gamma(\theta)$ , half-lives and spin precessions in a magnetic field. $^{70}\text{Zn}$ ; deduced levels, J, $\pi$ . Comparison with large-scale shell-model calculations. JOUR PRVCA 79 054310
	2009MU06	NUCLEAR MOMENTS $^{70}\text{Zn}$ ; measured g factors by projectile Coulomb excitation in inverse kinematics combined with transient magnetic field. Comparison with shell-model calculations. JOUR PRVCA 79 054310
$^{70}\text{Ga}$	2009SA06	NUCLEAR REACTIONS $^7\text{Li}$ , C(p, n), E=297 MeV; $^{58}\text{Ni}$ , $^{70}\text{Zn}$ , $^{114}\text{Cd}$ , $^{118}\text{Sn}$ , $^{120}\text{Sn}(p, n)$ , E=198, 297 MeV; measured neutron TOF and $\sigma(E, \theta)$ . $^7\text{Be}$ , $^{12}\text{N}$ , $^{13}\text{N}$ , $^{58}\text{Cu}$ , $^{70}\text{Ga}$ , $^{114}\text{In}$ , $^{118}\text{Sb}$ , $^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
$^{70}\text{Ge}$	2009BE27	RADIOACTIVITY $^{64}\text{Zn}(2\text{EC})$ , $(\beta^+\text{EC})$ ; $^{70}\text{Zn}$ , $^{186}\text{W}(2\beta^-)$ ; $^{180}\text{W}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ lower limits for various $2\beta$ -decay modes. $\text{ZnWO}_4$ crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
$^{70}\text{Se}$	2009SA12	ATOMIC MASSES $^{68,70}\text{Se}$ , $^{70,71}\text{Kr}$ ; measured masses using a penning trap. JOUR PRLTA 102 132501
$^{70}\text{Kr}$	2009SA12	ATOMIC MASSES $^{68,70}\text{Se}$ , $^{70,71}\text{Kr}$ ; measured masses using a penning trap. JOUR PRLTA 102 132501

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KEYNUMBERS AND KEYWORDS

**A=71**

<sup>71</sup> Co	2009ST07	RADIOACTIVITY <sup>71</sup> Co, <sup>71</sup> Ni( $\beta^-$ ) [from <sup>238</sup> U(p, X), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta$ , $\gamma\gamma$ -, $\beta\gamma$ -coin with laser on Co resonance, half-lives. <sup>71</sup> Ni, <sup>71</sup> Cu; deduced levels, J, $\pi$ , configurations. <sup>69</sup> Ni, <sup>69</sup> Cu; systematics. JOUR PRVCA 79 044325
<sup>71</sup> Ni	2009ST07	RADIOACTIVITY <sup>71</sup> Co, <sup>71</sup> Ni( $\beta^-$ ) [from <sup>238</sup> U(p, X), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta$ , $\gamma\gamma$ -, $\beta\gamma$ -coin with laser on Co resonance, half-lives. <sup>71</sup> Ni, <sup>71</sup> Cu; deduced levels, J, $\pi$ , configurations. <sup>69</sup> Ni, <sup>69</sup> Cu; systematics. JOUR PRVCA 79 044325
<sup>71</sup> Cu	2009FL03	NUCLEAR MOMENTS <sup>71,73,75</sup> Cu; measured hfs spectra; deduced ground-state spins, magnetic moments, hyperfine parameters, shell inversion. Comparison with large-scale shell-model calculation. JOUR PRLTA 103 142501
	2009ST05	NUCLEAR REACTIONS <sup>238</sup> U( <sup>64</sup> Ni, X), E=430 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>71</sup> Cu; deduced levels, J, $\pi$ , configurations. <sup>70</sup> Ni, <sup>71</sup> Cu, <sup>92</sup> Mo; level systematics. Comparison with shell-model calculations. JOUR PRVCA 79 034319
	2009ST07	RADIOACTIVITY <sup>71</sup> Co, <sup>71</sup> Ni( $\beta^-$ ) [from <sup>238</sup> U(p, X), E=30 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta$ , $\gamma\gamma$ -, $\beta\gamma$ -coin with laser on Co resonance, half-lives. <sup>71</sup> Ni, <sup>71</sup> Cu; deduced levels, J, $\pi$ , configurations. <sup>69</sup> Ni, <sup>69</sup> Cu; systematics. JOUR PRVCA 79 044325
<sup>71</sup> Zn	2008BA54	ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup> Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501
<sup>71</sup> Ga	2009ST12	NUCLEAR REACTIONS <sup>238</sup> U( <sup>76</sup> Ge, X), E=530 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>71,73,75,77</sup> Ga; deduced levels, J, $\pi$ . Discussed level systematics of A=65-77, odd-A Ga and Cu nuclides. JOUR PRVCA 79 064302
<sup>71</sup> Ge	2009AB16	NUCLEAR REACTIONS <sup>71</sup> Ga( $\nu$ , e), E=spectrum; measured neutrino capture rates using <sup>37</sup> Ar neutrino source and radioactive decay of extracted <sup>71</sup> Ge. SAGE experiment. JOUR PRVCA 80 015807
<sup>71</sup> As	2009EL02	NUCLEAR REACTIONS Se(p, X) <sup>75</sup> Br / <sup>76</sup> Br / <sup>77</sup> Br / <sup>80</sup> Br / <sup>82</sup> Br / <sup>73</sup> Se / <sup>75</sup> Se / <sup>71</sup> As / <sup>72</sup> As / <sup>76</sup> As / <sup>77</sup> As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71
<sup>71</sup> Kr	2009SA12	ATOMIC MASSES <sup>68,70</sup> Se, <sup>70,71</sup> Kr; measured masses using a penning trap. JOUR PRLTA 102 132501

**A=72**

<sup>72</sup> Zn	2008BA54	ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup> Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501
	2009NA10	NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>60</sup> Co
<sup>72</sup> As	2009EL02	Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891 NUCLEAR REACTIONS Se(p, X) <sup>75</sup> Br / <sup>76</sup> Br / <sup>77</sup> Br / <sup>80</sup> Br / <sup>82</sup> Br / <sup>73</sup> Se / <sup>75</sup> Se / <sup>71</sup> As / <sup>72</sup> As / <sup>76</sup> As / <sup>77</sup> As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71

KEYNUMBERS AND KEYWORDS

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**A=72 (continued)**

<sup>72</sup>Kr      2009ST04      RADIOACTIVITY <sup>80</sup>Y, <sup>81</sup>Zr, <sup>83,84</sup>Nb, <sup>84</sup>Mo(EC), ( $\beta^+$ ) [from <sup>9</sup>Be(<sup>124</sup>Xe, X), E=140 MeV / nucleon]; measured E $\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life. <sup>64</sup>Ge, <sup>68</sup>Se, <sup>72</sup>Kr, <sup>76</sup>Sr, <sup>80</sup>Zr, <sup>84</sup>Mo, <sup>88</sup>Ru; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

**A=73**

<sup>73</sup>Cu      2009FL03      NUCLEAR MOMENTS <sup>71,73,75</sup>Cu; measured hfs spectra; deduced ground-state spins, magnetic moments, hyperfine parameters, shell inversion. Comparison with large-scale shell-model calculation. JOUR PRLTA 103 142501

<sup>73</sup>Zn      2008BA54      ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup>Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501

<sup>73</sup>Ga      2009KA06      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>76,78</sup>Se(d, <sup>3</sup>He), (polarized d, <sup>3</sup>He), E=80 MeV; measured <sup>3</sup>He spectra,  $\sigma$ , angular distributions, vector analyzing powers. <sup>74,76</sup>Ge, <sup>76,78</sup>Se(<sup>3</sup>He, d), E=72 MeV; measured deuteron spectra,  $\sigma$ , angular distributions. <sup>73,75</sup>Ga, <sup>75,77</sup>As, <sup>77,79</sup>Br; deduced levels, J,  $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. <sup>76</sup>Ge, <sup>76</sup>Se; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of <sup>76</sup>Ge and <sup>76</sup>Se with QRPA and shell-model calculations. Discussed implications for neutrinoless double  $\beta$  decay of <sup>76</sup>Ge to <sup>76</sup>Se. JOUR PRVCA 79 021301

2009ST12      NUCLEAR REACTIONS <sup>238</sup>U(<sup>76</sup>Ge, X), E=530 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>71,73,75,77</sup>Ga; deduced levels, J,  $\pi$ . Discussed level systematics of A=65-77, odd-A Ga and Cu nuclides. JOUR PRVCA 79 064302

<sup>73</sup>As      2009ST04      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>124</sup>Xe, X)<sup>73</sup>As / <sup>74</sup>Se / <sup>76</sup>Br / <sup>77</sup>Kr / <sup>78</sup>Rb / <sup>79</sup>Sr / <sup>80</sup>Y / <sup>81,82</sup>Zr / <sup>83</sup>Nb / <sup>84</sup>Nb / <sup>84</sup>Mo, E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803

<sup>73</sup>Se      2009EL02      NUCLEAR REACTIONS Se(p, X)<sup>75</sup>Br / <sup>76</sup>Br / <sup>77</sup>Br / <sup>80</sup>Br / <sup>82</sup>Br / <sup>73</sup>Se / <sup>75</sup>Se / <sup>71</sup>As / <sup>72</sup>As / <sup>76</sup>As / <sup>77</sup>As, E < 62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71

**A=74**

<sup>74</sup>Zn      2008BA54      ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup>Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501



A=75 (continued)

- <sup>75</sup>Ga      2009KA06      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>76,78</sup>Se(d, <sup>3</sup>He), (polarized d, <sup>3</sup>He), E=80 MeV; measured <sup>3</sup>He spectra,  $\sigma$ , angular distributions, vector analyzing powers. <sup>74,76</sup>Ge, <sup>76,78</sup>Se(<sup>3</sup>He, d), E=72 MeV; measured deuteron spectra,  $\sigma$ , angular distributions. <sup>73,75</sup>Ga, <sup>75,77</sup>As, <sup>77,79</sup>Br; deduced levels, J,  $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. <sup>76</sup>Ge, <sup>76</sup>Se; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of <sup>76</sup>Ge and <sup>76</sup>Se with QRPA and shell-model calculations. Discussed implications for neutrinoless double  $\beta$  decay of <sup>76</sup>Ge to <sup>76</sup>Se. JOUR PRVCA 79 021301
- 2009ST12      NUCLEAR REACTIONS <sup>238</sup>U(<sup>76</sup>Ge, X), E=530 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>71,73,75,77</sup>Ga; deduced levels, J,  $\pi$ . Discussed level systematics of A=65-77, odd-A Ga and Cu nuclides. JOUR PRVCA 79 064302
- <sup>75</sup>Ge      2009AT03      NUCLEAR REACTIONS <sup>76</sup>Ge(n, 2n), <sup>75</sup>As(n, p), <sup>78</sup>Se(n,  $\alpha$ ), E=13.73, 14.42, 14.77 MeV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$  for ground and metastable state production using the activation technique. Comparison with EMPIRE and TALYS codes. <sup>76</sup>Ge(n, 2n), <sup>75</sup>As(n, p), <sup>78</sup>Se(n,  $\alpha$ ), E=threshold-20 MeV; calculated  $\sigma$  for ground and metastable state production using EMPIRE and TALYS codes. Comparison with data. JOUR NUPAB 828 253
- 2009MA35      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>75</sup>As(n,  $\gamma$ ), E<106 keV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ ; deduced Maxwellian averaged  $\sigma$  for thermal energies from 5 to 100 keV. Neutrons from <sup>7</sup>Li(p, n), E=1912 keV reaction. <sup>197</sup>Au(n,  $\gamma$ ), E<106 keV; measured  $\sigma$  and used as a standard. Estimated background contributions for  $\gamma$ -ray studies of double  $\beta$  decay of <sup>76</sup>Ge. JOUR PRVCA 79 065802
- <sup>75</sup>As      2009KA06      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>76,78</sup>Se(d, <sup>3</sup>He), (polarized d, <sup>3</sup>He), E=80 MeV; measured <sup>3</sup>He spectra,  $\sigma$ , angular distributions, vector analyzing powers. <sup>74,76</sup>Ge, <sup>76,78</sup>Se(<sup>3</sup>He, d), E=72 MeV; measured deuteron spectra,  $\sigma$ , angular distributions. <sup>73,75</sup>Ga, <sup>75,77</sup>As, <sup>77,79</sup>Br; deduced levels, J,  $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. <sup>76</sup>Ge, <sup>76</sup>Se; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of <sup>76</sup>Ge and <sup>76</sup>Se with QRPA and shell-model calculations. Discussed implications for neutrinoless double  $\beta$  decay of <sup>76</sup>Ge to <sup>76</sup>Se. JOUR PRVCA 79 021301
- <sup>75</sup>Se      2009EL02      NUCLEAR REACTIONS Se(p, X)<sup>75</sup>Br / <sup>76</sup>Br / <sup>77</sup>Br / <sup>80</sup>Br / <sup>82</sup>Br / <sup>73</sup>Se / <sup>75</sup>Se / <sup>71</sup>As / <sup>72</sup>As / <sup>76</sup>As / <sup>77</sup>As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891

KEYNUMBERS AND KEYWORDS

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**A=75 (continued)**

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| <sup>75</sup> Br | 2009EL02 | NUCLEAR REACTIONS Se(p, X) <sup>75</sup> Br / <sup>76</sup> Br / <sup>77</sup> Br / <sup>80</sup> Br / <sup>82</sup> Br / <sup>73</sup> Se / <sup>75</sup> Se / <sup>71</sup> As / <sup>72</sup> As / <sup>76</sup> As / <sup>77</sup> As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71   |
|                  | 2009MU16 | NUCLEAR REACTIONS <sup>51</sup> V( <sup>28</sup> Si, 2n2p), E=115 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin with HPGe detectors. <sup>75</sup> Br; deduced high spin states T <sub>1/2</sub> , B(E2), band configurations using DSA, transition quadrupole moments and deformation parameters. Comparison with cranking model and total Routhian surface calculations. JOUR NUPAB 829 137  |
|                  | 2009SP01 | NUCLEAR REACTIONS <sup>77,78,80</sup> Se(p, xn) <sup>75</sup> Br / <sup>76</sup> Br, E<85 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , yields. Comparison with ALICE-IPPE code. JOUR RAACA 465 535  |
| <sup>75</sup> Kr | 2009TR07 | NUCLEAR REACTIONS <sup>50</sup> Cr( <sup>28</sup> Si, n2p), E=90 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, and half-lives by Doppler-shift attenuation method. <sup>75</sup> Kr; deduced levels, J, $\pi$ , bands, B(E2), transitional quadrupole moments, and configurations. Comparison with projected shell model calculations. JOUR PRVCA 80 047302   |
| <sup>75</sup> Rb | 2007WEZX | RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007 |
| <sup>75</sup> Sr | 2007WEZX | RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007 |

**A=76**

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| <sup>76</sup> Cu | 2009GR06 | RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447  |
|                  | 2009WI03 | RADIOACTIVITY <sup>76,77,78</sup> Cu, <sup>83</sup> Ga( $\beta^-$ ); measured $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502   |
| <sup>76</sup> Zn | 2008BA54 | ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup> Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501  |
|                  | 2009GR06 | RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447  |
|                  | 2009PA35 | RADIOACTIVITY <sup>77</sup> Cu( $\beta^-$ ), ( $\beta^-$ n)[from <sup>238</sup> U(n, F), (p, F), E=1 GeV]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, $\beta\gamma$ -, $\beta$ n-coin and $\beta$ -delayed neutron yield. <sup>76</sup> Zn, <sup>77</sup> Zn; deduced levels, J, $\pi$ , half-lives. Systematics of low-lying levels of A=63-77 Cu nuclei. JOUR PRVCA 80 034307  |
|                  | 2009VA01 | NUCLEAR REACTIONS <sup>120</sup> Sn( <sup>74</sup> Zn, <sup>74</sup> Zn'), E=2.87 MeV / nucleon; <sup>120</sup> Sn( <sup>76</sup> Zn, <sup>76</sup> Zn'), E=2.83 MeV / nucleon; <sup>108</sup> Pd( <sup>78</sup> Zn, <sup>78</sup> Zn'), E=2.87 MeV / nucleon; <sup>108</sup> Pd( <sup>80</sup> Zn, <sup>80</sup> Zn'), E=2.79 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , charged particle spectra, (particle)- $\gamma$ coin, measured half-lives of first 2 <sup>+</sup> state, B(E2). <sup>74,76,78,80</sup> Zn, <sup>80</sup> Ga, <sup>80</sup> Rb, <sup>108</sup> Pd, <sup>120</sup> Sn; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of B(E2) values. Comparison with shell-model calculations. JOUR PRVCA 79 014309 |
|                  | 2009WI03 | RADIOACTIVITY <sup>76,77,78</sup> Cu, <sup>83</sup> Ga( $\beta^-$ ); measured $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502   |



**A=76 (continued)**

- <sup>76</sup>Ge      2009KA06      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>76,78</sup>Se(d, <sup>3</sup>He), (polarized d, <sup>3</sup>He), E=80 MeV; measured <sup>3</sup>He spectra,  $\sigma$ , angular distributions, vector analyzing powers. <sup>74,76</sup>Ge, <sup>76,78</sup>Se(<sup>3</sup>He, d), E=72 MeV; measured deuteron spectra,  $\sigma$ , angular distributions. <sup>73,75</sup>Ga, <sup>75,77</sup>As, <sup>77,79</sup>Br; deduced levels, J,  $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. <sup>76</sup>Ge, <sup>76</sup>Se; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of <sup>76</sup>Ge and <sup>76</sup>Se with QRPA and shell-model calculations. Discussed implications for neutrinoless double  $\beta$  decay of <sup>76</sup>Ge to <sup>76</sup>Se. JOUR PRVCA 79 021301
- <sup>76</sup>As      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009EL02      NUCLEAR REACTIONS Se(p, X)<sup>75</sup>Br / <sup>76</sup>Br / <sup>77</sup>Br / <sup>80</sup>Br / <sup>82</sup>Br / <sup>73</sup>Se / <sup>75</sup>Se / <sup>71</sup>As / <sup>72</sup>As / <sup>76</sup>As / <sup>77</sup>As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71
- 2009MA35      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>75</sup>As(n,  $\gamma$ ), E<106 keV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ ; deduced Maxwellian averaged  $\sigma$  for thermal energies from 5 to 100 keV. Neutrons from <sup>7</sup>Li(p, n), E=1912 keV reaction. <sup>197</sup>Au(n,  $\gamma$ ), E<106 keV; measured  $\sigma$  and used as a standard. Estimated background contributions for  $\gamma$ -ray studies of double  $\beta$  decay of <sup>76</sup>Ge. JOUR PRVCA 79 065802
- <sup>76</sup>Se      2009KA06      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>76,78</sup>Se(d, <sup>3</sup>He), (polarized d, <sup>3</sup>He), E=80 MeV; measured <sup>3</sup>He spectra,  $\sigma$ , angular distributions, vector analyzing powers. <sup>74,76</sup>Ge, <sup>76,78</sup>Se(<sup>3</sup>He, d), E=72 MeV; measured deuteron spectra,  $\sigma$ , angular distributions. <sup>73,75</sup>Ga, <sup>75,77</sup>As, <sup>77,79</sup>Br; deduced levels, J,  $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. <sup>76</sup>Ge, <sup>76</sup>Se; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of <sup>76</sup>Ge and <sup>76</sup>Se with QRPA and shell-model calculations. Discussed implications for neutrinoless double  $\beta$  decay of <sup>76</sup>Ge to <sup>76</sup>Se. JOUR PRVCA 79 021301
- <sup>76</sup>Br      2009EL02      NUCLEAR REACTIONS Se(p, X)<sup>75</sup>Br / <sup>76</sup>Br / <sup>77</sup>Br / <sup>80</sup>Br / <sup>82</sup>Br / <sup>73</sup>Se / <sup>75</sup>Se / <sup>71</sup>As / <sup>72</sup>As / <sup>76</sup>As / <sup>77</sup>As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71
- 2009SP01      NUCLEAR REACTIONS <sup>77,78,80</sup>Se(p, xn)<sup>75</sup>Br / <sup>76</sup>Br, E<85 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ , yields. Comparison with ALICE-IPPE code. JOUR RAACA 465 535
- 2009ST04      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>124</sup>Xe, X)<sup>73</sup>As / <sup>74</sup>Se / <sup>76</sup>Br / <sup>77</sup>Kr / <sup>78</sup>Rb / <sup>79</sup>Sr / <sup>80</sup>Y / <sup>81,82</sup>Zr / <sup>83</sup>Nb / <sup>84</sup>Nb / <sup>84</sup>Mo, E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803

KEYNUMBERS AND KEYWORDS

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**A=76 (continued)**

- <sup>76</sup>Sr      2009ST04      RADIOACTIVITY <sup>80</sup>Y, <sup>81</sup>Zr, <sup>83,84</sup>Nb, <sup>84</sup>Mo(EC), ( $\beta^+$ ) [from <sup>9</sup>Be(<sup>124</sup>Xe, X), E=140 MeV / nucleon]; measured E $\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life. <sup>64</sup>Ge, <sup>68</sup>Se, <sup>72</sup>Kr, <sup>76</sup>Sr, <sup>80</sup>Zr, <sup>84</sup>Mo, <sup>88</sup>Ru;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803
- <sup>76</sup>Y      2007WEZX      RADIOACTIVITY <sup>75</sup>Sr, <sup>77,78</sup>Y, <sup>79,80</sup>Zr, <sup>83,84</sup>Mo, <sup>88,89</sup>Ru, <sup>92,93</sup>Pd, <sup>86</sup>Tc, <sup>90</sup>Rh, <sup>94,98</sup>In(EC); measured half-lives; <sup>76</sup>Y, <sup>78</sup>Zr, <sup>81</sup>Nb, <sup>85</sup>Tc(p); deduced half-life limits; <sup>78</sup>Y, <sup>82</sup>Nb, <sup>86</sup>Tc, <sup>90</sup>Rh, <sup>94</sup>Ag, <sup>98</sup>In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

**A=77**

- <sup>77</sup>Cu      2009GR06      RADIOACTIVITY <sup>75,76,77,78,79</sup>Cu, <sup>79,80,81</sup>Zn, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
- 2009PA35      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from <sup>238</sup>U(n, F), (p, F), E=1 GeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma^-$ ,  $\beta$ n-coin and  $\beta$ -delayed neutron yield. <sup>76</sup>Zn, <sup>77</sup>Zn; deduced levels, J,  $\pi$ , half-lives. Systematics of low-lying levels of A=63-77 Cu nuclei. JOUR PRVCA 80 034307
- 2009WI03      RADIOACTIVITY <sup>76,77,78</sup>Cu, <sup>83</sup>Ga( $\beta^-$ ); measured  $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502
- <sup>77</sup>Zn      2008BA54      ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup>Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501
- 2009GR06      RADIOACTIVITY <sup>75,76,77,78,79</sup>Cu, <sup>79,80,81</sup>Zn, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
- 2009PA35      RADIOACTIVITY <sup>77</sup>Cu( $\beta^-$ ), ( $\beta^-$ n)[from <sup>238</sup>U(n, F), (p, F), E=1 GeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ ,  $\beta\gamma^-$ ,  $\beta$ n-coin and  $\beta$ -delayed neutron yield. <sup>76</sup>Zn, <sup>77</sup>Zn; deduced levels, J,  $\pi$ , half-lives. Systematics of low-lying levels of A=63-77 Cu nuclei. JOUR PRVCA 80 034307
- 2009WI03      RADIOACTIVITY <sup>76,77,78</sup>Cu, <sup>83</sup>Ga( $\beta^-$ ); measured  $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502
- <sup>77</sup>Ga      2009ST12      NUCLEAR REACTIONS <sup>238</sup>U(<sup>76</sup>Ge, X), E=530 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>71,73,75,77</sup>Ga; deduced levels, J,  $\pi$ . Discussed level systematics of A=65-77, odd-A Ga and Cu nuclides. JOUR PRVCA 79 064302
- <sup>77</sup>Ge      2009KA22      NUCLEAR REACTIONS <sup>76</sup>Ge(<sup>13</sup>C, <sup>12</sup>C), E=27-36 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , relative  $\sigma$ . <sup>77</sup>Ge; deduced levels, J,  $\pi$ , multipolarity. Comparison of measured  $\sigma$  with DWBA calculations. JOUR PRVCA 80 017301
- 2009KAZZ      NUCLEAR REACTIONS <sup>76</sup>Ge(<sup>13</sup>C, <sup>12</sup>C), E=29 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma^-$ , (fragment) $\gamma$ -coin,  $\gamma(\gamma)$ ; <sup>77</sup>Ge; deduced levels, J,  $\pi$ , multipolarity, mixing ratio. PC B P Kay,6/10/2009
- 2009MA35      NUCLEAR REACTIONS <sup>74,76</sup>Ge, <sup>75</sup>As(n,  $\gamma$ ), E<106 keV; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ ; deduced Maxwellian averaged  $\sigma$  for thermal energies from 5 to 100 keV. Neutrons from <sup>7</sup>Li(p, n), E=1912 keV reaction. <sup>197</sup>Au(n,  $\gamma$ ), E<106 keV; measured  $\sigma$  and used as a standard. Estimated background contributions for  $\gamma$ -ray studies of double  $\beta$  decay of <sup>76</sup>Ge. JOUR PRVCA 79 065802

KEYNUMBERS AND KEYWORDS

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**A=77 (continued)**

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|                  | 2009ME06 | NUCLEAR REACTIONS $^{76}\text{Ge}(n, \gamma)$ , E=cold; measured $E\gamma$ , $I\gamma$ ; deduced thermal $\sigma$ to ground and isomeric states. Activation technique with HPGe detectors. Comparison with other data. JOUR ZAANE 40 61   |
| $^{77}\text{As}$ | 2009EL02 | NUCLEAR REACTIONS $\text{Se}(p, X)^{75}\text{Br} / ^{76}\text{Br} / ^{77}\text{Br} / ^{80}\text{Br} / ^{82}\text{Br} / ^{73}\text{Se} / ^{75}\text{Se} / ^{71}\text{As} / ^{72}\text{As} / ^{76}\text{As} / ^{77}\text{As}$ , E <62 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions. JOUR RAACA 97 71  |
|                  | 2009KA06 | NUCLEAR REACTIONS $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(d, ^3\text{He})$ , (polarized d, $^3\text{He}$ ), E=80 MeV; measured $^3\text{He}$ spectra, $\sigma$ , angular distributions, vector analyzing powers. $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(^3\text{He}, d)$ , E=72 MeV; measured deuteron spectra, $\sigma$ , angular distributions. $^{73,75}\text{Ga}$ , $^{75,77}\text{As}$ , $^{77,79}\text{Br}$ ; deduced levels, J, $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. $^{76}\text{Ge}$ , $^{76}\text{Se}$ ; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of $^{76}\text{Ge}$ and $^{76}\text{Se}$ with QRPA and shell-model calculations. Discussed implications for neutrinoless double $\beta$ decay of $^{76}\text{Ge}$ to $^{76}\text{Se}$ . JOUR PRVCA 79 021301 |
| $^{77}\text{Se}$ | 2009MU15 | RADIOACTIVITY $^{79}\text{Br}$ , $^{77}\text{Se}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . JOUR NIMAE 610 654  |
| $^{77}\text{Br}$ | 2009EL02 | NUCLEAR REACTIONS $\text{Se}(p, X)^{75}\text{Br} / ^{76}\text{Br} / ^{77}\text{Br} / ^{80}\text{Br} / ^{82}\text{Br} / ^{73}\text{Se} / ^{75}\text{Se} / ^{71}\text{As} / ^{72}\text{As} / ^{76}\text{As} / ^{77}\text{As}$ , E <62 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions. JOUR RAACA 97 71  |
|                  | 2009KA06 | NUCLEAR REACTIONS $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(d, ^3\text{He})$ , (polarized d, $^3\text{He}$ ), E=80 MeV; measured $^3\text{He}$ spectra, $\sigma$ , angular distributions, vector analyzing powers. $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(^3\text{He}, d)$ , E=72 MeV; measured deuteron spectra, $\sigma$ , angular distributions. $^{73,75}\text{Ga}$ , $^{75,77}\text{As}$ , $^{77,79}\text{Br}$ ; deduced levels, J, $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. $^{76}\text{Ge}$ , $^{76}\text{Se}$ ; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of $^{76}\text{Ge}$ and $^{76}\text{Se}$ with QRPA and shell-model calculations. Discussed implications for neutrinoless double $\beta$ decay of $^{76}\text{Ge}$ to $^{76}\text{Se}$ . JOUR PRVCA 79 021301 |
|                  | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , E=2.5 GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{131}\text{Sb}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891  |
| $^{77}\text{Kr}$ | 2009ST04 | NUCLEAR REACTIONS $^9\text{Be}(^{124}\text{Xe}, X)^{73}\text{As} / ^{74}\text{Se} / ^{76}\text{Br} / ^{77}\text{Kr} / ^{78}\text{Rb} / ^{79}\text{Sr} / ^{80}\text{Y} / ^{81,82}\text{Zr} / ^{83}\text{Nb} / ^{84}\text{Nb} / ^{84}\text{Mo}$ , E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803  |
| $^{77}\text{Sr}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(p)$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007  |

KEYNUMBERS AND KEYWORDS

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**A=77 (continued)**

<sup>77</sup>Y      2007WEZX      RADIOACTIVITY <sup>75</sup>Sr, <sup>77,78</sup>Y, <sup>79,80</sup>Zr, <sup>83,84</sup>Mo, <sup>88,89</sup>Ru, <sup>92,93</sup>Pd, <sup>86</sup>Tc, <sup>90</sup>Rh, <sup>94,98</sup>In(EC); measured half-lives; <sup>76</sup>Y, <sup>78</sup>Zr, <sup>81</sup>Nb, <sup>85</sup>Tc(p); deduced half-life limits; <sup>78</sup>Y, <sup>82</sup>Nb, <sup>86</sup>Tc, <sup>90</sup>Rh, <sup>94</sup>Ag, <sup>98</sup>In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

**A=78**

<sup>78</sup>Cu      2009GR06      RADIOACTIVITY <sup>75,76,77,78,79</sup>Cu, <sup>79,80,81</sup>Zn, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447

            2009WI03      RADIOACTIVITY <sup>76,77,78</sup>Cu, <sup>83</sup>Ga( $\beta^-$ ); measured  $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502

<sup>78</sup>Zn      2008BA54      ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup>Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501

            2009F005      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318

            2009GR06      RADIOACTIVITY <sup>75,76,77,78,79</sup>Cu, <sup>79,80,81</sup>Zn, <sup>83,84,85</sup>Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447

            2009VA01      NUCLEAR REACTIONS <sup>120</sup>Sn(<sup>74</sup>Zn, <sup>74</sup>Zn'), E=2.87 MeV / nucleon; <sup>120</sup>Sn(<sup>76</sup>Zn, <sup>76</sup>Zn'), E=2.83 MeV / nucleon; <sup>108</sup>Pd(<sup>78</sup>Zn, <sup>78</sup>Zn'), E=2.87 MeV / nucleon; <sup>108</sup>Pd(<sup>80</sup>Zn, <sup>80</sup>Zn'), E=2.79 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , charged particle spectra, (particle)- $\gamma$  coin, measured half-lives of first 2<sup>+</sup> state, B(E2). <sup>74,76,78,80</sup>Zn, <sup>80</sup>Ga, <sup>80</sup>Rb, <sup>108</sup>Pd, <sup>120</sup>Sn; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of B(E2) values. Comparison with shell-model calculations. JOUR PRVCA 79 014309

            2009WI03      RADIOACTIVITY <sup>76,77,78</sup>Cu, <sup>83</sup>Ga( $\beta^-$ ); measured  $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502

<sup>78</sup>Ga      2009F005      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318

<sup>78</sup>As      2009ZH15      NUCLEAR REACTIONS <sup>79</sup>Br(n, 2n), E=14.6 MeV; <sup>81</sup>Br(n, 2n), (n, p), (n,  $\alpha$ ), E=13.5-14.6 MeV; Measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . Neutron activation, K-400 Intense Neutron Generator. JOUR ANEND 36 874

<sup>78</sup>Br      2009ZH15      NUCLEAR REACTIONS <sup>79</sup>Br(n, 2n), E=14.6 MeV; <sup>81</sup>Br(n, 2n), (n, p), (n,  $\alpha$ ), E=13.5-14.6 MeV; Measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . Neutron activation, K-400 Intense Neutron Generator. JOUR ANEND 36 874

KEYNUMBERS AND KEYWORDS

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**A=78 (continued)**

<sup>78</sup> Kr	20090B02	NUCLEAR REACTIONS <sup>197</sup> Au( <sup>68</sup> Se, X), E=92 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin, t-o-f method using SeGa array. <sup>68</sup> Se, <sup>78</sup> Kr; deduced levels, J, $\pi$ , B(E2). Coulomb excitation. Systematics of first 2+ states in Z=30-38 self-conjugate nuclei. Comparisons with several theoretical predictions. JOUR PRVCA 80 031304
<sup>78</sup> Rb	2009ST04	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>124</sup> Xe, X) <sup>73</sup> As / <sup>74</sup> Se / <sup>76</sup> Br / <sup>77</sup> Kr / <sup>78</sup> Rb / <sup>79</sup> Sr / <sup>80</sup> Y / <sup>81,82</sup> Zr / <sup>83</sup> Nb / <sup>84</sup> Nb / <sup>84</sup> Mo, E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803
<sup>78</sup> Sr	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007
<sup>78</sup> Y	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007
<sup>78</sup> Zr	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

**A=79**

<sup>79</sup> Cu	2009GR06	RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
<sup>79</sup> Zn	2008BA54	ATOMIC MASSES <sup>71,72,73,74,75,76,77,78,79,80,81</sup> Zn; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501
	2009GR06	RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
<sup>79</sup> Ga	2009GR06	RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
<sup>79</sup> As	2009DIZY	NUCLEAR REACTIONS <sup>82</sup> Se(p, $\alpha$ ) <sup>79</sup> As( $\beta^-$ ), E(cm)=18.625 MeV]; measured I $\gamma$ , E $\gamma$ ; deduced $\sigma$ of <sup>79</sup> Se. Preliminary. REPT MLL 2008 Annual,P30,Dillmann
<sup>79</sup> Se	2008FUZV	NUCLEAR REACTIONS <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
	2009MA09	NUCLEAR REACTIONS <sup>80</sup> Se( $\gamma$ , n) <sup>79</sup> Se, E=9.91-12.7 MeV; measured neutron spectra, $\sigma$ , Hauser-Feshbach analysis; deduced E1 strength functions for <sup>80</sup> Se and neutron capture cross section for <sup>79</sup> Se. Discussed implications on the abundances of <sup>80</sup> Kr and <sup>82</sup> Kr in the framework of phenomenological models for the s process. JOUR PRVCA 79 025801

KEYNUMBERS AND KEYWORDS

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**A=79 (continued)**

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| $^{79}\text{Br}$ | 2009KA06 | NUCLEAR REACTIONS $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(\text{d}, ^3\text{He})$ , (polarized d, $^3\text{He}$ ), E=80 MeV; measured $^3\text{He}$ spectra, $\sigma$ , angular distributions, vector analyzing powers. $^{74,76}\text{Ge}$ , $^{76,78}\text{Se}(^3\text{He}, \text{d})$ , E=72 MeV; measured deuteron spectra, $\sigma$ , angular distributions. $^{73,75}\text{Ga}$ , $^{75,77}\text{As}$ , $^{77,79}\text{Br}$ ; deduced levels, J, $\pi$ , angular momentum transfers, spectroscopic factors. Comparison of angular distribution and polarization data with distorted wave Born approximation (DWBA) calculations. $^{76}\text{Ge}$ , $^{76}\text{Se}$ ; deduced occupancies of valence proton orbitals in ground states. Comparison of occupancies of valence proton and neutron orbitals in ground states of $^{76}\text{Ge}$ and $^{76}\text{Se}$ with QRPA and shell-model calculations. Discussed implications for neutrinoless double $\beta$ decay of $^{76}\text{Ge}$ to $^{76}\text{Se}$ . JOUR PRVCA 79 021301 |
|                  | 2009MU15 | RADIOACTIVITY $^{79}\text{Br}$ , $^{77}\text{Se}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . JOUR NIMAE 610 654  |
| $^{79}\text{Sr}$ | 2009ST04 | NUCLEAR REACTIONS $^9\text{Be}(^{124}\text{Xe}, \text{X})^{73}\text{As}$ / $^{74}\text{Se}$ / $^{76}\text{Br}$ / $^{77}\text{Kr}$ / $^{78}\text{Rb}$ / $^{79}\text{Sr}$ / $^{80}\text{Y}$ / $^{81,82}\text{Zr}$ / $^{83}\text{Nb}$ / $^{84}\text{Nb}$ / $^{84}\text{Mo}$ , E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803   |
| $^{79}\text{Y}$  | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007   |
| $^{79}\text{Zr}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007   |

**A=80**

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| $^{80}\text{Zn}$ | 2008BA54 | ATOMIC MASSES $^{71,72,73,74,75,76,77,78,79,80,81}\text{Zn}$ ; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501   |
|                  | 2009GR06 | RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447   |
|                  | 2009VA01 | NUCLEAR REACTIONS $^{120}\text{Sn}(^{74}\text{Zn}, ^{74}\text{Zn}')$ , E=2.87 MeV / nucleon; $^{120}\text{Sn}(^{76}\text{Zn}, ^{76}\text{Zn}')$ , E=2.83 MeV / nucleon; $^{108}\text{Pd}(^{78}\text{Zn}, ^{78}\text{Zn}')$ , E=2.87 MeV / nucleon; $^{108}\text{Pd}(^{80}\text{Zn}, ^{80}\text{Zn}')$ , E=2.79 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , charged particle spectra, (particle)- $\gamma$ coin, measured half-lives of first $2^+$ state, B(E2). $^{74,76,78,80}\text{Zn}$ , $^{80}\text{Ga}$ , $^{80}\text{Rb}$ , $^{108}\text{Pd}$ , $^{120}\text{Sn}$ ; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of B(E2) values. Comparison with shell-model calculations. JOUR PRVCA 79 014309 |
| $^{80}\text{Ga}$ | 2009GR06 | RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447   |
|                  | 2009VA01 | NUCLEAR REACTIONS $^{120}\text{Sn}(^{74}\text{Zn}, ^{74}\text{Zn}')$ , E=2.87 MeV / nucleon; $^{120}\text{Sn}(^{76}\text{Zn}, ^{76}\text{Zn}')$ , E=2.83 MeV / nucleon; $^{108}\text{Pd}(^{78}\text{Zn}, ^{78}\text{Zn}')$ , E=2.87 MeV / nucleon; $^{108}\text{Pd}(^{80}\text{Zn}, ^{80}\text{Zn}')$ , E=2.79 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , charged particle spectra, (particle)- $\gamma$ coin, measured half-lives of first $2^+$ state, B(E2). $^{74,76,78,80}\text{Zn}$ , $^{80}\text{Ga}$ , $^{80}\text{Rb}$ , $^{108}\text{Pd}$ , $^{120}\text{Sn}$ ; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of B(E2) values. Comparison with shell-model calculations. JOUR PRVCA 79 014309 |

KEYNUMBERS AND KEYWORDS

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A=80 (continued)

<sup>80</sup> Br	2008PAZS	NUCLEAR REACTIONS <sup>81</sup> Br, <sup>86</sup> Sr( $\gamma$ , n), E=13-30 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>80</sup> Br, <sup>85</sup> Sr; deduced isomeric yield ratios. Betatron, activation method, Ge(Li) detector. CONF Moscow,P156,Palvanov
	2009EL02	NUCLEAR REACTIONS Se(p, X) <sup>75</sup> Br / <sup>76</sup> Br / <sup>77</sup> Br / <sup>80</sup> Br / <sup>82</sup> Br / <sup>73</sup> Se / <sup>75</sup> Se / <sup>71</sup> As / <sup>72</sup> As / <sup>76</sup> As / <sup>77</sup> As, E <62 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions. JOUR RAACA 97 71
	2009ZH15	NUCLEAR REACTIONS <sup>79</sup> Br(n, 2n), E=14.6 MeV; <sup>81</sup> Br(n, 2n), (n, p), (n, $\alpha$ ), E=13.5-14.6 MeV; Measured E $\gamma$ , I $\gamma$ , $\sigma$ . Neutron activation, K-400 Intense Neutron Generator. JOUR ANEND 36 874
<sup>80</sup> Kr	2009PI01	RADIOACTIVITY <sup>80</sup> Rb( $\beta^+$ ); measured daughter nucleus recoil angular distributions, recoil asymmetry; deduced tensor interaction constraints. Spin-polarized nucleus. Comparison with standard model predictions. JOUR PRVCA 79 015501
<sup>80</sup> Rb	2009PI01	RADIOACTIVITY <sup>80</sup> Rb( $\beta^+$ ); measured daughter nucleus recoil angular distributions, recoil asymmetry; deduced tensor interaction constraints. Spin-polarized nucleus. Comparison with standard model predictions. JOUR PRVCA 79 015501
	2009VA01	NUCLEAR REACTIONS <sup>120</sup> Sn( <sup>74</sup> Zn, <sup>74</sup> Zn'), E=2.87 MeV / nucleon; <sup>120</sup> Sn( <sup>76</sup> Zn, <sup>76</sup> Zn'), E=2.83 MeV / nucleon; <sup>108</sup> Pd( <sup>78</sup> Zn, <sup>78</sup> Zn'), E=2.87 MeV / nucleon; <sup>108</sup> Pd( <sup>80</sup> Zn, <sup>80</sup> Zn'), E=2.79 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , charged particle spectra, (particle)- $\gamma$ coin, measured half-lives of first 2 <sup>+</sup> state, B(E2). <sup>74,76,78,80</sup> Zn, <sup>80</sup> Ga, <sup>80</sup> Rb, <sup>108</sup> Pd, <sup>120</sup> Sn; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of B(E2) values. Comparison with shell-model calculations. JOUR PRVCA 79 014309
<sup>80</sup> Sr	2009ST04	RADIOACTIVITY <sup>80</sup> Y, <sup>81</sup> Zr, <sup>83,84</sup> Nb, <sup>84</sup> Mo(EC), ( $\beta^+$ ) [from <sup>9</sup> Be( <sup>124</sup> Xe, X), E=140 MeV / nucleon]; measured E $\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. <sup>64</sup> Ge, <sup>68</sup> Se, <sup>72</sup> Kr, <sup>76</sup> Sr, <sup>80</sup> Zr, <sup>84</sup> Mo, <sup>88</sup> Ru;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803
<sup>80</sup> Y	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007
	2009ST04	RADIOACTIVITY <sup>80</sup> Y, <sup>81</sup> Zr, <sup>83,84</sup> Nb, <sup>84</sup> Mo(EC), ( $\beta^+$ ) [from <sup>9</sup> Be( <sup>124</sup> Xe, X), E=140 MeV / nucleon]; measured E $\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. <sup>64</sup> Ge, <sup>68</sup> Se, <sup>72</sup> Kr, <sup>76</sup> Sr, <sup>80</sup> Zr, <sup>84</sup> Mo, <sup>88</sup> Ru;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803
	2009ST04	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>124</sup> Xe, X) <sup>73</sup> As / <sup>74</sup> Se / <sup>76</sup> Br / <sup>77</sup> Kr / <sup>78</sup> Rb / <sup>79</sup> Sr / <sup>80</sup> Y / <sup>81,82</sup> Zr / <sup>83</sup> Nb / <sup>84</sup> Nb / <sup>84</sup> Mo, E=140 MeV / nucleon; measured yields. JOUR PRVCA 79 015803
<sup>80</sup> Zr	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

KEYNUMBERS AND KEYWORDS

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**A=80 (continued)**

2009ST04 RADIOACTIVITY  $^{80}\text{Y}$ ,  $^{81}\text{Zr}$ ,  $^{83,84}\text{Nb}$ ,  $^{84}\text{Mo}(\text{EC})$ , ( $\beta^+$ ) [from  $^9\text{Be}(^{124}\text{Xe}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life.  $^{64}\text{Ge}$ ,  $^{68}\text{Se}$ ,  $^{72}\text{Kr}$ ,  $^{76}\text{Sr}$ ,  $^{80}\text{Zr}$ ,  $^{84}\text{Mo}$ ,  $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

**A=81**

$^{81}\text{Zn}$  2008BA54 ATOMIC MASSES  $^{71,72,73,74,75,76,77,78,79,80,81}\text{Zn}$ ; measured masses using the ISOLTRAP mass spectrometer. JOUR PRLTA 101 262501

2009GR06 RADIOACTIVITY  $^{75,76,77,78,79}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{83,84,85}\text{Ga}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced level scheme,  $J\pi$ . JOUR APOBB 40 447

$^{81}\text{Ga}$  2008SAZU NUCLEAR REACTIONS  $^{238}\text{U}(^{82}\text{Se}, \text{X})$ ,  $E=505, 515$  MeV;  $^{83}\text{As}$ ,  $^{82}\text{Ge}$ ,  $^{81}\text{Ga}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced  $J$ ,  $\pi$ . Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics),P298,Sahin

2009GR06 RADIOACTIVITY  $^{75,76,77,78,79}\text{Cu}$ ,  $^{79,80,81}\text{Zn}$ ,  $^{83,84,85}\text{Ga}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced level scheme,  $J\pi$ . JOUR APOBB 40 447

$^{81}\text{Se}$  2009P004 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{18}\text{O}, \text{X})^{81}\text{Se} / ^{82}\text{Se} / ^{83}\text{Se} / ^{85}\text{Se}$ ,  $E=85$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{81,82,83,85}\text{Se}$ ; deduced high-spin levels,  $J$ ,  $\pi$ , configurations. Comparison with systematics. Euroball IV array. JOUR ZAANE 39 295

2009ZH15 NUCLEAR REACTIONS  $^{79}\text{Br}(n, 2n)$ ,  $E=14.6$  MeV;  $^{81}\text{Br}(n, 2n)$ , ( $n, p$ ), ( $n, \alpha$ ),  $E=13.5-14.6$  MeV; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Neutron activation, K-400 Intense Neutron Generator. JOUR ANEND 36 874

$^{81}\text{Y}$  2009ST04 RADIOACTIVITY  $^{80}\text{Y}$ ,  $^{81}\text{Zr}$ ,  $^{83,84}\text{Nb}$ ,  $^{84}\text{Mo}(\text{EC})$ , ( $\beta^+$ ) [from  $^9\text{Be}(^{124}\text{Xe}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life.  $^{64}\text{Ge}$ ,  $^{68}\text{Se}$ ,  $^{72}\text{Kr}$ ,  $^{76}\text{Sr}$ ,  $^{80}\text{Zr}$ ,  $^{84}\text{Mo}$ ,  $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

$^{81}\text{Zr}$  2009ST04 RADIOACTIVITY  $^{80}\text{Y}$ ,  $^{81}\text{Zr}$ ,  $^{83,84}\text{Nb}$ ,  $^{84}\text{Mo}(\text{EC})$ , ( $\beta^+$ ) [from  $^9\text{Be}(^{124}\text{Xe}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life.  $^{64}\text{Ge}$ ,  $^{68}\text{Se}$ ,  $^{72}\text{Kr}$ ,  $^{76}\text{Sr}$ ,  $^{80}\text{Zr}$ ,  $^{84}\text{Mo}$ ,  $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

$^{81}\text{Nb}$  2007WEZX RADIOACTIVITY  $^{75}\text{Sr}$ ,  $^{77,78}\text{Y}$ ,  $^{79,80}\text{Zr}$ ,  $^{83,84}\text{Mo}$ ,  $^{88,89}\text{Ru}$ ,  $^{92,93}\text{Pd}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94,98}\text{In}(\text{EC})$ ; measured half-lives;  $^{76}\text{Y}$ ,  $^{78}\text{Zr}$ ,  $^{81}\text{Nb}$ ,  $^{85}\text{Tc}(p)$ ; deduced half-life limits;  $^{78}\text{Y}$ ,  $^{82}\text{Nb}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94}\text{Ag}$ ,  $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007



KEYNUMBERS AND KEYWORDS

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A=82

$^{82}\text{Ga}$	2009F005	NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{60m}\text{Mn} / ^{78m}\text{Ga} / ^{82m}\text{Ga} / ^{92m}\text{Br} / ^{95m}\text{Rb} / ^{98m}\text{Rb} / ^{92m}\text{Y} / ^{101m}\text{Y} / ^{112m}\text{Tc}$ , E=80 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. $^{60}\text{Mn}$ , $^{78,82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95,98}\text{Rb}$ , $^{92,101}\text{Y}$ , $^{112}\text{Tc}$ ; deduced levels, J, $\pi$ . $^{66m}\text{Cu}$ , $^{78m}\text{Zn}$ , $^{88m}\text{Br}$ , $^{95m}\text{Kr}$ , $^{96m}\text{Rb}$ , $^{97m,100m}\text{Sr}$ , $^{99m}\text{Mo}$ , $^{121m}\text{Pd}$ , $^{124m}\text{Sn}$ , $^{125m}\text{Xe}$ ; measured $E\gamma$ and half-lives. $^{91,92,93}\text{Y}$ ; measured $E\gamma$ . JOUR PRVCA 79 064318
$^{82}\text{Ge}$	2008SAZU	NUCLEAR REACTIONS $^{238}\text{U}(^{82}\text{Se}, \text{X})$ , E=505, 515 MeV; $^{83}\text{As}$ , $^{82}\text{Ge}$ , $^{81}\text{Ga}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced J, $\pi$ . Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics),P298,Sahin
$^{82}\text{Se}$	2008KOZV	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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limits, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Moscow,P203,Kochetov
	2009KOZY	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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limit, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
	2009P004	NUCLEAR REACTIONS $^{208}\text{Pb}(^{18}\text{O}, \text{X})^{81}\text{Se} / ^{82}\text{Se} / ^{83}\text{Se} / ^{85}\text{Se}$ , E=85 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{81,82,83,85}\text{Se}$ ; deduced high-spin levels, J, $\pi$ , configurations. Comparison with systematics. Euroball IV array. JOUR ZAANE 39 295
$^{82}\text{Br}$	2009EL02	NUCLEAR REACTIONS $\text{Se}(p, \text{X})^{75}\text{Br} / ^{76}\text{Br} / ^{77}\text{Br} / ^{80}\text{Br} / ^{82}\text{Br} / ^{73}\text{Se} / ^{75}\text{Se} / ^{71}\text{As} / ^{72}\text{As} / ^{76}\text{As} / ^{77}\text{As}$ , E <62 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions. JOUR RAACA 97 71
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , E=2.5 GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891
$^{82}\text{Kr}$	2008KOZV	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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limits, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Moscow,P203,Kochetov
	2009KOZY	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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limit, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
$^{82}\text{Rb}$	2009PI02	RADIOACTIVITY $^{82}\text{Sr}(\text{EC})$ ; measured half-life. JOUR ARISE 67 636
$^{82}\text{Sr}$	2009PI02	RADIOACTIVITY $^{82}\text{Sr}(\text{EC})$ ; measured half-life. JOUR ARISE 67 636
$^{82}\text{Zr}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(p)$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
$^{82}\text{Nb}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(p)$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007

## A=83

$^{83}\text{Ga}$	2009GR06	RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ . JOUR APOBB 40 447
	2009WI03	RADIOACTIVITY $^{76,77,78}\text{Cu}$ , $^{83}\text{Ga}(\beta^-)$ ; measured $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502
$^{83}\text{Ge}$	2008LEZV	RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-n)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin. Comparison with HFB+GCM calculations. REPT arXiv:0810.3890v1 [nucl-ex]
	2009GR06	RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ . JOUR APOBB 40 447
	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $U(\gamma, X)$ , $E=0-50$ MeV]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
	2009LEZZ	RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $(\beta^-n)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin.; deduced isomeric states, energy levels, $J$ , $\pi$ , collectivity. Comparison with HFB+GCM calculations. PREPRINT Lebois,7/15/2009
	2009VE11	RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ ; $^{84}\text{As}$ , $^{83}\text{Ge}$ ; measured $E\gamma$ , $I\gamma$ ; deduced level energies, $J$ , $\pi$ , $\beta$ -n transitions. JOUR IMPEE 18 1976
	2009WI03	RADIOACTIVITY $^{76,77,78}\text{Cu}$ , $^{83}\text{Ga}(\beta^-)$ ; measured $\beta$ -delayed neutron emission probabilities. JOUR PRLTA 102 142502
$^{83}\text{As}$	2008SAZU	NUCLEAR REACTIONS $^{238}\text{U}(\text{}^{82}\text{Se}, X)$ , $E=505, 515$ MeV; $^{83}\text{As}$ , $^{82}\text{Ge}$ , $^{81}\text{Ga}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $J$ , $\pi$ . Comparison with shell model calculations. CONF Cappadocia (Nuclear Physics and Astrophysics),P298,Sahin
	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $U(\gamma, X)$ , $E=0-50$ MeV]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
$^{83}\text{Se}$	2009P004	NUCLEAR REACTIONS $^{208}\text{Pb}(\text{}^{18}\text{O}, X)^{81}\text{Se} / ^{82}\text{Se} / ^{83}\text{Se} / ^{85}\text{Se}$ , $E=85$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{81,82,83,85}\text{Se}$ ; deduced high-spin levels, $J$ , $\pi$ , configurations. Comparison with systematics. Euroball IV array. JOUR ZAANE 39 295
$^{83}\text{Kr}$	2009KA30	RADIOACTIVITY $^{83m}\text{Kr}(\text{IT})$ [from $^{83}\text{Rb}(\text{EC})$ ]; measured $E\gamma$ , conversion electrons, $(\text{ce})(\text{ce})(\text{t})$ , and level half-life using liquid xenon scintillation detector. Calibration of liquid xenon detector. Relevance to classical turbulence in liquid or gaseous helium. JOUR PRVCA 80 045809
$^{83}\text{Rb}$	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Sb}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891

KEYNUMBERS AND KEYWORDS

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**A=83 (continued)**

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|                  | 2009SC22 | NUCLEAR REACTIONS $^{76}\text{Ge}(^{11}\text{B}, 4n)$ , $E=45, 50$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , DCO, half-lives by DSAM, multipolarities. $^{83}\text{Rb}$ ; deduced levels, $J$ , $\pi$ , bands, dipole bands, B(M1), B(E1), and B(E2). GASP array. Comparison with shell model calculations. JOUR PRVCA 80 044305   |
| $^{83}\text{Zr}$ | 2009ST04 | RADIOACTIVITY $^{80}\text{Y}$ , $^{81}\text{Zr}$ , $^{83,84}\text{Nb}$ , $^{84}\text{Mo}(\text{EC})$ , $(\beta^+)$ [from $^9\text{Be}(^{124}\text{Xe}, \text{X})$ , $E=140$ MeV / nucleon]; measured $E\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. $^{64}\text{Ge}$ , $^{68}\text{Se}$ , $^{72}\text{Kr}$ , $^{76}\text{Sr}$ , $^{80}\text{Zr}$ , $^{84}\text{Mo}$ , $^{88}\text{Ru}$ ; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803         |
| $^{83}\text{Nb}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007 |
|                  | 2009ST04 | RADIOACTIVITY $^{80}\text{Y}$ , $^{81}\text{Zr}$ , $^{83,84}\text{Nb}$ , $^{84}\text{Mo}(\text{EC})$ , $(\beta^+)$ [from $^9\text{Be}(^{124}\text{Xe}, \text{X})$ , $E=140$ MeV / nucleon]; measured $E\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. $^{64}\text{Ge}$ , $^{68}\text{Se}$ , $^{72}\text{Kr}$ , $^{76}\text{Sr}$ , $^{80}\text{Zr}$ , $^{84}\text{Mo}$ , $^{88}\text{Ru}$ ; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803         |
| $^{83}\text{Mo}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007 |

**A=84**

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| $^{84}\text{Ga}$ | 2008LEZV | RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-n)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin. Comparison with HFB+GCM calculations. REPT arXiv:0810.3890v1 [nucl-ex]  |
|                  | 2008WIZZ | RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ [from $^{235}\text{U}(\text{p}, \text{F})$ ]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin.; deduced $^{84}\text{Ge}$ , $^{84}\text{As}$ level scheme, $J$ , $\pi$ , $^{84}\text{Ga}$ delayed-neutron emission probabilities. CONF Sanibel(Fission and Properties of Neutron-Rich Nuclei) Proc,P663   |
|                  | 2009GR06 | RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ . JOUR APOBB 40 447  |
|                  | 2009LE26 | RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, \text{X})$ , $E=0-50$ MeV]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308 |
|                  | 2009LEZZ | RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $(\beta^-n)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin.; deduced isomeric states, energy levels, $J$ , $\pi$ , collectivity. Comparison with HFB+GCM calculations. PREPRINT Lebois,7/15/2009  |
|                  | 2009VE11 | RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ ; $^{84}\text{As}$ , $^{83}\text{Ge}$ ; measured $E\gamma$ , $I\gamma$ ; deduced level energies, $J$ , $\pi$ , $\beta$ -n transitions. JOUR IMPEE 18 1976   |

KEYNUMBERS AND KEYWORDS

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A=84 (*continued*)

$^{84}\text{Ge}$	2008LEZV	RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $^{84}\text{Ga}(\beta^-n)$ ; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin. Comparison with HFB+GCM calculations. REPT arXiv:0810.3890v1 [nucl-ex]
	2008WIZZ	RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ [from $^{235}\text{U}(p, F)$ ]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin.; deduced $^{84}\text{Ge}$ , $^{84}\text{As}$ level scheme, $J$ , $\pi$ , $^{84}\text{Ga}$ delayed-neutron emission probabilities. CONF Sanibel(Fission and Properties of Neutron-Rich Nuclei) Proc,P663
	2009GR06	RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced level scheme, $J\pi$ . JOUR APOBB 40 447
	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, X)$ , $E=0-50$ MeV]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E_\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
	2009LEZZ	RADIOACTIVITY $^{84}\text{Ga}(\beta^-)$ , $(\beta^-n)$ ; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin.; deduced isomeric states, energy levels, $J$ , $\pi$ , collectivity. Comparison with HFB+GCM calculations. PREPRINT Lebois,7/15/2009
	2009VE11	RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ ; $^{84}\text{As}$ , $^{83}\text{Ge}$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced level energies, $J$ , $\pi$ , $\beta$ -n transitions. JOUR IMPEE 18 1976
$^{84}\text{As}$	2008WIZZ	RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ [from $^{235}\text{U}(p, F)$ ]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin.; deduced $^{84}\text{Ge}$ , $^{84}\text{As}$ level scheme, $J$ , $\pi$ , $^{84}\text{Ga}$ delayed-neutron emission probabilities. CONF Sanibel(Fission and Properties of Neutron-Rich Nuclei) Proc,P663
	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, X)$ , $E=0-50$ MeV]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E_\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
	2009VE11	RADIOACTIVITY $^{84}\text{Ga}$ , $^{84}\text{Ge}(\beta^-)$ ; $^{84}\text{As}$ , $^{83}\text{Ge}$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced level energies, $J$ , $\pi$ , $\beta$ -n transitions. JOUR IMPEE 18 1976
$^{84}\text{Se}$	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, X)$ , $E=0-50$ MeV]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E_\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32-40$ (even), $N=52$ ; $N=42-54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
$^{84}\text{Br}$	2008VIZY	NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}(\gamma, f)$ , $E=8.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; $^{84}\text{Br}$ , $^{132}\text{Sb}$ , $^{133}\text{Te}$ , $^{135}\text{Xe}$ ; deduced isomer yield ratios. Microtron, activation method. CONF Moscow,P134,Vishnevsky
	2009VI03	NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}(\gamma, F)^{84}\text{Br} / ^{132}\text{Sb} / ^{133}\text{Te} / ^{135}\text{Xe}$ , $E<8.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced mean angular momenta of fission fragments, isomeric yield ratios. JOUR BRSPE 73 733

KEYNUMBERS AND KEYWORDS

A=84 (continued)

	2009VIZY	NUCLEAR REACTIONS $^{239}\text{Pu}$ , $^{241}\text{Am}(\gamma, f)$ , $E(\text{end point})=10, 17$ MeV; measured $E\gamma$ , $I\gamma$ . $^{84}\text{Br}$ , $^{133}\text{Te}$ , $^{135}\text{Xe}$ ; deduced isomeric yield ratios. Activation method CONF Cheboksary,P138,Vishnevsky
$^{84}\text{Kr}$	2009RE03	ATOMIC MASSES $^{84,86}\text{Kr}$ , $^{129,132}\text{Xe}$ ; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012506
$^{84}\text{Rb}$	2008ZHZY	NUCLEAR REACTIONS $^{85,87}\text{Rb}(\gamma, n)$ , $E=10-18$ MeV; measured $E\gamma$ , $I\gamma$ ; $^{84,86}\text{Rb}$ ; deduced isomer yield ratios. CONF Moscow,P133,Zheltonozhsky
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , $E=2.5$ GeV; $^{47}\text{Sc}$ , $^{48}\text{V}$ , $^{59}\text{Fe}$ , $^{72}\text{Zn}$ , $^{75}\text{Se}$ , $^{77}\text{Br}$ , $^{83}\text{Rb}$ , $^{85}\text{Kr}$ , $^{87}\text{Y}$ , $^{88}\text{Kr}$ , $^{88}\text{Zr}$ , $^{89}\text{Zr}$ , $^{91}\text{Sr}$ , $^{92}\text{Sr}$ , $^{95}\text{Zr}$ , $^{97}\text{Zr}$ , $^{99}\text{Mo}$ , $^{99}\text{Rh}$ , $^{103}\text{Ru}$ , $^{105}\text{Ru}$ , $^{105}\text{Rh}$ , $^{105}\text{Ag}$ , $^{111}\text{Ag}$ , $^{111}\text{In}$ , $^{112}\text{Ag}$ , $^{115}\text{Cd}$ , $^{117}\text{Cd}$ , $^{121}\text{Te}$ , $^{129}\text{Sb}$ , $^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891
$^{84}\text{Sr}$	2009SA17	NUCLEAR REACTIONS $^{86}\text{Sr}(p, n)$ , $^{85}\text{Rb}(^3\text{He}, 2n)$ , $(\alpha, 3n)$ , $E=6-15$ MeV; measured $\sigma$ . $^{86}\text{Sr}(p, Xn)$ , $^{86}\text{Sr}(d, Xn)$ , $^{85}\text{Rb}(\alpha, Xn)$ , $^{85}\text{Rb}(^3\text{He}, Xn)$ , $\text{Zr}(d, \alpha xn)$ , $E=6-15$ MeV; Calculated $\sigma$ , production yield using Alice-ASH code; $^{86,85}\text{Y}$ , $^{84,85,86}\text{Sr}$ ; calculated excitation functions. JOUR ARISE 67 1392
$^{84}\text{Y}$	2008WE10	ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{84}\text{Zr}$	2009ST04	RADIOACTIVITY $^{80}\text{Y}$ , $^{81}\text{Zr}$ , $^{83,84}\text{Nb}$ , $^{84}\text{Mo}(\text{EC})$ , $(\beta^+)$ [from $^9\text{Be}(^{124}\text{Xe}, X)$ , $E=140$ MeV / nucleon]; measured $E\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. $^{64}\text{Ge}$ , $^{68}\text{Se}$ , $^{72}\text{Kr}$ , $^{76}\text{Sr}$ , $^{80}\text{Zr}$ , $^{84}\text{Mo}$ , $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803
$^{84}\text{Nb}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(p)$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
	2009ST04	RADIOACTIVITY $^{80}\text{Y}$ , $^{81}\text{Zr}$ , $^{83,84}\text{Nb}$ , $^{84}\text{Mo}(\text{EC})$ , $(\beta^+)$ [from $^9\text{Be}(^{124}\text{Xe}, X)$ , $E=140$ MeV / nucleon]; measured $E\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. $^{64}\text{Ge}$ , $^{68}\text{Se}$ , $^{72}\text{Kr}$ , $^{76}\text{Sr}$ , $^{80}\text{Zr}$ , $^{84}\text{Mo}$ , $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803
$^{84}\text{Mo}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(p)$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
	2009ST04	RADIOACTIVITY $^{80}\text{Y}$ , $^{81}\text{Zr}$ , $^{83,84}\text{Nb}$ , $^{84}\text{Mo}(\text{EC})$ , $(\beta^+)$ [from $^9\text{Be}(^{124}\text{Xe}, X)$ , $E=140$ MeV / nucleon]; measured $E\gamma$ , (particle)- $\gamma$ coin, (particle)- $\beta$ coin, half-life. $^{64}\text{Ge}$ , $^{68}\text{Se}$ , $^{72}\text{Kr}$ , $^{76}\text{Sr}$ , $^{80}\text{Zr}$ , $^{84}\text{Mo}$ , $^{88}\text{Ru}$ ;systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

A=85

$^{85}\text{Ga}$	2009GR06	RADIOACTIVITY $^{75,76,77,78,79}\text{Cu}$ , $^{79,80,81}\text{Zn}$ , $^{83,84,85}\text{Ga}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced level scheme, $J\pi$ . JOUR APOBB 40 447
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KEYNUMBERS AND KEYWORDS

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**A=85 (continued)**

<sup>85</sup> Ge	2009GR06	RADIOACTIVITY <sup>75,76,77,78,79</sup> Cu, <sup>79,80,81</sup> Zn, <sup>83,84,85</sup> Ga( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced level scheme, J $\pi$ . JOUR APOBB 40 447
<sup>85</sup> Se	2009P004	NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>18</sup> O, X) <sup>81</sup> Se / <sup>82</sup> Se / <sup>83</sup> Se / <sup>85</sup> Se, E=85 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>81,82,83,85</sup> Se; deduced high-spin levels, J, $\pi$ , configurations. Comparison with systematics. Euroball IV array. JOUR ZAANE 39 295
<sup>85</sup> Kr	2009NA10	NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>60</sup> measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
<sup>85</sup> Sr	2007KIZX	NUCLEAR REACTIONS <sup>85</sup> Rb(p, n), E=2.2-4 MeV; measured $\beta\gamma$ -coin., E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , s-factor. Comparison with NON-SMOKER code calculation. REPT ATOMKI 2007 Annual,P25,Kiss
	2008PAZS	NUCLEAR REACTIONS <sup>81</sup> Br, <sup>86</sup> Sr( $\gamma$ , n), E=13-30 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>80</sup> Br, <sup>85</sup> Sr; deduced isomeric yield ratios. Betatron, activation method, Ge(Li) detector. CONF Moscow,P156,Palvanov
	2009LU03	NUCLEAR REACTIONS <sup>86</sup> Sr, <sup>184</sup> Os(n, 2n), <sup>190</sup> Os(n, p), E=13.5-14.8 MeV; measured E $\gamma$ , I $\gamma$ , cross sections using the activation technique. Compared results to model calculations, existing data, and evaluated databases. JOUR JRNC D 279 443
	2009RA24	NUCLEAR REACTIONS <sup>85</sup> Rb(p, n), E(cm)=2.16-3.96 MeV; measured E $\gamma$ , I $\gamma$ , $\sigma$ by activation method; deduced astrophysical S factors, astrophysical reactivity for <sup>85</sup> Rb(p, n) <sup>85</sup> Sr and <sup>85</sup> Sr(n, p) <sup>85</sup> Rb reactions as a function of stellar plasma temperature. Comparison with theoretical S factors. JOUR PRVCA 80 035801
	2009SA17	NUCLEAR REACTIONS <sup>86</sup> Sr(p, n), <sup>85</sup> Rb( <sup>3</sup> He, 2n), ( $\alpha$ , 3n), E=6-15 MeV; measured $\sigma$ . <sup>86</sup> Sr(p, Xn), <sup>86</sup> Sr(d, Xn), <sup>85</sup> Rb( $\alpha$ , Xn), <sup>85</sup> Rb( <sup>3</sup> He, Xn), Zr(d, $\alpha$ xn), E=6-15 MeV; Calculated $\sigma$ , production yield using Alice-ASH code; <sup>86,85</sup> Y, <sup>84,85,86</sup> Sr; calculated excitation functions. JOUR ARISE 67 1392
<sup>85</sup> Y	2009RU03	NUCLEAR REACTIONS <sup>76</sup> Ge( <sup>14</sup> N, 4n), E=44-54 MeV; measured $\sigma$ (E); <sup>52</sup> Cr( <sup>37</sup> Cl, X) <sup>85</sup> Y / <sup>86</sup> Y, E=115 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma^-$ , (neutron) $\gamma$ -coin using GASP array, NE213 and HPGe detectors. <sup>85,86</sup> Y deduced levels, J, $\pi$ , configurations, multipolarities, branching fraction, T <sub>1/2</sub> . Comparison with shell model calculations. JOUR NUPAB 818 1
	2009SA17	NUCLEAR REACTIONS <sup>86</sup> Sr(p, n), <sup>85</sup> Rb( <sup>3</sup> He, 2n), ( $\alpha$ , 3n), E=6-15 MeV; measured $\sigma$ . <sup>86</sup> Sr(p, Xn), <sup>86</sup> Sr(d, Xn), <sup>85</sup> Rb( $\alpha$ , Xn), <sup>85</sup> Rb( <sup>3</sup> He, Xn), Zr(d, $\alpha$ xn), E=6-15 MeV; Calculated $\sigma$ , production yield using Alice-ASH code; <sup>86,85</sup> Y, <sup>84,85,86</sup> Sr; calculated excitation functions. JOUR ARISE 67 1392
<sup>85</sup> Nb	2009EL08	NUCLEAR REACTIONS <sup>92</sup> Mo(p, X) <sup>85</sup> Nb / <sup>86</sup> Nb / <sup>87</sup> Nb / <sup>88</sup> Nb / <sup>89</sup> Nb / <sup>90</sup> Nb / <sup>91</sup> Nb, E=62 MeV; <sup>106</sup> Cd(p, X) <sup>101</sup> In / <sup>102</sup> In / <sup>103</sup> In / <sup>104</sup> In / <sup>105</sup> In / <sup>106</sup> In / <sup>107</sup> In / <sup>108</sup> In / <sup>109</sup> In, E=62 MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
<sup>85</sup> Tc	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

KEYNUMBERS AND KEYWORDS

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**A=86**

<sup>86</sup> Br	2009P010	NUCLEAR REACTIONS <sup>208</sup> Pb( <sup>18</sup> O, X) <sup>86</sup> Br / <sup>88</sup> Br, E=85 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , $\gamma(t)$ using the Euroball IV array. <sup>86,88</sup> Br; deduced high-spin levels, J, $\pi$ , multipolarities, configurations. Comparison with systematics. JOUR ZAANE 40 131
<sup>86</sup> Kr	2009RE03	ATOMIC MASSES <sup>84,86</sup> Kr, <sup>129,132</sup> Xe; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012506
<sup>86</sup> Rb	2008ZHZY	NUCLEAR REACTIONS <sup>85,87</sup> Rb( $\gamma$ , n), E=10-18 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>84,86</sup> Rb; deduced isomer yield ratios. CONF Moscow,P133,Zheltonozhsky
<sup>86</sup> Sr	2009SA17	NUCLEAR REACTIONS <sup>86</sup> Sr(p, n), <sup>85</sup> Rb( <sup>3</sup> He, 2n), ( $\alpha$ , 3n), E=6-15 MeV; measured $\sigma$ . <sup>86</sup> Sr(p, Xn), <sup>86</sup> Sr(d, Xn), <sup>85</sup> Rb( $\alpha$ , Xn), <sup>85</sup> Rb( <sup>3</sup> He, Xn), Zr(d, $\alpha$ xn), E=6-15 MeV; Calculated $\sigma$ , production yield using Alice-ASH code; <sup>86,85</sup> Y, <sup>84,85,86</sup> Sr; calculated excitation functions. JOUR ARISE 67 1392
<sup>86</sup> Y	2009RA25	NUCLEAR REACTIONS Zr( $\gamma$ , X) <sup>89</sup> Zr / <sup>86</sup> Y, <sup>89</sup> Y( $\gamma$ , xn) <sup>87,86</sup> Y, E=50-70 MeV; measured E, I $\gamma$ ; deduced isomeric yields ratios. JOUR NIMBE 267 3511
	2009RU03	NUCLEAR REACTIONS <sup>76</sup> Ge( <sup>14</sup> N, 4n), E=44-54 MeV; measured $\sigma(E)$ ; <sup>52</sup> Cr( <sup>37</sup> Cl, X) <sup>85</sup> Y / <sup>86</sup> Y, E=115 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (neutron) $\gamma$ -coin using GASP array, NE213 and HPGe detectors. <sup>85,86</sup> Y deduced levels, J, $\pi$ , configurations, multipolarities, branching fraction, T <sub>1/2</sub> . Comparison with shell model calculations. JOUR NUPAB 818 1
	2009SA17	NUCLEAR REACTIONS <sup>86</sup> Sr(p, n), <sup>85</sup> Rb( <sup>3</sup> He, 2n), ( $\alpha$ , 3n), E=6-15 MeV; measured $\sigma$ . <sup>86</sup> Sr(p, Xn), <sup>86</sup> Sr(d, Xn), <sup>85</sup> Rb( $\alpha$ , Xn), <sup>85</sup> Rb( <sup>3</sup> He, Xn), Zr(d, $\alpha$ xn), E=6-15 MeV; Calculated $\sigma$ , production yield using Alice-ASH code; <sup>86,85</sup> Y, <sup>84,85,86</sup> Sr; calculated excitation functions. JOUR ARISE 67 1392
<sup>86</sup> Nb	2009EL08	NUCLEAR REACTIONS <sup>92</sup> Mo(p, X) <sup>85</sup> Nb / <sup>86</sup> Nb / <sup>87</sup> Nb / <sup>88</sup> Nb / <sup>89</sup> Nb / <sup>90</sup> Nb / <sup>91</sup> Nb, E=62 MeV; <sup>106</sup> Cd(p, X) <sup>101</sup> In / <sup>102</sup> In / <sup>103</sup> In / <sup>104</sup> In / <sup>105</sup> In / <sup>106</sup> In / <sup>107</sup> In / <sup>108</sup> In / <sup>109</sup> In, E=62 MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
<sup>86</sup> Mo	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007
<sup>86</sup> Tc	2007WEZX	RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007

**A=87**

<sup>87</sup> Y	2009LIZZ	NUCLEAR REACTIONS Au, Nb, Ta(p, X), E=160, 247, 325 MeV; measured E $\gamma$ , I $\gamma$ . <sup>87</sup> Y, <sup>177</sup> Lu, <sup>193,195</sup> Hg, <sup>194</sup> Ir, <sup>196</sup> Au; deduced isomeric yield ratios depending on Ep. Activation Method. CONF Cheboksary,P142,Libanova
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KEYNUMBERS AND KEYWORDS

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**A=87 (continued)**

- 2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, \text{F})$ ,  $E=2.5$  GeV;  
 $^{47}\text{Sc}$ ;  $^{48}\text{V}$ ;  $^{59}\text{Fe}$ ;  $^{72}\text{Zn}$ ;  $^{75}\text{Se}$ ;  $^{77}\text{Br}$ ;  $^{83}\text{Rb}$ ;  $^{85}\text{Kr}$ ;  $^{87}\text{Y}$ ;  $^{88}\text{Kr}$ ;  $^{88}\text{Zr}$ ;  $^{89}\text{Zr}$ ;  $^{91}\text{Sr}$ ;  $^{92}\text{Sr}$ ;  
 $^{95}\text{Zr}$ ;  $^{97}\text{Zr}$ ;  $^{99}\text{Mo}$ ;  $^{99}\text{Rh}$ ;  $^{103}\text{Ru}$ ;  $^{105}\text{Ru}$ ;  $^{105}\text{Rh}$ ;  $^{105}\text{Ag}$ ;  $^{111}\text{Ag}$ ;  $^{111}\text{In}$ ;  $^{112}\text{Ag}$ ;  $^{115}\text{Cd}$ ;  $^{117}\text{Cd}$ ;  $^{121}\text{Te}$ ;  $^{129}\text{Sb}$ ;  $^{60}\text{Ni}$   
 Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009TR01 NUCLEAR REACTIONS  $^{116}\text{Cd}$ ,  $^{138}\text{Ce}$ ,  $^{153}\text{Eu}(\gamma, \text{n})$ ,  $E=10\text{-}25$  MeV;  
 $^{96}\text{Mo}$ ,  $^{118}\text{Sn}(\gamma, \text{p})$ ,  $E=10\text{-}25$  MeV;  $^{89}\text{Y}(\gamma, 2\text{n})$ ,  $E=10\text{-}25$  MeV;  $^{106}\text{Cd}$ ,  
 $^{112}\text{Sn}(\gamma, \text{np})$ ,  $E=10\text{-}25$  MeV; measured  $E\gamma$ ,  $I\gamma$ , isomeric ratios. JOUR  
 PPNLA 6 126
- $^{87}\text{Zr}$  2008WE10 ATOMIC MASSES  $^{84}\text{Y}$ ,  $^{87}\text{Zr}$ ,  $^{88,89}\text{Mo}$ ,  $^{88,89,90,91,92}\text{Tc}$ ,  $^{90,91,92,93}\text{Ru}$ ,  
 $^{92,93,94,95}\text{Rh}$ ,  $^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with  
 evaluated data. JOUR PRVCA 78 054310
- $^{87}\text{Nb}$  2009EL08 NUCLEAR REACTIONS  $^{92}\text{Mo}(\text{p}, \text{X})^{85}\text{Nb}$  /  $^{86}\text{Nb}$  /  $^{87}\text{Nb}$  /  $^{88}\text{Nb}$  /  
 $^{89}\text{Nb}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$ ,  $E=62$  MeV;  $^{106}\text{Cd}(\text{p}, \text{X})^{101}\text{In}$  /  $^{102}\text{In}$  /  $^{103}\text{In}$  /  
 $^{104}\text{In}$  /  $^{105}\text{In}$  /  $^{106}\text{In}$  /  $^{107}\text{In}$  /  $^{108}\text{In}$  /  $^{109}\text{In}$ ,  $E=62$  MeV; measured  
 yields; deduced production  $\sigma$ . Enriched target. JOUR ZAANE 40 1

**A=88**

- $^{88}\text{Br}$  2009F005 NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{60\text{m}}\text{Mn}$  /  $^{78\text{m}}\text{Ga}$  /  $^{82\text{m}}\text{Ga}$  /  
 $^{92\text{m}}\text{Br}$  /  $^{95\text{m}}\text{Rb}$  /  $^{98\text{m}}\text{Rb}$  /  $^{92\text{m}}\text{Y}$  /  $^{101\text{m}}\text{Y}$  /  $^{112\text{m}}\text{Tc}$ ,  $E=80$  MeV /  
 nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives.  $^{60}\text{Mn}$ ,  $^{78,82}\text{Ga}$ ,  
 $^{92}\text{Br}$ ,  $^{95,98}\text{Rb}$ ,  $^{92,101}\text{Y}$ ,  $^{112}\text{Tc}$ ; deduced levels,  $J$ ,  $\pi$ .  $^{66\text{m}}\text{Cu}$ ,  $^{78\text{m}}\text{Zn}$ ,  
 $^{88\text{m}}\text{Br}$ ,  $^{95\text{m}}\text{Kr}$ ,  $^{96\text{m}}\text{Rb}$ ,  $^{97\text{m},100\text{m}}\text{Sr}$ ,  $^{99\text{m}}\text{Mo}$ ,  $^{121\text{m}}\text{Pd}$ ,  $^{124\text{m}}\text{Sn}$ ,  $^{125\text{m}}\text{Xe}$ ;  
 measured  $E\gamma$  and half-lives.  $^{91,92,93}\text{Y}$ ; measured  $E\gamma$ . JOUR PRVCA 79  
 064318
- 2009P010 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{18}\text{O}, \text{X})^{86}\text{Br}$  /  $^{88}\text{Br}$ ,  $E=85$  MeV;  
 measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$  using the Euroball IV array.  
 $^{86,88}\text{Br}$ ; deduced high-spin levels,  $J$ ,  $\pi$ , multipolarities, configurations.  
 Comparison with systematics. JOUR ZAANE 40 131
- $^{88}\text{Kr}$  2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, \text{F})$ ,  $E=2.5$  GeV;  
 $^{47}\text{Sc}$ ;  $^{48}\text{V}$ ;  $^{59}\text{Fe}$ ;  $^{72}\text{Zn}$ ;  $^{75}\text{Se}$ ;  $^{77}\text{Br}$ ;  $^{83}\text{Rb}$ ;  $^{85}\text{Kr}$ ;  $^{87}\text{Y}$ ;  $^{88}\text{Kr}$ ;  $^{88}\text{Zr}$ ;  $^{89}\text{Zr}$ ;  $^{91}\text{Sr}$ ;  $^{92}\text{Sr}$ ;  
 $^{95}\text{Zr}$ ;  $^{97}\text{Zr}$ ;  $^{99}\text{Mo}$ ;  $^{99}\text{Rh}$ ;  $^{103}\text{Ru}$ ;  $^{105}\text{Ru}$ ;  $^{105}\text{Rh}$ ;  $^{105}\text{Ag}$ ;  $^{111}\text{Ag}$ ;  $^{111}\text{In}$ ;  $^{112}\text{Ag}$ ;  $^{115}\text{Cd}$ ;  $^{117}\text{Cd}$ ;  $^{121}\text{Te}$ ;  $^{129}\text{Sb}$ ;  $^{60}\text{Ni}$   
 Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- $^{88}\text{Rb}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  
 $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+\text{p}$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$   
 decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- $^{88}\text{Sr}$  2008NOZZ NUCLEAR REACTIONS  $^{238}\text{U}(\alpha, \text{X})$ ,  $E=62$  MeV;  $^{19}\text{F}$ ,  $^{25}\text{Mg}$ ,  $^{32}\text{S}$ ,  $^{34}\text{S}$ ,  
 $^{88}\text{Sr}$ ,  $^{103}\text{Rh}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced neutron clusters. Activation  
 method, Ge detector. CONF Moscow,P74,Novatsky
- 2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  
 $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+\text{p}$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$   
 decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- $^{88}\text{Y}$  2009DI05 NUCLEAR REACTIONS  $^{93}\text{Nb}(\text{p}, \text{X})^{90}\text{Mo}$  /  $^{93}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$  /  
 $^{92}\text{Nb}$  /  $^{88}\text{Zr}$  /  $^{89}\text{Zr}$  /  $^{88}\text{Y}$ ,  $E = 0\text{-}37$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ .  
 Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE  
 267 3364



KEYNUMBERS AND KEYWORDS

**A=88 (continued)**

	2009MA58	NUCLEAR REACTIONS $^{89}\text{Y}(^9\text{Be}, 3\text{n}), (^9\text{Be}, 4\text{n}), (^9\text{Be}, 5\text{n}), (\text{p}, \text{np}), (\text{p}, \text{d}), \text{E} < 47.5 \text{ MeV}$ ; measured $\text{E}\gamma, \text{I}\gamma$ ; deduced $^{93,94,95}\text{Tc}$ product yield as function of projectile energy. Comparison with PACE-II prediction. JOUR RAACA 97 663
	2009OM01	NUCLEAR REACTIONS $^{89}\text{Y}(\text{p}, \text{n}), (\text{p}, 2\text{n}), (\text{p}, \text{pn}), \text{E} < 17.7 \text{ MeV}$ ; measured activation sample $\text{E}\gamma, \text{I}\gamma$ ; deduced reaction $\sigma$ . Comparison with ALICE-IPPE code. JOUR RAACA 97 467
	2009VA05	NUCLEAR REACTIONS $^{88}\text{Sr}(\text{p}, \text{n}), \text{Cu}(\text{p}, \text{x}), \text{E}=5\text{-}20 \text{ MeV}; ^{65}\text{Zn}$ ; Measured $\sigma$ . $\text{SrCl}_2$ target. Ion exchange chromatographic methods. JOUR ARISE 67 1320
$^{88}\text{Zr}$	2009DI05	NUCLEAR REACTIONS $^{93}\text{Nb}(\text{p}, \text{X})^{90}\text{Mo} / ^{93}\text{Mo} / ^{90}\text{Nb} / ^{91}\text{Nb} / ^{92}\text{Nb} / ^{88}\text{Zr} / ^{89}\text{Zr} / ^{88}\text{Y}, \text{E} = 0\text{-}37 \text{ MeV}$ ; measured $\text{E}\gamma, \text{I}\gamma$ ; deduced $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
	2009DU10	NUCLEAR REACTIONS $\text{Y}(\text{p}, \text{X})^{88}\text{Zr} / ^{89}\text{Zr}, \text{E}=20 \text{ MeV}$ ; measured $\text{E}\gamma, \text{I}\gamma$ . JOUR JRNC D 281 663
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F}), \text{E}=2.5 \text{ GeV}; ^{47}\text{Sc}; ^{48}\text{V}; ^{59}\text{Fe}; ^{72}\text{Zn}; ^{75}\text{Se}; ^{77}\text{Br}; ^{83}\text{Rb}; ^{85}\text{Kr}; ^{87}\text{Y}; ^{88}\text{Kr}; ^{88}\text{Zr}; ^{89}\text{Zr}; ^{91}\text{Sr}; ^{92}\text{Sr}; ^{95}\text{Zr}; ^{97}\text{Zr}; ^{99}\text{Mo}; ^{99}\text{Rh}; ^{103}\text{Ru}; ^{105}\text{Ru}; ^{105}\text{Rh}; ^{105}\text{Ag}; ^{111}\text{Ag}; ^{111}\text{In}; ^{112}\text{Ag}; ^{115}\text{Cd}; ^{117}\text{Cd}; ^{121}\text{Te}; ^{129}\text{Sb}; ^{60}\text{Ni}$ ; Measured $\text{E}\gamma, \text{I}\gamma$ , fission yields. JOUR NIMBE 267 1891
	2009OM01	NUCLEAR REACTIONS $^{89}\text{Y}(\text{p}, \text{n}), (\text{p}, 2\text{n}), (\text{p}, \text{pn}), \text{E} < 17.7 \text{ MeV}$ ; measured activation sample $\text{E}\gamma, \text{I}\gamma$ ; deduced reaction $\sigma$ . Comparison with ALICE-IPPE code. JOUR RAACA 97 467
	2009PA21	NUCLEAR REACTIONS $^{89}\text{Y}(\text{p}, 2\text{n}), \text{E}=17 \text{ MeV}$ ; measured $\text{E}\gamma, \text{I}\gamma, \gamma\gamma$ -coin. JOUR APOBB 40 647
$^{88}\text{Nb}$	2009EL08	NUCLEAR REACTIONS $^{92}\text{Mo}(\text{p}, \text{X})^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}, \text{E}=62 \text{ MeV}; ^{106}\text{Cd}(\text{p}, \text{X})^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}, \text{E}=62 \text{ MeV}$ ; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
	2009GA02	NUCLEAR REACTIONS $^{74}\text{Se}(^{18}\text{O}, 3\text{np}), \text{E}=74 \text{ MeV}$ ; measured $\text{E}\gamma, \text{I}\gamma$ , excitation function. $^{88}\text{Nb}$ ; measured half-life. JOUR RAACA 97 79
$^{88}\text{Mo}$	2008WE10	ATOMIC MASSES $^{84}\text{Y}, ^{87}\text{Zr}, ^{88,89}\text{Mo}, ^{88,89,90,91,92}\text{Tc}, ^{90,91,92,93}\text{Ru}, ^{92,93,94,95}\text{Rh}, ^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{88}\text{Tc}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}, ^{77,78}\text{Y}, ^{79,80}\text{Zr}, ^{83,84}\text{Mo}, ^{88,89}\text{Ru}, ^{92,93}\text{Pd}, ^{86}\text{Tc}, ^{90}\text{Rh}, ^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}, ^{78}\text{Zr}, ^{81}\text{Nb}, ^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}, ^{82}\text{Nb}, ^{86}\text{Tc}, ^{90}\text{Rh}, ^{94}\text{Ag}, ^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
	2008WE10	ATOMIC MASSES $^{84}\text{Y}, ^{87}\text{Zr}, ^{88,89}\text{Mo}, ^{88,89,90,91,92}\text{Tc}, ^{90,91,92,93}\text{Ru}, ^{92,93,94,95}\text{Rh}, ^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{88}\text{Ru}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}, ^{77,78}\text{Y}, ^{79,80}\text{Zr}, ^{83,84}\text{Mo}, ^{88,89}\text{Ru}, ^{92,93}\text{Pd}, ^{86}\text{Tc}, ^{90}\text{Rh}, ^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}, ^{78}\text{Zr}, ^{81}\text{Nb}, ^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}, ^{82}\text{Nb}, ^{86}\text{Tc}, ^{90}\text{Rh}, ^{94}\text{Ag}, ^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007

**A=88 (continued)**

- 2009ST04 RADIOACTIVITY  $^{80}\text{Y}$ ,  $^{81}\text{Zr}$ ,  $^{83,84}\text{Nb}$ ,  $^{84}\text{Mo}(\text{EC})$ , ( $\beta^+$ ) [from  $^9\text{Be}(^{124}\text{Xe}, \text{X})$ ,  $E=140$  MeV / nucleon]; measured  $E\gamma$ , (particle)- $\gamma$  coin, (particle)- $\beta$  coin, half-life.  $^{64}\text{Ge}$ ,  $^{68}\text{Se}$ ,  $^{72}\text{Kr}$ ,  $^{76}\text{Sr}$ ,  $^{80}\text{Zr}$ ,  $^{84}\text{Mo}$ ,  $^{88}\text{Ru}$ ; systematics of half-lives and yrast states. Comparisons with QRPA predictions. JOUR PRVCA 79 015803

**A=89**

- $^{89}\text{Rb}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$  [from  $^{238}\text{U}+p$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009LE26 RADIOACTIVITY  $^{84g}\text{Ga}$ ,  $^{84m}\text{Ga}(\beta^-)$ , ( $\beta^-n$ ),  $^{84}\text{Ge}(\beta^-)$  [from  $\text{U}(\gamma, \text{X})$ ,  $E=0-50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin, half-lives.  $^{84}\text{Ga}$ ,  $^{84}\text{Ge}$ ,  $^{84}\text{As}$ ,  $^{83}\text{Ge}$ ; deduced levels,  $J$ ,  $\pi$ , delayed-neutron emission probabilities, logft.  $^{83}\text{Ge}$ ,  $^{84}\text{As}$ ,  $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured  $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic  $^{78}\text{Ni}$  nucleus.  $Z=32-40$  (even),  $N=52$ ;  $N=42-54$ ,  $Z=32$ ; systematics of first  $2+$  and  $4+$  states. JOUR PRVCA 80 044308
- 2009PA20 NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{238}\text{U}(^{48}\text{Ca}, \text{X})$ ,  $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ ,  $E=305, 330, 430$  MeV;  $^{89,91}\text{Rb}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin; deduced  $J$ ,  $\pi$ , level scheme,  $T_{1/2}$ . JOUR APOBB 40 629
- $^{89}\text{Sr}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$  [from  $^{238}\text{U}+p$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009LE26 RADIOACTIVITY  $^{84g}\text{Ga}$ ,  $^{84m}\text{Ga}(\beta^-)$ , ( $\beta^-n$ ),  $^{84}\text{Ge}(\beta^-)$  [from  $\text{U}(\gamma, \text{X})$ ,  $E=0-50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin, half-lives.  $^{84}\text{Ga}$ ,  $^{84}\text{Ge}$ ,  $^{84}\text{As}$ ,  $^{83}\text{Ge}$ ; deduced levels,  $J$ ,  $\pi$ , delayed-neutron emission probabilities, logft.  $^{83}\text{Ge}$ ,  $^{84}\text{As}$ ,  $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured  $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic  $^{78}\text{Ni}$  nucleus.  $Z=32-40$  (even),  $N=52$ ;  $N=42-54$ ,  $Z=32$ ; systematics of first  $2+$  and  $4+$  states. JOUR PRVCA 80 044308
- $^{89}\text{Y}$  2009BE03 NUCLEAR REACTIONS  $^{89}\text{Y}(\gamma, \gamma')$ ,  $E=3-13$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , widths, angular distributions, level densities.  $^{89}\text{Y}$ ; deduced levels. Comparison with quasiparticle-random-phase approximation predictions. JOUR PRVCA 79 014303
- 2009H007 RADIOACTIVITY  $^{93m}\text{Mo}(\beta^+)$ , (IT) [from  $^{13}\text{C}(^{86}\text{Kr}, \text{X})$ ,  $E=7.4$  MeV / nucleon]; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{93}\text{Nb}$ ,  $^{93}\text{Mo}$ ; deduced levels,  $J$ ,  $\pi$ , transition strengths.  $^{92}\text{Y}(\beta^-)$ ,  $^{89m}\text{Y}$ ,  $^{90m}\text{Y}$ ,  $^{90m}\text{Zr}$ ,  $^{91m}\text{Zr}$ ,  $^{92m}\text{Mo}$ ,  $^{93m}\text{Mo}$ ,  $^{94m}\text{Mo}(\text{IT})$ ; measured  $E\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- 2009KI16 NUCLEAR REACTIONS  $^{89}\text{Y}(\alpha, \alpha)$ ,  $E(\text{cm})=15.51, 18.63$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\sigma$ ; deduced parameters for local scattering potentials.  $^{89}\text{Y}(\alpha, \alpha)$ ,  $E(\text{cm})=20.1, 22.0, 23.9, 40.2, 62.2, 158.9$  MeV;  $^{92}\text{Mo}(\alpha, \alpha)$ ,  $E(\text{cm})=15.69, 18.62$  MeV; analyzed  $\sigma$  and  $\sigma(\theta)$  measurements with different potential parameters.  $^{93}\text{Nb}$ ; analyzed  $\alpha$ -cluster states in  $^{89}\text{Y}+\alpha$  system, bands, and  $B(E2)$  using potential parameters close to those for the scattering potential. JOUR PRVCA 80 045807



## A=90

- <sup>90</sup>Rb      2009LE26      RADIOACTIVITY <sup>84g</sup>Ga, <sup>84m</sup>Ga( $\beta^-$ ), ( $\beta^-$ n), <sup>84</sup>Ge( $\beta^-$ )[from U( $\gamma$ , X), E=0-50 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin, half-lives. <sup>84</sup>Ga, <sup>84</sup>Ge, <sup>84</sup>As, <sup>83</sup>Ge; deduced levels, J,  $\pi$ , delayed-neutron emission probabilities, logft. <sup>83</sup>Ge, <sup>84</sup>As, <sup>89,90,93,94,96</sup>Rb( $\beta^-$ ); measured E $\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic <sup>78</sup>Ni nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308
- <sup>90</sup>Sr      2009LE26      RADIOACTIVITY <sup>84g</sup>Ga, <sup>84m</sup>Ga( $\beta^-$ ), ( $\beta^-$ n), <sup>84</sup>Ge( $\beta^-$ )[from U( $\gamma$ , X), E=0-50 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin, half-lives. <sup>84</sup>Ga, <sup>84</sup>Ge, <sup>84</sup>As, <sup>83</sup>Ge; deduced levels, J,  $\pi$ , delayed-neutron emission probabilities, logft. <sup>83</sup>Ge, <sup>84</sup>As, <sup>89,90,93,94,96</sup>Rb( $\beta^-$ ); measured E $\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic <sup>78</sup>Ni nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308
- 2009ZH11      NUCLEAR REACTIONS <sup>16</sup>O(<sup>82</sup>Se, 4n), (<sup>82</sup>Se, 3n), E=460 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions. <sup>94,95</sup>Mo; deduced levels, J,  $\pi$ , configurations. Comparisons with shell-model calculations. <sup>90</sup>Sr, <sup>92</sup>Mo; level systematics. JOUR PRVCA 79 044316
- <sup>90</sup>Y      2008FUZV      NUCLEAR REACTIONS <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup>Al, <sup>28,29</sup>Si, <sup>41</sup>K, <sup>51</sup>V, <sup>61</sup>Ni, <sup>65</sup>Cu, <sup>64,67</sup>Zn, <sup>69</sup>Ga, <sup>79</sup>Br, <sup>92</sup>Mo, <sup>93</sup>Nb(n,  $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009H007      RADIOACTIVITY <sup>93m</sup>Mo( $\beta^+$ ), (IT)[from <sup>13</sup>C(<sup>86</sup>Kr, X), E=7.4 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>93</sup>Nb, <sup>93</sup>Mo; deduced levels, J,  $\pi$ , transition strengths. <sup>92</sup>Y( $\beta^-$ ), <sup>89m</sup>Y, <sup>90m</sup>Y, <sup>90m</sup>Zr, <sup>91m</sup>Zr, <sup>92m</sup>Mo, <sup>93m</sup>Mo, <sup>94m</sup>Mo(IT); measured E $\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Co
- <sup>90</sup>Zr      2008RUZY      NUCLEAR REACTIONS <sup>90</sup>Zr( $\gamma$ ,  $\gamma'$ ), E=7-10 MeV; measured I $\gamma$ , E $\gamma$  using HPGe of HI $\gamma$ S facility with 100% linearly polarized beams; deduced M1 transition strengths. Compared to shell model predictions. REPT TUNL-XLII,P112,Rusev
- 2008SC20      NUCLEAR REACTIONS <sup>90</sup>Zr( $\gamma$ ,  $\gamma'$ ), E=7.9, 9.0, 13.2 MeV; measured E $\gamma$ , I $\gamma$ . $\sigma$ , angular distributions, widths; deduced levels, J,  $\pi$ . Comparisons with calculations for <sup>88</sup>Sr, <sup>90</sup>Zr. JOUR PRVCA 78 064314
- 2008SCZW      RADIOACTIVITY <sup>90</sup>Zr(IT)[from <sup>90</sup>Y( $\beta^-$ )]]; measured  $\beta\gamma$ -coin., I(X-rays); deduced T<sub>1/2</sub>, B(E0). REPT MLL 2007 Annual,P7,Schwerdtfeger
- 2009H007      RADIOACTIVITY <sup>93m</sup>Mo( $\beta^+$ ), (IT)[from <sup>13</sup>C(<sup>86</sup>Kr, X), E=7.4 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>93</sup>Nb, <sup>93</sup>Mo; deduced levels, J,  $\pi$ , transition strengths. <sup>92</sup>Y( $\beta^-$ ), <sup>89m</sup>Y, <sup>90m</sup>Y, <sup>90m</sup>Zr, <sup>91m</sup>Zr, <sup>92m</sup>Mo, <sup>93m</sup>Mo, <sup>94m</sup>Mo(IT); measured E $\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306

A=90 (*continued*)

- 2009SH19 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{89}\text{Y}$ ,  $^{90}\text{Zr}$ ,  $^{120}\text{Sn}$ ,  $^{142}\text{Nd}$ ,  $^{166}\text{Er}$ ,  $^{208}\text{Pb}(p, p')$ ,  $E=200$  MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305
- $^{90}\text{Nb}$  2009CH25 NUCLEAR MOMENTS  $^{90,91,92,93,99,101,103}\text{Nb}$ ; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501
- 2009DI05 NUCLEAR REACTIONS  $^{93}\text{Nb}(p, X)^{90}\text{Mo}$  /  $^{93}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$  /  $^{92}\text{Nb}$  /  $^{88}\text{Zr}$  /  $^{89}\text{Zr}$  /  $^{88}\text{Y}$ ,  $E = 0-37$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
- 2009EL08 NUCLEAR REACTIONS  $^{92}\text{Mo}(p, X)^{85}\text{Nb}$  /  $^{86}\text{Nb}$  /  $^{87}\text{Nb}$  /  $^{88}\text{Nb}$  /  $^{89}\text{Nb}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$ ,  $E=62$  MeV;  $^{106}\text{Cd}(p, X)^{101}\text{In}$  /  $^{102}\text{In}$  /  $^{103}\text{In}$  /  $^{104}\text{In}$  /  $^{105}\text{In}$  /  $^{106}\text{In}$  /  $^{107}\text{In}$  /  $^{108}\text{In}$  /  $^{109}\text{In}$ ,  $E=62$  MeV; measured yields; deduced production  $\sigma$ . Enriched target. JOUR ZAANE 40 1
- $^{90}\text{Mo}$  2009CH09 NUCLEAR MOMENTS  $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
- 2009DI05 NUCLEAR REACTIONS  $^{93}\text{Nb}(p, X)^{90}\text{Mo}$  /  $^{93}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$  /  $^{92}\text{Nb}$  /  $^{88}\text{Zr}$  /  $^{89}\text{Zr}$  /  $^{88}\text{Y}$ ,  $E = 0-37$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(n, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(n, n')$ ,  $\text{Pb}(p, xn)^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$ ,  $\text{In}(p, xn)^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(p, 3n)$ ,  $^{63}\text{Cu}(p, 2n)$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(p, 4n)$ ,  $E=0.8$  GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{90}\text{Tc}$  2008WE10 ATOMIC MASSES  $^{84}\text{Y}$ ,  $^{87}\text{Zr}$ ,  $^{88,89}\text{Mo}$ ,  $^{88,89,90,91,92}\text{Tc}$ ,  $^{90,91,92,93}\text{Ru}$ ,  $^{92,93,94,95}\text{Rh}$ ,  $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
- $^{90}\text{Ru}$  2007WEZX RADIOACTIVITY  $^{75}\text{Sr}$ ,  $^{77,78}\text{Y}$ ,  $^{79,80}\text{Zr}$ ,  $^{83,84}\text{Mo}$ ,  $^{88,89}\text{Ru}$ ,  $^{92,93}\text{Pd}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94,98}\text{In}(\text{EC})$ ; measured half-lives;  $^{76}\text{Y}$ ,  $^{78}\text{Zr}$ ,  $^{81}\text{Nb}$ ,  $^{85}\text{Tc}(p)$ ; deduced half-life limits;  $^{78}\text{Y}$ ,  $^{82}\text{Nb}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94}\text{Ag}$ ,  $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
- 2008WE10 ATOMIC MASSES  $^{84}\text{Y}$ ,  $^{87}\text{Zr}$ ,  $^{88,89}\text{Mo}$ ,  $^{88,89,90,91,92}\text{Tc}$ ,  $^{90,91,92,93}\text{Ru}$ ,  $^{92,93,94,95}\text{Rh}$ ,  $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
- $^{90}\text{Rh}$  2007WEZX RADIOACTIVITY  $^{75}\text{Sr}$ ,  $^{77,78}\text{Y}$ ,  $^{79,80}\text{Zr}$ ,  $^{83,84}\text{Mo}$ ,  $^{88,89}\text{Ru}$ ,  $^{92,93}\text{Pd}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94,98}\text{In}(\text{EC})$ ; measured half-lives;  $^{76}\text{Y}$ ,  $^{78}\text{Zr}$ ,  $^{81}\text{Nb}$ ,  $^{85}\text{Tc}(p)$ ; deduced half-life limits;  $^{78}\text{Y}$ ,  $^{82}\text{Nb}$ ,  $^{86}\text{Tc}$ ,  $^{90}\text{Rh}$ ,  $^{94}\text{Ag}$ ,  $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007

## A=91

- <sup>91</sup>Rb      2009HW03      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>91,92,93</sup>Rb, <sup>155,156</sup>Pm; deduced levels, J,  $\pi$ , bands. Comparison with level systematics of <sup>89</sup>Rb, <sup>90</sup>Kr and <sup>92</sup>Kr. JOUR PRVCA 80 037304
- 2009PA20      NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>238</sup>U(<sup>48</sup>Ca, X), <sup>238</sup>U(<sup>64</sup>Ni, X), E=305, 330, 430 MeV;<sup>89,91</sup>Rb; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced J,  $\pi$ , level scheme, T<sub>1/2</sub>. JOUR APOBB 40 629
- <sup>91</sup>Sr      2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc;<sup>48</sup>V;<sup>59</sup>Fe;<sup>72</sup>Zn;<sup>75</sup>Se;<sup>77</sup>Br;<sup>83</sup>Rb;<sup>85</sup>Kr;<sup>87</sup>Y;<sup>88</sup>Kr;<sup>88</sup>Zr;<sup>89</sup>Zr;<sup>91</sup>Sr;<sup>92</sup>Sr;<sup>95</sup>Zr;<sup>97</sup>Zr;<sup>99</sup>Mo;<sup>99</sup>Rh;<sup>103</sup>Ru;<sup>105</sup>Ru;<sup>105</sup>Rh;<sup>105</sup>Ag;<sup>111</sup>Ag;<sup>111</sup>In;<sup>112</sup>Ag;<sup>115</sup>Cd;<sup>117</sup>Cd;<sup>121</sup>Te;<sup>129</sup>Sb;<sup>60</sup>Me; Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
- <sup>91</sup>Y      2009F005      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- <sup>91</sup>Zr      2009H007      RADIOACTIVITY <sup>93m</sup>Mo( $\beta^+$ ), (IT)[from <sup>13</sup>C(<sup>86</sup>Kr, X), E=7.4 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>93</sup>Nb, <sup>93</sup>Mo; deduced levels, J,  $\pi$ , transition strengths. <sup>92</sup>Y( $\beta^-$ ), <sup>89m</sup>Y, <sup>90m</sup>Y, <sup>90m</sup>Zr, <sup>91m</sup>Zr, <sup>92m</sup>Mo, <sup>93m</sup>Mo, <sup>94m</sup>Mo(IT); measured E $\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- <sup>91</sup>Nb      2009CH25      NUCLEAR MOMENTS <sup>90,91,92,93,99,101,103</sup>Nb; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501
- 2009DI05      NUCLEAR REACTIONS <sup>93</sup>Nb(p, X)<sup>90</sup>Mo / <sup>93</sup>Mo / <sup>90</sup>Nb / <sup>91</sup>Nb / <sup>92</sup>Nb / <sup>88</sup>Zr / <sup>89</sup>Zr / <sup>88</sup>Y, E = 0-37 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
- 2009EL08      NUCLEAR REACTIONS <sup>92</sup>Mo(p, X)<sup>85</sup>Nb / <sup>86</sup>Nb / <sup>87</sup>Nb / <sup>88</sup>Nb / <sup>89</sup>Nb / <sup>90</sup>Nb / <sup>91</sup>Nb, E=62 MeV; <sup>106</sup>Cd(p, X)<sup>101</sup>In / <sup>102</sup>In / <sup>103</sup>In / <sup>104</sup>In / <sup>105</sup>In / <sup>106</sup>In / <sup>107</sup>In / <sup>108</sup>In / <sup>109</sup>In, E=62 MeV; measured yields; deduced production  $\sigma$ . Enriched target. JOUR ZAANE 40 1
- <sup>91</sup>Mo      2009CH09      NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup>Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
- <sup>91</sup>Tc      2008WE10      ATOMIC MASSES <sup>84</sup>Y, <sup>87</sup>Zr, <sup>88,89</sup>Mo, <sup>88,89,90,91,92</sup>Tc, <sup>90,91,92,93</sup>Ru, <sup>92,93,94,95</sup>Rh, <sup>94,95,95m,96</sup>Pd; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
- <sup>91</sup>Ru      2008WE10      ATOMIC MASSES <sup>84</sup>Y, <sup>87</sup>Zr, <sup>88,89</sup>Mo, <sup>88,89,90,91,92</sup>Tc, <sup>90,91,92,93</sup>Ru, <sup>92,93,94,95</sup>Rh, <sup>94,95,95m,96</sup>Pd; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310

## A=92

- <sup>92</sup>Br 2009F005 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- <sup>92</sup>Rb 2009HW03 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>91,92,93</sup>Rb, <sup>155,156</sup>Pm; deduced levels, J,  $\pi$ , bands. Comparison with level systematics of <sup>89</sup>Rb, <sup>90</sup>Kr and <sup>92</sup>Kr. JOUR PRVCA 80 037304
- <sup>92</sup>Sr 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc, <sup>48</sup>V, <sup>59</sup>Fe, <sup>72</sup>Zn, <sup>75</sup>Se, <sup>77</sup>Br, <sup>83</sup>Rb, <sup>85</sup>Kr, <sup>87</sup>Y, <sup>88</sup>Kr, <sup>88</sup>Zr, <sup>89</sup>Zr, <sup>91</sup>Sr, <sup>92</sup>Sr; <sup>95</sup>Zr, <sup>97</sup>Zr, <sup>99</sup>Mo, <sup>99</sup>Rh, <sup>103</sup>Ru, <sup>105</sup>Ru, <sup>105</sup>Rh, <sup>105</sup>Ag, <sup>111</sup>Ag, <sup>111</sup>In, <sup>112</sup>Ag, <sup>115</sup>Cd, <sup>117</sup>Cd, <sup>121</sup>Te, <sup>129</sup>Sb, <sup>60</sup> measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009RZ01 RADIOACTIVITY <sup>248</sup>Cm(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(\text{lin pol})$ . <sup>92,94,96</sup>Sr; deduced levels, J,  $\pi$ , multipolarity, bands, configurations. Comparison with shell-model calculations. JOUR PRVCA 79 024319
- <sup>92</sup>Y 2008SHZT RADIOACTIVITY <sup>88,89</sup>Rb, <sup>92,93,94,95</sup>Y, <sup>138,139</sup>Cs, <sup>139</sup>Ba, <sup>142,143</sup>La( $\beta^-$ )[from <sup>238</sup>U+p]; measured E $\beta$ , I $\beta$ , E $\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009F005 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- 2009H007 RADIOACTIVITY <sup>93m</sup>Mo( $\beta^+$ ), (IT)[from <sup>13</sup>C(<sup>86</sup>Kr, X), E=7.4 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>93</sup>Nb, <sup>93</sup>Mo; deduced levels, J,  $\pi$ , transition strengths. <sup>92</sup>Y( $\beta^-$ ), <sup>89m</sup>Y, <sup>90m</sup>Y, <sup>90m</sup>Zr, <sup>91m</sup>Zr, <sup>92m</sup>Mo, <sup>93m</sup>Mo, <sup>94m</sup>Mo(IT); measured E $\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- <sup>92</sup>Zr 2007SUZN RADIOACTIVITY <sup>92</sup>Zr[from <sup>9</sup>Be(<sup>86</sup>Kr, 3n), E=280 MeV]; measured E $\gamma$ , I $\gamma$ . Analysis of high-spin state lifetimes in progress. REPT JAEA-Review 2007-046,P27,Sugawara
- 2008ME15 NUCLEAR REACTIONS <sup>12</sup>C, <sup>40</sup>Ca, <sup>93</sup>Nb, Pb(polarized  $\gamma$ ,  $p\pi^0$ ), E=0.6-2.2 GeV bremsstrahlung; measured invariant- and missing-mass spectra,  $\eta$ -meson production  $\sigma$ ,  $\sigma(\theta)$ . Comparison with BUU transport model and other data. JOUR ZAANE 38 195
- 2008SHZT RADIOACTIVITY <sup>88,89</sup>Rb, <sup>92,93,94,95</sup>Y, <sup>138,139</sup>Cs, <sup>139</sup>Ba, <sup>142,143</sup>La( $\beta^-$ )[from <sup>238</sup>U+p]; measured E $\beta$ , I $\beta$ , E $\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata

## A=92 (continued)

- 2009H007 RADIOACTIVITY  $^{93m}\text{Mo}(\beta^+)$ , (IT)[from  $^{13}\text{C}(^{86}\text{Kr}, \text{X})$ , E=7.4 MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.  $^{93}\text{Nb}$ ,  $^{93}\text{Mo}$ ; deduced levels, J,  $\pi$ , transition strengths.  $^{92}\text{Y}(\beta^-)$ ,  $^{89m}\text{Y}$ ,  $^{90m}\text{Y}$ ,  $^{90m}\text{Zr}$ ,  $^{91m}\text{Zr}$ ,  $^{92m}\text{Mo}$ ,  $^{93m}\text{Mo}$ ,  $^{94m}\text{Mo}(\text{IT})$ ; measured  $E_\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- 2010ZH01 NUCLEAR REACTIONS  $^{95}\text{Mo}(\text{n}, \alpha)$ , E=4, 5, 6 MeV; measured  $I\alpha$ ,  $E\alpha$ , reaction fragments; deduced  $\sigma$ . Comparison with ENDF / B-VII.0, JEFF-3.1 / A and JENDL-3.3 libraries. JOUR ARISE 68 180
- $^{92}\text{Nb}$  2008FUZV NUCLEAR REACTIONS  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \text{p})$ , E=3.5-5.9 MeV;  $^{27}\text{Al}$ ,  $^{28,29}\text{Si}$ ,  $^{41}\text{K}$ ,  $^{51}\text{V}$ ,  $^{61}\text{Ni}$ ,  $^{65}\text{Cu}$ ,  $^{64,67}\text{Zn}$ ,  $^{69}\text{Ga}$ ,  $^{79}\text{Br}$ ,  $^{92}\text{Mo}$ ,  $^{93}\text{Nb}(\text{n}, \alpha)$ , E=3.5-5.9 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Compared to data and evaluated data files ENDF/B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta
- 2009BH06 NUCLEAR REACTIONS  $^{67}\text{Zn}$ ,  $^{92}\text{Mo}(\text{n}, \text{p})$ ,  $^{98}\text{Mo}(\text{n}, \gamma)$ , E=1.6, 3.7 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with EMPIRE-2.19 model code. JOUR NSENA 163 175
- 2009CH25 NUCLEAR MOMENTS  $^{90,91,92,93,99,101,103}\text{Nb}$ ; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501
- 2009DI05 NUCLEAR REACTIONS  $^{93}\text{Nb}(\text{p}, \text{X})^{90}\text{Mo}$  /  $^{93}\text{Mo}$  /  $^{90}\text{Nb}$  /  $^{91}\text{Nb}$  /  $^{92}\text{Nb}$  /  $^{88}\text{Zr}$  /  $^{89}\text{Zr}$  /  $^{88}\text{Y}$ , E = 0-37 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
- 2009SI28 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{93}\text{Nb}(\alpha, \text{n})$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}(\alpha, 2\text{n})$ ,  $^{181}\text{Ta}(\alpha, 3\text{n})$ ,  $^{197}\text{Au}(\alpha, 2\text{pn})$ ,  $^{93}\text{Nb}(\alpha, 2\text{p})$ ,  $^{197}\text{Au}$ ,  $^{93}\text{Nb}(\alpha, \text{an})$ ,  $^{27}\text{Al}(\alpha, \alpha 2\text{pn})$ , E=18-60 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- $^{92}\text{Mo}$  2009CH09 NUCLEAR MOMENTS  $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
- 2009G0ZZ NUCLEAR REACTIONS  $^{92}\text{Mo}(\text{n}, \text{n}'\gamma)$ , E=fast; measured  $E_\gamma$ ,  $I_\gamma(\theta)$ .  $^{92}\text{Mo}$ ; deduced  $\delta$ . CONF Cheboksary,P95,Govor
- 2009H007 RADIOACTIVITY  $^{93m}\text{Mo}(\beta^+)$ , (IT)[from  $^{13}\text{C}(^{86}\text{Kr}, \text{X})$ , E=7.4 MeV / nucleon]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.  $^{93}\text{Nb}$ ,  $^{93}\text{Mo}$ ; deduced levels, J,  $\pi$ , transition strengths.  $^{92}\text{Y}(\beta^-)$ ,  $^{89m}\text{Y}$ ,  $^{90m}\text{Y}$ ,  $^{90m}\text{Zr}$ ,  $^{91m}\text{Zr}$ ,  $^{92m}\text{Mo}$ ,  $^{93m}\text{Mo}$ ,  $^{94m}\text{Mo}(\text{IT})$ ; measured  $E_\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
- 2009KI16 NUCLEAR REACTIONS  $^{89}\text{Y}(\alpha, \alpha)$ , E(cm)=15.51, 18.63 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\sigma$ ; deduced parameters for local scattering potentials.  $^{89}\text{Y}(\alpha, \alpha)$ , E(cm)=20.1, 22.0, 23.9, 40.2, 62.2, 158.9 MeV;  $^{92}\text{Mo}(\alpha, \alpha)$ , E(cm)=15.69, 18.62 MeV; analyzed  $\sigma$  and  $\sigma(\theta)$  measurements with different potential parameters.  $^{93}\text{Nb}$ ; analyzed  $\alpha$ -cluster states in  $^{89}\text{Y}+\alpha$  system, bands, and B(E2) using potential parameters close to those for the scattering potential. JOUR PRVCA 80 045807



KEYNUMBERS AND KEYWORDS

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**A=92 (continued)**

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|                  | 2009RU05 | NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , E=4-13 MeV; measured $E\gamma$ , $I\gamma$ , absolute photoabsorption $\sigma$ . Comparison with QRPA calculations. JOUR PRVCA 79 061302   |
|                  | 2009ST05 | NUCLEAR REACTIONS $^{238}\text{U}(^{64}\text{Ni}, \text{X})$ , E=430 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{71}\text{Cu}$ ; deduced levels, J, $\pi$ , configurations. $^{70}\text{Ni}$ , $^{71}\text{Cu}$ , $^{92}\text{Mo}$ ; level systematics. Comparison with shell-model calculations. JOUR PRVCA 79 034319   |
|                  | 2009ZH11 | NUCLEAR REACTIONS $^{16}\text{O}(^{82}\text{Se}, 4n)$ , ( $^{82}\text{Se}, 3n$ ), E=460 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{94,95}\text{Mo}$ ; deduced levels, J, $\pi$ , configurations. Comparisons with shell-model calculations. $^{90}\text{Sr}$ , $^{92}\text{Mo}$ ; level systematics. JOUR PRVCA 79 044316  |
| $^{92}\text{Tc}$ | 2008WE10 | ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310  |
| $^{92}\text{Ru}$ | 2008WE10 | ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310  |
| $^{92}\text{Rh}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007 |
|                  | 2008WE10 | ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310  |
| $^{92}\text{Pd}$ | 2007WEZX | RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007 |

**A=93**

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| $^{93}\text{Rb}$ | 2009HW03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{91,92,93}\text{Rb}$ , $^{155,156}\text{Pm}$ ; deduced levels, J, $\pi$ , bands. Comparison with level systematics of $^{89}\text{Rb}$ , $^{90}\text{Kr}$ and $^{92}\text{Kr}$ . JOUR PRVCA 80 037304   |
|                  | 2009LE26 | RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , ( $\beta^-n$ ), $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, \text{X})$ , E=0-50 MeV]; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, J, $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308 |

KEYNUMBERS AND KEYWORDS

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**A=93 (continued)**

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| <sup>93</sup> Sr | 2009LE26 | RADIOACTIVITY <sup>84g</sup> Ga, <sup>84m</sup> Ga( $\beta^-$ ), ( $\beta^-n$ ), <sup>84</sup> Ge( $\beta^-$ )[from U( $\gamma$ , X), E=0-50 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta\gamma$ -coin, half-lives. <sup>84</sup> Ga, <sup>84</sup> Ge, <sup>84</sup> As, <sup>83</sup> Ge; deduced levels, J, $\pi$ , delayed-neutron emission probabilities, logft. <sup>83</sup> Ge, <sup>84</sup> As, <sup>89,90,93,94,96</sup> Rb( $\beta^-$ ); measured E $\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic <sup>78</sup> Ni nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308   |
| <sup>93</sup> Y  | 2008SHZT | RADIOACTIVITY <sup>88,89</sup> Rb, <sup>92,93,94,95</sup> Y, <sup>138,139</sup> Cs, <sup>139</sup> Ba, <sup>142,143</sup> La( $\beta^-$ )[from <sup>238</sup> U+p]; measured E $\beta$ , I $\beta$ , E $\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
|                  | 2009F005 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>60m</sup> Mn / <sup>78m</sup> Ga / <sup>82m</sup> Ga / <sup>92m</sup> Br / <sup>95m</sup> Rb / <sup>98m</sup> Rb / <sup>92m</sup> Y / <sup>101m</sup> Y / <sup>112m</sup> Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup> Mn, <sup>78,82</sup> Ga, <sup>92</sup> Br, <sup>95,98</sup> Rb, <sup>92,101</sup> Y, <sup>112</sup> Tc; deduced levels, J, $\pi$ . <sup>66m</sup> Cu, <sup>78m</sup> Zn, <sup>88m</sup> Br, <sup>95m</sup> Kr, <sup>96m</sup> Rb, <sup>97m,100m</sup> Sr, <sup>99m</sup> Mo, <sup>121m</sup> Pd, <sup>124m</sup> Sn, <sup>125m</sup> Xe; measured E $\gamma$ and half-lives. <sup>91,92,93</sup> Y; measured E $\gamma$ . JOUR PRVCA 79 064318 |
| <sup>93</sup> Zr | 2008FUZV | NUCLEAR REACTIONS <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, p), E=3.5-5.9 MeV; <sup>27</sup> Al, <sup>28,29</sup> Si, <sup>41</sup> K, <sup>51</sup> V, <sup>61</sup> Ni, <sup>65</sup> Cu, <sup>64,67</sup> Zn, <sup>69</sup> Ga, <sup>79</sup> Br, <sup>92</sup> Mo, <sup>93</sup> Nb(n, $\alpha$ ), E=3.5-5.9 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Compared to data and evaluated data files ENDF?B-VI, FENDL / A-2.0 and JENFDL-3.3. Activation method. REPT JAEA-Conf 2008-08,P56,Furuta   |
|                  | 2008SHZT | RADIOACTIVITY <sup>88,89</sup> Rb, <sup>92,93,94,95</sup> Y, <sup>138,139</sup> Cs, <sup>139</sup> Ba, <sup>142,143</sup> La( $\beta^-$ )[from <sup>238</sup> U+p]; measured E $\beta$ , I $\beta$ , E $\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
|                  | 2010CA01 | RADIOACTIVITY <sup>93</sup> Zr( $\beta^-$ ); measured x-rays, E $\beta$ , I $\beta$ ; deduced T <sub>1/2</sub> , decay scheme. JOUR ARISE 68 122  |
| <sup>93</sup> Nb | 2007OK06 | NUCLEAR MOMENTS <sup>93</sup> Nb; measured temperature dependence of nuclear spin-spin relaxation rate. JOUR ZNASE 62a 627  |
|                  | 2009CH25 | NUCLEAR MOMENTS <sup>90,91,92,93,99,101,103</sup> Nb; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501  |
|                  | 2009H007 | RADIOACTIVITY <sup>93m</sup> Mo( $\beta^+$ ), (IT)[from <sup>13</sup> C( <sup>86</sup> Kr, X), E=7.4 MeV / nucleon]; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>93</sup> Nb, <sup>93</sup> Mo; deduced levels, J, $\pi$ , transition strengths. <sup>92</sup> Y( $\beta^-$ ), <sup>89m</sup> Y, <sup>90m</sup> Y, <sup>90m</sup> Zr, <sup>91m</sup> Zr, <sup>92m</sup> Mo, <sup>93m</sup> Mo, <sup>94m</sup> Mo(IT); measured E $\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306  |
|                  | 2009KI16 | NUCLEAR REACTIONS <sup>89</sup> Y( $\alpha$ , $\alpha$ ), E(cm)=15.51, 18.63 MeV; measured E $\alpha$ , I $\alpha$ , $\sigma$ ; deduced parameters for local scattering potentials. <sup>89</sup> Y( $\alpha$ , $\alpha$ ), E(cm)=20.1, 22.0, 23.9, 40.2, 62.2, 158.9 MeV; <sup>92</sup> Mo( $\alpha$ , $\alpha$ ), E(cm)=15.69, 18.62 MeV; analyzed $\sigma$ and $\sigma(\theta)$ measurements with different potential parameters. <sup>93</sup> Nb; analyzed $\alpha$ -cluster states in <sup>89</sup> Y+ $\alpha$ system, bands, and B(E2) using potential parameters close to those for the scattering potential. JOUR PRVCA 80 045807   |
|                  | 2010CA01 | RADIOACTIVITY <sup>93</sup> Zr( $\beta^-$ ); measured x-rays, E $\beta$ , I $\beta$ ; deduced T <sub>1/2</sub> , decay scheme. JOUR ARISE 68 122  |

KEYNUMBERS AND KEYWORDS

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**A=93 (continued)**

$^{93}\text{Mo}$	2009DI05	NUCLEAR REACTIONS $^{93}\text{Nb}(p, X)^{90}\text{Mo}$ / $^{93}\text{Mo}$ / $^{90}\text{Nb}$ / $^{91}\text{Nb}$ / $^{92}\text{Nb}$ / $^{88}\text{Zr}$ / $^{89}\text{Zr}$ / $^{88}\text{Y}$ , $E = 0\text{-}37$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Comparison with ALICE, EMPIRE and TALYS codes. JOUR NIMBE 267 3364
	2009H007	RADIOACTIVITY $^{93m}\text{Mo}(\beta^+)$ , (IT)[from $^{13}\text{C}(^{86}\text{Kr}, X)$ , $E=7.4$ MeV / nucleon]; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin. $^{93}\text{Nb}$ , $^{93}\text{Mo}$ ; deduced levels, $J$ , $\pi$ , transition strengths. $^{92}\text{Y}(\beta^-)$ , $^{89m}\text{Y}$ , $^{90m}\text{Y}$ , $^{90m}\text{Zr}$ , $^{91m}\text{Zr}$ , $^{92m}\text{Mo}$ , $^{93m}\text{Mo}$ , $^{94m}\text{Mo}$ (IT); measured $E_\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
$^{93}\text{Tc}$	2009MA58	NUCLEAR REACTIONS $^{89}\text{Y}(^9\text{Be}, 3n)$ , $(^9\text{Be}, 4n)$ , $(^9\text{Be}, 5n)$ , $(p, np)$ , $(p, d)$ , $E < 47.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $^{93,94,95}\text{Tc}$ product yield as function of projectile energy. Comparison with PACE-II prediction. JOUR RAACA 97 663
$^{93}\text{Ru}$	2008WE10	ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{93}\text{Rh}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}$ (EC); measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}$ (p); deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}$ (EC); deduced q-values. PREPRINT Wefers,10/04/2007
	2008WE10	ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95m,96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{93}\text{Pd}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}$ (EC); measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}$ (p); deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}$ (EC); deduced q-values. PREPRINT Wefers,10/04/2007

**A=94**

$^{94}\text{Rb}$	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, X)$ , $E=0\text{-}50$ MeV]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E_\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32\text{-}40$ (even), $N=52$ ; $N=42\text{-}54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
$^{94}\text{Sr}$	2009LE26	RADIOACTIVITY $^{84g}\text{Ga}$ , $^{84m}\text{Ga}(\beta^-)$ , $(\beta^-n)$ , $^{84}\text{Ge}(\beta^-)$ [from $\text{U}(\gamma, X)$ , $E=0\text{-}50$ MeV]; measured $E_\gamma$ , $I_\gamma$ , $\beta\gamma$ -coin, half-lives. $^{84}\text{Ga}$ , $^{84}\text{Ge}$ , $^{84}\text{As}$ , $^{83}\text{Ge}$ ; deduced levels, $J$ , $\pi$ , delayed-neutron emission probabilities, logft. $^{83}\text{Ge}$ , $^{84}\text{As}$ , $^{89,90,93,94,96}\text{Rb}(\beta^-)$ ; measured $E_\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic $^{78}\text{Ni}$ nucleus. $Z=32\text{-}40$ (even), $N=52$ ; $N=42\text{-}54$ , $Z=32$ ; systematics of first $2+$ and $4+$ states. JOUR PRVCA 80 044308
	2009RZ01	RADIOACTIVITY $^{248}\text{Cm}$ (SF); measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , $\gamma(\text{lin pol})$ . $^{92,94,96}\text{Sr}$ ; deduced levels, $J$ , $\pi$ , multipolarity, bands, configurations. Comparison with shell-model calculations. JOUR PRVCA 79 024319

KEYNUMBERS AND KEYWORDS

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A=94 (*continued*)

$^{94}\text{Y}$	2008SHZT	RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+\text{p}$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata
$^{94}\text{Zr}$	2008EL09	NUCLEAR REACTIONS $^{94}\text{Zr}(\text{n}, \text{n}'\gamma)$ , $E=2.5\text{-}4.0$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions, half-lives by Doppler shift attenuation; deduced levels, $J$ , $\pi$ , multipolarities, mixing ratios, $B(\text{M}1)$ , $B(\text{E}2)$ . $^{90,92,96,98,100,102}\text{Zr}$ , $^{96}\text{Ru}$ , $^{94,96}\text{Mo}$ ; systematics. Comparison with IBA and shell model calculations. JOUR PRVCA 78 064303
	2008ELZY	NUCLEAR REACTIONS $^{94}\text{Zr}(\text{n}, \text{n}'\gamma)$ , $E\approx 3$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $B(\text{E}2)$ , $B(\text{M}1)$ . Signatures of mixed-symmetry multiplet and of anomalous behavior of $4_2^+$ state. REPT TUNL-XLII,P88,Elhami
	2008SHZT	RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+\text{p}$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata
$^{94}\text{Mo}$	2009CH09	NUCLEAR MOMENTS $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
	2009H007	RADIOACTIVITY $^{93\text{m}}\text{Mo}(\beta^+)$ , (IT)[from $^{13}\text{C}(\text{}^{86}\text{Kr}, \text{X})$ , $E=7.4$ MeV / nucleon]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{93}\text{Nb}$ , $^{93}\text{Mo}$ ; deduced levels, $J$ , $\pi$ , transition strengths. $^{92}\text{Y}(\beta^-)$ , $^{89\text{m}}\text{Y}$ , $^{90\text{m}}\text{Y}$ , $^{90\text{m}}\text{Zr}$ , $^{91\text{m}}\text{Zr}$ , $^{92\text{m}}\text{Mo}$ , $^{93\text{m}}\text{Mo}$ , $^{94\text{m}}\text{Mo}(\text{IT})$ ; measured $E\gamma$ . Comparison with jj-coupling shell model calculations. JOUR PRVCA 80 034306
	2009RU05	NUCLEAR REACTIONS $^{92,94,96,98,100}\text{Mo}(\gamma, \gamma')$ , $E=4\text{-}13$ MeV; measured $E\gamma$ , $I\gamma$ , absolute photoabsorption $\sigma$ . Comparison with QRPA calculations. JOUR PRVCA 79 061302
	2009ZH11	NUCLEAR REACTIONS $^{16}\text{O}(\text{}^{82}\text{Se}, 4\text{n})$ , $(\text{}^{82}\text{Se}, 3\text{n})$ , $E=460$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{94,95}\text{Mo}$ ; deduced levels, $J$ , $\pi$ , configurations. Comparisons with shell-model calculations. $^{90}\text{Sr}$ , $^{92}\text{Mo}$ ; level systematics. JOUR PRVCA 79 044316
$^{94}\text{Tc}$	2009MA58	NUCLEAR REACTIONS $^{89}\text{Y}(\text{}^9\text{Be}, 3\text{n})$ , $(\text{}^9\text{Be}, 4\text{n})$ , $(\text{}^9\text{Be}, 5\text{n})$ , (p, np), (p, d), $E<47.5$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $^{93,94,95}\text{Tc}$ product yield as function of projectile energy. Comparison with PACE-II prediction. JOUR RAACA 97 663
$^{94}\text{Rh}$	2008WE10	ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{94}\text{Pd}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007
	2008WE10	ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
$^{94}\text{Ag}$	2007WEZX	RADIOACTIVITY $^{75}\text{Sr}$ , $^{77,78}\text{Y}$ , $^{79,80}\text{Zr}$ , $^{83,84}\text{Mo}$ , $^{88,89}\text{Ru}$ , $^{92,93}\text{Pd}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94,98}\text{In}(\text{EC})$ ; measured half-lives; $^{76}\text{Y}$ , $^{78}\text{Zr}$ , $^{81}\text{Nb}$ , $^{85}\text{Tc}(\text{p})$ ; deduced half-life limits; $^{78}\text{Y}$ , $^{82}\text{Nb}$ , $^{86}\text{Tc}$ , $^{90}\text{Rh}$ , $^{94}\text{Ag}$ , $^{98}\text{In}(\text{EC})$ ; deduced q-values. PREPRINT Wefers,10/04/2007



KEYNUMBERS AND KEYWORDS

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**A=95 (continued)**

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| $^{95}\text{Nb}$ | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , E=2.5 GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$<br>Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891 |
|                  | 2009SI28 | NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{93}\text{Nb}(\alpha, \text{n})$ , $^{197}\text{Au}$ , $^{181}\text{Ta}(\alpha, 2\text{n})$ , $^{181}\text{Ta}(\alpha, 3\text{n})$ , $^{197}\text{Au}(\alpha, 2\text{pn})$ , $^{93}\text{Nb}(\alpha, 2\text{p})$ , $^{197}\text{Au}$ , $^{93}\text{Nb}(\alpha, \alpha\text{n})$ , $^{27}\text{Al}(\alpha, \alpha 2\text{pn})$ , E=18-60 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLETE codes. JOUR CJPFA 87 1037  |
|                  | 2009TR01 | NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{138}\text{Ce}$ , $^{153}\text{Eu}(\gamma, \text{n})$ , E=10-25 MeV; $^{96}\text{Mo}$ , $^{118}\text{Sn}(\gamma, \text{p})$ , E=10-25 MeV; $^{89}\text{Y}(\gamma, 2\text{n})$ , E=10-25 MeV; $^{106}\text{Cd}$ , $^{112}\text{Sn}(\gamma, \text{np})$ , E=10-25 MeV; measured $E\gamma$ , $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126   |
| $^{95}\text{Mo}$ | 2009CH09 | NUCLEAR MOMENTS $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23   |
|                  | 2009ZH11 | NUCLEAR REACTIONS $^{16}\text{O}(\text{Se}, 4\text{n})$ , $(\text{Se}, 3\text{n})$ , E=460 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{94,95}\text{Mo}$ ; deduced levels, J, $\pi$ , configurations. Comparisons with shell-model calculations. $^{90}\text{Sr}$ , $^{92}\text{Mo}$ ; level systematics. JOUR PRVCA 79 044316   |
| $^{95}\text{Tc}$ | 2009MA58 | NUCLEAR REACTIONS $^{89}\text{Y}(\text{Be}, 3\text{n})$ , $(\text{Be}, 4\text{n})$ , $(\text{Be}, 5\text{n})$ , (p, np), (p, d), E<47.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced $^{93,94,95}\text{Tc}$ product yield as function of projectile energy. Comparison with PACE-II prediction. JOUR RAACA 97 663  |
|                  | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , E=2.5 GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$<br>Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891 |
| $^{95}\text{Rh}$ | 2008WE10 | ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310   |
| $^{95}\text{Pd}$ | 2008WE10 | ATOMIC MASSES $^{84}\text{Y}$ , $^{87}\text{Zr}$ , $^{88,89}\text{Mo}$ , $^{88,89,90,91,92}\text{Tc}$ , $^{90,91,92,93}\text{Ru}$ , $^{92,93,94,95}\text{Rh}$ , $^{94,95,95\text{m},96}\text{Pd}$ ; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310   |

**A=96**

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| $^{96}\text{Kr}$ | 2009MA47 | NUCLEAR REACTIONS $^{238}\text{U}(\text{Xe}, \text{X})^{96}\text{Kr}$ / $^{98}\text{Sr}$ / $^{100}\text{Zr}$ , E=954 MeV; measured $E\gamma$ , $I\gamma$ , (fission fragment) $\gamma$ -, $\gamma\gamma$ -coin. $^{96}\text{Kr}$ ; deduced levels, J, $\pi$ and quadrupole deformation. Systematics of first 2+ states, ratios of energies of first 2+ and 4+ states, quadrupole deformation parameter for even-even nuclei in N=38-64, Z=36-44 region. Comparison with various theoretical model calculations. JOUR PRVCA 80 021301 |
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KEYNUMBERS AND KEYWORDS

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**A=96 (continued)**

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| <sup>96</sup> Rb | 2009F005 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>60m</sup> Mn / <sup>78m</sup> Ga / <sup>82m</sup> Ga / <sup>92m</sup> Br / <sup>95m</sup> Rb / <sup>98m</sup> Rb / <sup>92m</sup> Y / <sup>101m</sup> Y / <sup>112m</sup> Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup> Mn, <sup>78,82</sup> Ga, <sup>92</sup> Br, <sup>95,98</sup> Rb, <sup>92,101</sup> Y, <sup>112</sup> Tc; deduced levels, J, $\pi$ . <sup>66m</sup> Cu, <sup>78m</sup> Zn, <sup>88m</sup> Br, <sup>95m</sup> Kr, <sup>96m</sup> Rb, <sup>97m,100m</sup> Sr, <sup>99m</sup> Mo, <sup>121m</sup> Pd, <sup>124m</sup> Sn, <sup>125m</sup> Xe; measured E $\gamma$ and half-lives. <sup>91,92,93</sup> Y; measured E $\gamma$ . JOUR PRVCA 79 064318 |
|                  | 2009LE26 | RADIOACTIVITY <sup>84g</sup> Ga, <sup>84m</sup> Ga( $\beta^-$ ), ( $\beta^-$ n), <sup>84</sup> Ge( $\beta^-$ )[from U( $\gamma$ , X), E=0-50 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta\gamma$ -coin, half-lives. <sup>84</sup> Ga, <sup>84</sup> Ge, <sup>84</sup> As, <sup>83</sup> Ge; deduced levels, J, $\pi$ , delayed-neutron emission probabilities, logft. <sup>83</sup> Ge, <sup>84</sup> As, <sup>89,90,93,94,96</sup> Rb( $\beta^-$ ); measured E $\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic <sup>78</sup> Ni nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308   |
| <sup>96</sup> Sr | 2009LE26 | RADIOACTIVITY <sup>84g</sup> Ga, <sup>84m</sup> Ga( $\beta^-$ ), ( $\beta^-$ n), <sup>84</sup> Ge( $\beta^-$ )[from U( $\gamma$ , X), E=0-50 MeV]; measured E $\gamma$ , I $\gamma$ , $\beta\gamma$ -coin, half-lives. <sup>84</sup> Ga, <sup>84</sup> Ge, <sup>84</sup> As, <sup>83</sup> Ge; deduced levels, J, $\pi$ , delayed-neutron emission probabilities, logft. <sup>83</sup> Ge, <sup>84</sup> As, <sup>89,90,93,94,96</sup> Rb( $\beta^-$ ); measured E $\gamma$ . PARRNe-ALTO facility. Implications for structure near doubly-magic <sup>78</sup> Ni nucleus. Z=32-40 (even), N=52; N=42-54, Z=32; systematics of first 2+ and 4+ states. JOUR PRVCA 80 044308   |
|                  | 2009RZ01 | RADIOACTIVITY <sup>248</sup> Cm(SF); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , $\gamma(\text{lin pol})$ . <sup>92,94,96</sup> Sr; deduced levels, J, $\pi$ , multipolarity, bands, configurations. Comparison with shell-model calculations. JOUR PRVCA 79 024319   |
| <sup>96</sup> Zr | 2008KOZV | 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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limits, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Moscow,P203,Kochetov  |
|                  | 2009KOZY | 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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limit, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Cheboksary,P84,Kochetov  |
| <sup>96</sup> Nb | 2009NA10 | NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>60</sup> Co; Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891  |
|                  | 2009RE01 | NUCLEAR REACTIONS <sup>99</sup> Tc(n, n' $\gamma$ ), (n, p), (n, $\alpha$ ), E=threshold-20.6 MeV; measured $\sigma$ using the activation method. Comparison with TALYS and STAPRE calculations. JOUR NUPAB 815 1   |
| <sup>96</sup> Mo | 2008KOZV | 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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limits, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Moscow,P203,Kochetov  |
|                  | 2009AGZY | NUCLEAR REACTIONS <sup>95</sup> Mo(n, $\gamma$ ), <sup>151,153</sup> Eu(n, $\gamma$ ), <sup>155,157</sup> Gd(n, $\gamma$ ), E=10 meV-100 keV; measured E $\gamma$ , I $\gamma$ , $\gamma$ multiplicity using DANCE BaF <sub>2</sub> array, In, En using TOF method; deduced J, $\pi$ of n-resonances using DICEBOX code. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P11,Agvaanluvsan  |

KEYNUMBERS AND KEYWORDS

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**A=96 (continued)**

- 2009CH09 NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup>Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
- 2009KOZY 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limit,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
- 2009RU05 NUCLEAR REACTIONS <sup>92,94,96,98,100</sup>Mo( $\gamma, \gamma'$ ), E=4-13 MeV; measured  $E\gamma, I\gamma$ , absolute photoabsorption  $\sigma$ . Comparison with QRPA calculations. JOUR PRVCA 79 061302
- 2009SH05 NUCLEAR REACTIONS <sup>95</sup>Mo(n,  $\gamma$ ), E<2 keV; measured  $E\gamma, I\gamma$ , from multi-step  $\gamma$  cascades for s- and p-wave neutron resonances below 2 keV. Compared  $\gamma$  spectral shapes to DICEBOX statistical model simulations. Compared multi-step  $\gamma$ -cascade spectra for different multiplicities from various resonances with predictions of different photon strength function models. JOUR PRVCA 79 024301
- <sup>96</sup>Tc 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma, F$ ), E=2.5 GeV; <sup>47</sup>Sc;<sup>48</sup>V;<sup>59</sup>Fe;<sup>72</sup>Zn;<sup>75</sup>Se;<sup>77</sup>Br;<sup>83</sup>Rb;<sup>85</sup>Kr;<sup>87</sup>Y;<sup>88</sup>Kr;<sup>88</sup>Zr;<sup>89</sup>Zr;<sup>91</sup>Sr;<sup>92</sup>Sr;<sup>95</sup>Zr;<sup>97</sup>Zr;<sup>99</sup>Mo;<sup>99</sup>Rh;<sup>103</sup>Ru;<sup>105</sup>Ru;<sup>105</sup>Rh;<sup>105</sup>Ag;<sup>111</sup>Ag;<sup>111</sup>In;<sup>112</sup>Ag;<sup>115</sup>Cd;<sup>117</sup>Cd;<sup>121</sup>Te;<sup>129</sup>Sb;<sup>6</sup> Measured  $E\gamma, I\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009SI28 NUCLEAR REACTIONS <sup>197</sup>Au, <sup>181</sup>Ta, <sup>93</sup>Nb( $\alpha, n$ ), <sup>197</sup>Au, <sup>181</sup>Ta( $\alpha, 2n$ ), <sup>181</sup>Ta( $\alpha, 3n$ ), <sup>197</sup>Au( $\alpha, 2pn$ ), <sup>93</sup>Nb( $\alpha, 2p$ ), <sup>197</sup>Au, <sup>93</sup>Nb( $\alpha, \alpha n$ ), <sup>27</sup>Al( $\alpha, \alpha 2pn$ ), E=18-60 MeV; measured  $E\alpha, I\alpha, E\gamma, I\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- <sup>96</sup>Ru 2008DE30 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured  $E\gamma, I\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- <sup>96</sup>Pd 2008WE10 ATOMIC MASSES <sup>84</sup>Y, <sup>87</sup>Zr, <sup>88,89</sup>Mo, <sup>88,89,90,91,92</sup>Tc, <sup>90,91,92,93</sup>Ru, <sup>92,93,94,95</sup>Rh, <sup>94,95,95m,96</sup>Pd; measured masses. Comparison with evaluated data. JOUR PRVCA 78 054310
- <sup>96</sup>Cd 2008BA53 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>112</sup>Sn, X)<sup>96</sup>Cd / <sup>98</sup>In / <sup>100</sup>Sn, E=120 MeV / nucleon; measured cross sections. JOUR PRLTA 101 252501
- 2008BA53 RADIOACTIVITY <sup>96</sup>Cd, <sup>98</sup>In, <sup>100</sup>Sn; measured decay spectra, half-lives. JOUR PRLTA 101 252501

**A=97**

- <sup>97</sup>Sr 2009F005 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured  $E\gamma, I\gamma, \gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured  $E\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured  $E\gamma$ . JOUR PRVCA 79 064318



KEYNUMBERS AND KEYWORDS

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**A=97 (continued)**

<sup>97</sup> Y	2009MA40	RADIOACTIVITY <sup>97m</sup> Y( $\beta^-$ ); measured I $\beta$ , $\beta\gamma$ from high-spin isomer. JOUR PRVCA 80 017302
<sup>97</sup> Zr	2009LI36	NUCLEAR REACTIONS <sup>94</sup> Zr, <sup>96</sup> Zr(n, $\gamma$ ), E epithermal; measured E $\gamma$ , I $\gamma$ ; deduced k <sub>0</sub> -factors. Neutron activation analysis. JOUR ARISE 67 2092
	2009MA26	NUCLEAR REACTIONS <sup>238</sup> U( <sup>48</sup> Ca, X), E=330 MeV; <sup>97</sup> Zr; measured E $\gamma$ , I $\gamma$ , delayed $\gamma\gamma$ -coin; deduced J, $\pi$ , level scheme, yrast structure. JOUR APOBB 40 633
	2009MA40	NUCLEAR REACTIONS <sup>238</sup> U( <sup>48</sup> Ca, X), E=330 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>97</sup> Zr; deduced levels, J, $\pi$ . Comparison with shell-model calculations. JOUR PRVCA 80 017302
	2009MA40	RADIOACTIVITY <sup>97m</sup> Y( $\beta^-$ ); measured I $\beta$ , $\beta\gamma$ from high-spin isomer. JOUR PRVCA 80 017302
	2009NA10	NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>6</sup> Li
<sup>97</sup> Mo	2009CH09	NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup> Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
<sup>97</sup> Tc	2009G029	RADIOACTIVITY <sup>97</sup> Ru(EC); <sup>103</sup> Ru, <sup>105</sup> Rh( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
<sup>97</sup> Ru	2009G029	RADIOACTIVITY <sup>97</sup> Ru(EC); <sup>103</sup> Ru, <sup>105</sup> Rh( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
<sup>97</sup> Pd	2009EL08	ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1

**A=98**

<sup>98</sup> Rb	2009F005	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>60m</sup> Mn / <sup>78m</sup> Ga / <sup>82m</sup> Ga / <sup>92m</sup> Br / <sup>95m</sup> Rb / <sup>98m</sup> Rb / <sup>92m</sup> Y / <sup>101m</sup> Y / <sup>112m</sup> Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup> Mn, <sup>78,82</sup> Ga, <sup>92</sup> Br, <sup>95,98</sup> Rb, <sup>92,101</sup> Y, <sup>112</sup> Tc; deduced levels, J, $\pi$ . <sup>66m</sup> Cu, <sup>78m</sup> Zn, <sup>88m</sup> Br, <sup>95m</sup> Kr, <sup>96m</sup> Rb, <sup>97m,100m</sup> Sr, <sup>99m</sup> Mo, <sup>121m</sup> Pd, <sup>124m</sup> Sn, <sup>125m</sup> Xe; measured E $\gamma$ and half-lives. <sup>91,92,93</sup> Y; measured E $\gamma$ . JOUR PRVCA 79 064318
<sup>98</sup> Sr	2009MA47	NUCLEAR REACTIONS <sup>238</sup> U( <sup>136</sup> Xe, X) <sup>96</sup> Kr / <sup>98</sup> Sr / <sup>100</sup> Zr, E=954 MeV; measured E $\gamma$ , I $\gamma$ , (fission fragment) $\gamma^-$ , $\gamma\gamma$ -coin. <sup>96</sup> Kr; deduced levels, J, $\pi$ and quadrupole deformation. Systematics of first 2+ states, ratios of energies of first 2+ and 4+ states, quadrupole deformation parameter for even-even nuclei in N=38-64, Z=36-44 region. Comparison with various theoretical model calculations. JOUR PRVCA 80 021301
<sup>98</sup> Mo	2009CH09	NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup> Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23

KEYNUMBERS AND KEYWORDS

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**A=98 (continued)**

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|                  | 2009RU05 | NUCLEAR REACTIONS <sup>92,94,96,98,100</sup> Mo( $\gamma$ , $\gamma'$ ), E=4-13 MeV; measured E $\gamma$ , I $\gamma$ , absolute photoabsorption $\sigma$ . Comparison with QRPA calculations. JOUR PRVCA 79 061302   |
| <sup>98</sup> Ru | 2008DE30 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>110</sup> Pd, <sup>110</sup> Pd'), E=66 MeV / nucleon; <sup>9</sup> Be( <sup>114</sup> Pd, <sup>114</sup> Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup> Pd; deduced levels, J, $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup> Pd, <sup>104,106,108,110,112,114,116,118</sup> Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup> Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
| <sup>98</sup> Pd | 2009EL08 | ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1  |
| <sup>98</sup> Cd | 2007WEZX | RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007   |
| <sup>98</sup> In | 2007WEZX | RADIOACTIVITY <sup>75</sup> Sr, <sup>77,78</sup> Y, <sup>79,80</sup> Zr, <sup>83,84</sup> Mo, <sup>88,89</sup> Ru, <sup>92,93</sup> Pd, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94,98</sup> In(EC); measured half-lives; <sup>76</sup> Y, <sup>78</sup> Zr, <sup>81</sup> Nb, <sup>85</sup> Tc(p); deduced half-life limits; <sup>78</sup> Y, <sup>82</sup> Nb, <sup>86</sup> Tc, <sup>90</sup> Rh, <sup>94</sup> Ag, <sup>98</sup> In(EC); deduced q-values. PREPRINT Wefers,10/04/2007   |
|                  | 2008BA53 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>112</sup> Sn, X) <sup>96</sup> Cd / <sup>98</sup> In / <sup>100</sup> Sn, E=120 MeV / nucleon; measured cross sections. JOUR PRLTA 101 252501   |
|                  | 2008BA53 | RADIOACTIVITY <sup>96</sup> Cd, <sup>98</sup> In, <sup>100</sup> Sn; measured decay spectra, half-lives. JOUR PRLTA 101 252501  |

**A=99**

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| <sup>99</sup> Zr | 2009PE06 | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806 |
|                  | 2009UR03 | RADIOACTIVITY <sup>248</sup> Cm(SF); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>103</sup> Zr; deduced levels, J, $\pi$ , bands. <sup>100,102,104</sup> Zr, <sup>142,143,144</sup> Ba; measured E $\gamma$ . <sup>100,101,102,103,104</sup> Zr; deduced mass correlations in fission of <sup>248</sup> Cm. <sup>99,101,103</sup> Zr; systematics of neutron configurations. Comparison of <sup>103</sup> Zr levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301  |
| <sup>99</sup> Nb | 2009CH25 | NUCLEAR MOMENTS <sup>90,91,92,93,99,101,103</sup> Nb; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501   |

KEYNUMBERS AND KEYWORDS

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**A=99 (continued)**

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| <sup>99</sup> Mo | 2009BH06 | NUCLEAR REACTIONS <sup>67</sup> Zn, <sup>92</sup> Mo(n, p), <sup>98</sup> Mo(n, $\gamma$ ), E=1.6, 3.7 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . Comparison with EMPIRE-2.19 model code. JOUR NSENA 163 175  |
|                  | 2009F005 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>238</sup> U, X) <sup>60m</sup> Mn / <sup>78m</sup> Ga / <sup>82m</sup> Ga / <sup>92m</sup> Br / <sup>95m</sup> Rb / <sup>98m</sup> Rb / <sup>92m</sup> Y / <sup>101m</sup> Y / <sup>112m</sup> Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup> Mn, <sup>78,82</sup> Ga, <sup>92</sup> Br, <sup>95,98</sup> Rb, <sup>92,101</sup> Y, <sup>112</sup> Tc; deduced levels, J, $\pi$ . <sup>66m</sup> Cu, <sup>78m</sup> Zn, <sup>88m</sup> Br, <sup>95m</sup> Kr, <sup>96m</sup> Rb, <sup>97m,100m</sup> Sr, <sup>99m</sup> Mo, <sup>121m</sup> Pd, <sup>124m</sup> Sn, <sup>125m</sup> Xe; measured E $\gamma$ and half-lives. <sup>91,92,93</sup> Y; measured E $\gamma$ . JOUR PRVCA 79 064318 |
|                  | 2009KIZY | NUCLEAR REACTIONS Mo(n, $\gamma$ ), E=0.01-200 eV; measured In; deduced $\sigma$ ; <sup>186</sup> W(n, $\gamma$ ), E=thermal; <sup>98</sup> Mo(n, $\gamma$ ), E=thermal; measured In relative to <sup>197</sup> Au(n, $\gamma$ ); deduced $\sigma$ , resonance integral; <sup>45</sup> Sc( $\gamma$ , n), E=65 MeV; Ti( $\gamma$ , x) <sup>44</sup> Sc, E=65 MeV; <sup>103</sup> Rh( $\gamma$ , 4n), E=65 MeV; Fe( $\gamma$ , x) <sup>52</sup> Mn, E=65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , isomeric transition. Compared to other data. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P72,Kim  |
|                  | 2009NA10 | NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>60</sup> Co  |
|                  | 2009NG01 | NUCLEAR REACTIONS <sup>98</sup> Mo(n, $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ , cross section; deduced resonance integral. Compared results to existing data and evaluated databases. JOUR NIMBE 267 462  |
|                  | 2009RA16 | NUCLEAR REACTIONS <sup>97</sup> Mo(t, p), E=12 MeV; measured Ep, Ip; deduced $\sigma$ , $\sigma(\theta)$ , level energies, J, $\pi$ . Comparison with DWBA calculations. JOUR IMPEE 18 1483   |
|                  | 2009RE01 | NUCLEAR REACTIONS <sup>99</sup> Tc(n, n' $\gamma$ ), (n, p), (n, $\alpha$ ), E=threshold-20.6 MeV; measured $\sigma$ using the activation method. Comparison with TALYS and STAPRE calculations. JOUR NUPAB 815 1   |
| <sup>99</sup> Tc | 2009RE01 | NUCLEAR REACTIONS <sup>99</sup> Tc(n, n' $\gamma$ ), (n, p), (n, $\alpha$ ), E=threshold-20.6 MeV; measured $\sigma$ using the activation method. Comparison with TALYS and STAPRE calculations. JOUR NUPAB 815 1   |
| <sup>99</sup> Rh | 2009KIZY | NUCLEAR REACTIONS Mo(n, $\gamma$ ), E=0.01-200 eV; measured In; deduced $\sigma$ ; <sup>186</sup> W(n, $\gamma$ ), E=thermal; <sup>98</sup> Mo(n, $\gamma$ ), E=thermal; measured In relative to <sup>197</sup> Au(n, $\gamma$ ); deduced $\sigma$ , resonance integral; <sup>45</sup> Sc( $\gamma$ , n), E=65 MeV; Ti( $\gamma$ , x) <sup>44</sup> Sc, E=65 MeV; <sup>103</sup> Rh( $\gamma$ , 4n), E=65 MeV; Fe( $\gamma$ , x) <sup>52</sup> Mn, E=65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , isomeric transition. Compared to other data. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P72,Kim  |
|                  | 2009NA10 | NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>60</sup> Co  |
|                  |          | Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891  |

KEYNUMBERS AND KEYWORDS

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**A=99 (continued)**

- <sup>99</sup>Pd      2009EL08      ATOMIC MASSES <sup>97,98,99,101</sup>Pd, <sup>100</sup>Ag, <sup>101,102,103,104,105</sup>Cd, <sup>102,104</sup>In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1
- <sup>99</sup>Cd      2009BR09      ATOMIC MASSES <sup>99,100,101,102,103,104,105,106,107,108,109</sup>Cd; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805

**A=100**

- <sup>100</sup>Sr      2009F005      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- <sup>100</sup>Y      2009PE06      RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>100</sup>Zr      2009MA47      NUCLEAR REACTIONS <sup>238</sup>U(<sup>136</sup>Xe, X)<sup>96</sup>Kr / <sup>98</sup>Sr / <sup>100</sup>Zr, E=954 MeV; measured E $\gamma$ , I $\gamma$ , (fission fragment) $\gamma^-$ ,  $\gamma\gamma$ -coin. <sup>96</sup>Kr; deduced levels, J,  $\pi$  and quadrupole deformation. Systematics of first 2+ states, ratios of energies of first 2+ and 4+ states, quadrupole deformation parameter for even-even nuclei in N=38-64, Z=36-44 region. Comparison with various theoretical model calculations. JOUR PRVCA 80 021301
- 2009PE06      RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- 2009UR03      RADIOACTIVITY <sup>248</sup>Cm(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>103</sup>Zr; deduced levels, J,  $\pi$ , bands. <sup>100,102,104</sup>Zr, <sup>142,143,144</sup>Ba; measured E $\gamma$ . <sup>100,101,102,103,104</sup>Zr; deduced mass correlations in fission of <sup>248</sup>Cm. <sup>99,101,103</sup>Zr; systematics of neutron configurations. Comparison of <sup>103</sup>Zr levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301

KEYNUMBERS AND KEYWORDS

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A=100 (*continued*)

<sup>100</sup> Nb	2009LU11	RADIOACTIVITY <sup>252</sup> Cf(SF); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. <sup>100</sup> Nb, <sup>148</sup> La; deduced ICCs, high-spin levels, J, $\pi$ , rotational bands, multipolarities, shape coexistence and configurations. JOUR NUPAB 825 1
<sup>100</sup> Mo	2008KOZV	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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limits, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Moscow,P203,Kochetov
	2008SJ01	RADIOACTIVITY <sup>100</sup> Tc(EC); measured X-ray spectra, E $\gamma$ , I $\gamma$ ; deduced branching ratio, B(GT). JOUR PRVCA 78 064317
	2009CH09	NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup> Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
	2009KI04	RADIOACTIVITY <sup>100</sup> Mo( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, T <sub>1/2</sub> for double-beta decay to excited states. JOUR NUPAB 821 251
	2009KOZY	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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limit, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Cheboksary,P84,Kochetov
	2009RU05	NUCLEAR REACTIONS <sup>92,94,96,98,100</sup> Mo( $\gamma$ , $\gamma'$ ), E=4-13 MeV; measured E $\gamma$ , I $\gamma$ , absolute photoabsorption $\sigma$ . Comparison with QRPA calculations. JOUR PRVCA 79 061302
<sup>100</sup> Tc	2008SJ01	RADIOACTIVITY <sup>100</sup> Tc(EC); measured X-ray spectra, E $\gamma$ , I $\gamma$ ; deduced branching ratio, B(GT). JOUR PRVCA 78 064317
<sup>100</sup> Ru	2008DE30	NUCLEAR REACTIONS <sup>9</sup> Be( <sup>110</sup> Pd, <sup>110</sup> Pd'), E=66 MeV / nucleon; <sup>9</sup> Be( <sup>114</sup> Pd, <sup>114</sup> Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup> Pd; deduced levels, J, $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup> Pd, <sup>104,106,108,110,112,114,116,118</sup> Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup> Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
	2008KOZV	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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limits, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Moscow,P203,Kochetov
	2009KI04	RADIOACTIVITY <sup>100</sup> Mo( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, T <sub>1/2</sub> for double-beta decay to excited states. JOUR NUPAB 821 251
	2009KOZY	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 $0\nu 2\beta^-$ -decay T <sub>1/2</sub> lower limit, $2\nu 2\beta^-$ -decay T <sub>1/2</sub> . CONF Cheboksary,P84,Kochetov
<sup>100</sup> Pd	2009RA06	NUCLEAR REACTIONS <sup>99</sup> Ru( <sup>3</sup> He, 2n), E=17 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>100</sup> Pd; deduced J, $\pi$ , level energies, branching and mixing ratios. Comparison with model calculations. JOUR NUPAB 821 1
	2009RA28	NUCLEAR REACTIONS <sup>92</sup> Mo( <sup>11</sup> B, 2np), E=43 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin and half-lives using the recoil-distance Doppler-shift (RDDS) technique. <sup>100</sup> Pd; deduced levels, B(E1), B(E2). Comparison with predictions from collective models and the shell model. JOUR PRVCA 80 044331
<sup>100</sup> Ag	2009EL08	ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1

KEYNUMBERS AND KEYWORDS

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**A=100 (continued)**

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| $^{100}\text{Cd}$ | 2009BR09 | ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805  |
| $^{100}\text{Sn}$ | 2008BA53 | NUCLEAR REACTIONS $^9\text{Be}(^{112}\text{Sn}, \text{X})^{96}\text{Cd} / ^{98}\text{In} / ^{100}\text{Sn}$ , E=120 MeV / nucleon; measured cross sections. JOUR PRLTA 101 252501   |
|                   | 2008BA53 | RADIOACTIVITY $^{96}\text{Cd}$ , $^{98}\text{In}$ , $^{100}\text{Sn}$ ; measured decay spectra, half-lives. JOUR PRLTA 101 252501   |
|                   | 2008KRZW | NUCLEAR REACTIONS $^{86}\text{Kr}(^9\text{Be}, \text{X})$ , $^{124}\text{Xe}(^9\text{Be}, \text{X})$ , E=500, 1000 MeV / nucleon; $^{50}\text{Ca}$ , $^{56}\text{Ti}$ , $^{100}\text{Sn}$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced angular momentum values, spectroscopic factors. CONF Cappadocia (Nuclear Physics and Astrophysics),P52,Krucken |

**A=101**

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| $^{101}\text{Y}$  | 2009F005 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{60m}\text{Mn} / ^{78m}\text{Ga} / ^{82m}\text{Ga} / ^{92m}\text{Br} / ^{95m}\text{Rb} / ^{98m}\text{Rb} / ^{92m}\text{Y} / ^{101m}\text{Y} / ^{112m}\text{Tc}$ , E=80 MeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. $^{60}\text{Mn}$ , $^{78,82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95,98}\text{Rb}$ , $^{92,101}\text{Y}$ , $^{112}\text{Tc}$ ; deduced levels, J, $\pi$ . $^{66m}\text{Cu}$ , $^{78m}\text{Zn}$ , $^{88m}\text{Br}$ , $^{95m}\text{Kr}$ , $^{96m}\text{Rb}$ , $^{97m,100m}\text{Sr}$ , $^{99m}\text{Mo}$ , $^{121m}\text{Pd}$ , $^{124m}\text{Sn}$ , $^{125m}\text{Xe}$ ; measured $E_\gamma$ and half-lives. $^{91,92,93}\text{Y}$ ; measured $E_\gamma$ . JOUR PRVCA 79 064318 |
|                   | 2009PE06 | RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806   |
| $^{101}\text{Zr}$ | 2009G018 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\gamma\gamma(\theta)$ . $^{101}\text{Zr}$ , $^{103,105,107}\text{Mo}$ , $^{109,111}\text{Ru}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318   |
|                   | 2009PE06 | RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806   |
|                   | 2009UR03 | RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin. $^{103}\text{Zr}$ ; deduced levels, J, $\pi$ , bands. $^{100,102,104}\text{Zr}$ , $^{142,143,144}\text{Ba}$ ; measured $E_\gamma$ . $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of $^{248}\text{Cm}$ . $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of $^{103}\text{Zr}$ levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301  |

KEYNUMBERS AND KEYWORDS

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A=101 (*continued*)

<sup>101</sup> Nb	2009CH25	NUCLEAR MOMENTS <sup>90,91,92,93,99,101,103</sup> Nb; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501
<sup>101</sup> Mo	2009DAZY	RADIOACTIVITY <sup>101</sup> Mo( $\beta^-$ )[from <sup>100</sup> Mo+n]; <sup>101</sup> Tc( $\beta^-$ )[from <sup>101</sup> Mo]; measured E $\gamma$ , I $\gamma$ ; deduced half-life. CONF Brazil (Nuclear Physics 2008) Proc. P185,da Silva
<sup>101</sup> Tc	2009DAZY	RADIOACTIVITY <sup>101</sup> Mo( $\beta^-$ )[from <sup>100</sup> Mo+n]; <sup>101</sup> Tc( $\beta^-$ )[from <sup>101</sup> Mo]; measured E $\gamma$ , I $\gamma$ ; deduced half-life. CONF Brazil (Nuclear Physics 2008) Proc. P185,da Silva
<sup>101</sup> Ru	2009DAZY	RADIOACTIVITY <sup>101</sup> Mo( $\beta^-$ )[from <sup>100</sup> Mo+n]; <sup>101</sup> Tc( $\beta^-$ )[from <sup>101</sup> Mo]; measured E $\gamma$ , I $\gamma$ ; deduced half-life. CONF Brazil (Nuclear Physics 2008) Proc. P185,da Silva
<sup>101</sup> Rh	2009MI16	NUCLEAR REACTIONS <sup>93</sup> Nb( <sup>12</sup> C, X), E=45 MeV; <sup>89</sup> Y( <sup>12</sup> C, X), ( <sup>16</sup> O, X), E=40, 54 MeV; <sup>105</sup> Ag, <sup>101</sup> Rh; measured E $\gamma$ , I $\gamma$ , E $\alpha$ , I $\alpha$ , Ep, Ip, particle- $\gamma$ -coin.; deduced $\gamma$ -ray multiplicity gated by proton and $\alpha$ particle, proton spectra, broad structures. JOUR JPGPE 36 095103
	2009NA10	NUCLEAR REACTIONS <sup>209</sup> Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup> Sc; <sup>48</sup> V; <sup>59</sup> Fe; <sup>72</sup> Zn; <sup>75</sup> Se; <sup>77</sup> Br; <sup>83</sup> Rb; <sup>85</sup> Kr; <sup>87</sup> Y; <sup>88</sup> Kr; <sup>88</sup> Zr; <sup>89</sup> Zr; <sup>91</sup> Sr; <sup>92</sup> Sr; <sup>95</sup> Zr; <sup>97</sup> Zr; <sup>99</sup> Mo; <sup>99</sup> Rh; <sup>103</sup> Ru; <sup>105</sup> Ru; <sup>105</sup> Rh; <sup>105</sup> Ag; <sup>111</sup> Ag; <sup>111</sup> In; <sup>112</sup> Ag; <sup>115</sup> Cd; <sup>117</sup> Cd; <sup>121</sup> Te; <sup>129</sup> Sb; <sup>6</sup>
		Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
<sup>101</sup> Pd	2009EL08	ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1
<sup>101</sup> Cd	2009BR09	ATOMIC MASSES <sup>99,100,101,102,103,104,105,106,107,108,109</sup> Cd; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
	2009EL08	ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1
<sup>101</sup> In	2009EL08	NUCLEAR REACTIONS <sup>92</sup> Mo(p, X) <sup>85</sup> Nb / <sup>86</sup> Nb / <sup>87</sup> Nb / <sup>88</sup> Nb / <sup>89</sup> Nb / <sup>90</sup> Nb / <sup>91</sup> Nb, E=62 MeV; <sup>106</sup> Cd(p, X) <sup>101</sup> In / <sup>102</sup> In / <sup>103</sup> In / <sup>104</sup> In / <sup>105</sup> In / <sup>106</sup> In / <sup>107</sup> In / <sup>108</sup> In / <sup>109</sup> In, E=62 MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
<sup>101</sup> Sn	2009SE06	NUCLEAR REACTIONS <sup>58</sup> Ni( <sup>46</sup> Ti, 3n), E=192 MeV; measured E $\gamma$ , I $\gamma$ , $\beta$ -delayed Ep, Ip. Comparison with shell model calculations. JOUR APOBB 40 621

## A=102

$^{102}\text{Y}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{102}\text{Zr}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
	2009UR03	RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{103}\text{Zr}$ ; deduced levels, J, $\pi$ , bands. $^{100,102,104}\text{Zr}$ , $^{142,143,144}\text{Ba}$ ; measured $E\gamma$ . $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of $^{248}\text{Cm}$ . $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of $^{103}\text{Zr}$ levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301
$^{102}\text{Nb}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{102}\text{Mo}$	2009CH09	NUCLEAR MOMENTS $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
$^{102}\text{Ru}$	2008DE30	NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, J, $\pi$ , B(E2). $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
$^{102}\text{Pd}$	2008DE30	NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, J, $\pi$ , B(E2). $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
$^{102}\text{Cd}$	2009BR09	ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805



KEYNUMBERS AND KEYWORDS

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**A=102 (continued)**

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| 2009EL08                   | ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1  |
| <sup>102</sup> In 2009EL08 | ATOMIC MASSES <sup>97,98,99,101</sup> Pd, <sup>100</sup> Ag, <sup>101,102,103,104,105</sup> Cd, <sup>102,104</sup> In; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1  |
| 2009EL08                   | NUCLEAR REACTIONS <sup>92</sup> Mo(p, X) <sup>85</sup> Nb / <sup>86</sup> Nb / <sup>87</sup> Nb / <sup>88</sup> Nb / <sup>89</sup> Nb / <sup>90</sup> Nb / <sup>91</sup> Nb, E=62 MeV; <sup>106</sup> Cd(p, X) <sup>101</sup> In / <sup>102</sup> In / <sup>103</sup> In / <sup>104</sup> In / <sup>105</sup> In / <sup>106</sup> In / <sup>107</sup> In / <sup>108</sup> In / <sup>109</sup> In, E=62 MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1 |

**A=103**

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| <sup>103</sup> Y 2009PE06  | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806 |
| <sup>103</sup> Zr 2009PE06 | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806 |
| 2009UR03                   | RADIOACTIVITY <sup>248</sup> Cm(SF); measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>103</sup> Zr; deduced levels, J, $\pi$ , bands. <sup>100,102,104</sup> Zr, <sup>142,143,144</sup> Ba; measured E $\gamma$ . <sup>100,101,102,103,104</sup> Zr; deduced mass correlations in fission of <sup>248</sup> Cm. <sup>99,101,103</sup> Zr; systematics of neutron configurations. Comparison of <sup>103</sup> Zr levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301  |
| <sup>103</sup> Nb 2009CH25 | NUCLEAR MOMENTS <sup>90,91,92,93,99,101,103</sup> Nb; measured collinear fluorescence spectra, hfs coefficients; deduced magnetic dipole, electric quadrupole moments, mean-square charge radii. JOUR PRLTA 102 222501   |
| 2009PE06                   | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806 |

KEYNUMBERS AND KEYWORDS

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A=103 (*continued*)

	2009WA10	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{103}\text{Nb}$ ; deduced high-spin levels, J, $\pi$ , vibrational band structure. JOUR PYLBB 675 420
$^{103}\text{Mo}$	2009CH09	NUCLEAR MOMENTS $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
	2009G018	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\gamma\gamma(\theta)$ . $^{101}\text{Zr}$ , $^{103,105,107}\text{Mo}$ , $^{109,111}\text{Ru}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
$^{103}\text{Ru}$	2009G029	RADIOACTIVITY $^{97}\text{Ru}(\text{EC})$ ; $^{103}\text{Ru}$ , $^{105}\text{Rh}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891
$^{103}\text{Rh}$	2008NOZZ	NUCLEAR REACTIONS $^{238}\text{U}(\alpha, \text{X})$ , $E=62$ MeV; $^{19}\text{F}$ , $^{25}\text{Mg}$ , $^{32}\text{S}$ , $^{34}\text{S}$ , $^{88}\text{Sr}$ , $^{103}\text{Rh}$ ; measured $E\gamma$ , $I\gamma$ ; deduced neutron clusters. Activation method, Ge detector. CONF Moscow,P74,Novatsky
	2009G029	RADIOACTIVITY $^{97}\text{Ru}(\text{EC})$ ; $^{103}\text{Ru}$ , $^{105}\text{Rh}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
$^{103}\text{Pd}$	2009TA10	NUCLEAR REACTIONS $\text{Pd}(p, \text{X})^{103}\text{Ag}$ , $\text{Cd}(p, \text{X})^{103}\text{Ag}$ , $^{103}\text{Rh}(d, 2n)$ , $E<70$ meV; measured $E\gamma$ , $I\gamma$ , excitation functions using stacked foil activation technique. Compared results to model calculations. JOUR ARISE 67 1574
$^{103}\text{Ag}$	2009TA10	NUCLEAR REACTIONS $\text{Pd}(p, \text{X})^{103}\text{Ag}$ , $\text{Cd}(p, \text{X})^{103}\text{Ag}$ , $^{103}\text{Rh}(d, 2n)$ , $E<70$ meV; measured $E\gamma$ , $I\gamma$ , excitation functions using stacked foil activation technique. Compared results to model calculations. JOUR ARISE 67 1574
$^{103}\text{Cd}$	2009BR09	ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
	2009EL08	ATOMIC MASSES $^{97,98,99,101}\text{Pd}$ , $^{100}\text{Ag}$ , $^{101,102,103,104,105}\text{Cd}$ , $^{102,104}\text{In}$ ; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1
$^{103}\text{In}$	2009EL08	NUCLEAR REACTIONS $^{92}\text{Mo}(p, \text{X})^{85}\text{Nb}$ / $^{86}\text{Nb}$ / $^{87}\text{Nb}$ / $^{88}\text{Nb}$ / $^{89}\text{Nb}$ / $^{90}\text{Nb}$ / $^{91}\text{Nb}$ , $E=62$ MeV; $^{106}\text{Cd}(p, \text{X})^{101}\text{In}$ / $^{102}\text{In}$ / $^{103}\text{In}$ / $^{104}\text{In}$ / $^{105}\text{In}$ / $^{106}\text{In}$ / $^{107}\text{In}$ / $^{108}\text{In}$ / $^{109}\text{In}$ , $E=62$ MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1

## A=104

- $^{104}\text{Y}$       2009PE06      RADIOACTIVITY  $^{100,101,102,103,104,105}\text{Y}$ ,  $^{103,104,105,106,107}\text{Zr}$ ,  $^{106,107,108,109}\text{Nb}$ ,  $^{108,109,110,111}\text{Mo}$ ,  $^{109,110,111,112,113}\text{Tc}(\beta^-)$ ,  $(\beta^-n)$ [from  $^9\text{Be}(^{136}\text{Xe}, X)$ ,  $E=120$  MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- $^{104}\text{Zr}$       2009PE06      RADIOACTIVITY  $^{100,101,102,103,104,105}\text{Y}$ ,  $^{103,104,105,106,107}\text{Zr}$ ,  $^{106,107,108,109}\text{Nb}$ ,  $^{108,109,110,111}\text{Mo}$ ,  $^{109,110,111,112,113}\text{Tc}(\beta^-)$ ,  $(\beta^-n)$ [from  $^9\text{Be}(^{136}\text{Xe}, X)$ ,  $E=120$  MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- 2009UR03      RADIOACTIVITY  $^{248}\text{Cm}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{103}\text{Zr}$ ; deduced levels,  $J$ ,  $\pi$ , bands.  $^{100,102,104}\text{Zr}$ ,  $^{142,143,144}\text{Ba}$ ; measured  $E\gamma$ .  $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of  $^{248}\text{Cm}$ .  $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of  $^{103}\text{Zr}$  levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301
- $^{104}\text{Nb}$       2009PE06      RADIOACTIVITY  $^{100,101,102,103,104,105}\text{Y}$ ,  $^{103,104,105,106,107}\text{Zr}$ ,  $^{106,107,108,109}\text{Nb}$ ,  $^{108,109,110,111}\text{Mo}$ ,  $^{109,110,111,112,113}\text{Tc}(\beta^-)$ ,  $(\beta^-n)$ [from  $^9\text{Be}(^{136}\text{Xe}, X)$ ,  $E=120$  MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- $^{104}\text{Mo}$       2009CH09      NUCLEAR MOMENTS  $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
- 2009GU11      RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{106,107}\text{Tc}$ ; deduced levels,  $J$ ,  $\pi$ , bands, configurations, moments of inertia.  $^{104,105}\text{Mo}$ ,  $^{105,106}\text{Tc}$ ; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317
- $^{104}\text{Ru}$       2008DE30      NUCLEAR REACTIONS  $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ ,  $E=66$  MeV / nucleon;  $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ ,  $E=69$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  $^{110,114}\text{Pd}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(E2)$ .  $^{102,104,106,108,112,116}\text{Pd}$ ,  $^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of  $B(E2)$  values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- $^{104}\text{Pd}$       2007SOZX      NUCLEAR REACTIONS  $^9\text{Be}(\text{Zr}(^{13}\text{C}, 5\text{N}))$ ,  $E=51, 58$  MeV;  $^{104}\text{Pd}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced high-spin bands. REPT ATOMKI 2007 Annual,P26,Sohler

KEYNUMBERS AND KEYWORDS

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A=104 (*continued*)

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|                   | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , E=66 MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , E=69 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, J, $\pi$ , B(E2). $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
| $^{104}\text{Ag}$ | 2009BEZW | NUCLEAR REACTIONS $^{107}\text{Ag}(\gamma, 3n)$ , $^{109}\text{Ag}(\gamma, 5n)$ , E(end point)=33-100 MeV; measured $E\gamma$ , $I\gamma$ . $^{104}\text{Ag}$ ; deduced isomeric yield ratios depending on $E\gamma$ . CONF Cheboksary,P132,Bessheiko   |
|                   | 2009TR01 | NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{138}\text{Ce}$ , $^{153}\text{Eu}(\gamma, n)$ , E=10-25 MeV; $^{96}\text{Mo}$ , $^{118}\text{Sn}(\gamma, p)$ , E=10-25 MeV; $^{89}\text{Y}(\gamma, 2n)$ , E=10-25 MeV; $^{106}\text{Cd}$ , $^{112}\text{Sn}(\gamma, np)$ , E=10-25 MeV; measured $E\gamma$ , $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126   |
| $^{104}\text{Cd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , E=66 MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , E=69 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, J, $\pi$ , B(E2). $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
|                   | 2009BR09 | ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805  |
|                   | 2009EL08 | ATOMIC MASSES $^{97,98,99,101}\text{Pd}$ , $^{100}\text{Ag}$ , $^{101,102,103,104,105}\text{Cd}$ , $^{102,104}\text{In}$ ; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1  |
| $^{104}\text{In}$ | 2009EL08 | ATOMIC MASSES $^{97,98,99,101}\text{Pd}$ , $^{100}\text{Ag}$ , $^{101,102,103,104,105}\text{Cd}$ , $^{102,104}\text{In}$ ; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1  |
|                   | 2009EL08 | NUCLEAR REACTIONS $^{92}\text{Mo}(p, X)^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}$ , E=62 MeV; $^{106}\text{Cd}(p, X)^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}$ , E=62 MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1   |
| $^{104}\text{Sn}$ | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501  |

## A=105

$^{105}\text{Y}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^-n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{105}\text{Zr}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^-n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{105}\text{Nb}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^-n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{105}\text{Mo}$	2009CH09	NUCLEAR MOMENTS $^{90,91,92,94,95,96,97,98,100,102,103,104,105,106,108}\text{Mo}$ ; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23
	2009G018	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\gamma\gamma(\theta)$ . $^{101}\text{Zr}$ , $^{103,105,107}\text{Mo}$ , $^{109,111}\text{Ru}$ ; deduced levels, $J$ , $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
	2009GU11	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{106,107}\text{Tc}$ ; deduced levels, $J$ , $\pi$ , bands, configurations, moments of inertia. $^{104,105}\text{Mo}$ , $^{105,106}\text{Tc}$ ; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317
	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^-n)$ [from $^9\text{Be}(^{136}\text{Xe}, X)$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{105}\text{Tc}$	2009GU11	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{106,107}\text{Tc}$ ; deduced levels, $J$ , $\pi$ , bands, configurations, moments of inertia. $^{104,105}\text{Mo}$ , $^{105,106}\text{Tc}$ ; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317
$^{105}\text{Ru}$	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891

KEYNUMBERS AND KEYWORDS

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**A=105 (continued)**

$^{105}\text{Rh}$	2009G029	RADIOACTIVITY $^{97}\text{Ru}(\text{EC})$ ; $^{103}\text{Ru}$ , $^{105}\text{Rh}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Zn}$ ; Measured $E_\gamma$ , $I_\gamma$ , fission yields. JOUR NIMBE 267 1891
$^{105}\text{Pd}$	2009G029	RADIOACTIVITY $^{97}\text{Ru}(\text{EC})$ ; $^{103}\text{Ru}$ , $^{105}\text{Rh}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ , half-lives at room temperature and 19 K. JOUR PRVCA 80 045501
$^{105}\text{Ag}$	2009MI16	NUCLEAR REACTIONS $^{93}\text{Nb}(^{12}\text{C}, \text{X})$ , $E=45$ MeV; $^{89}\text{Y}(^{12}\text{C}, \text{X})$ , $(^{16}\text{O}, \text{X})$ , $E=40, 54$ MeV; $^{105}\text{Ag}$ , $^{101}\text{Rh}$ ; measured $E_\gamma$ , $I_\gamma$ , $E_\alpha$ , $I_\alpha$ , $E_p$ , $I_p$ , particle- $\gamma$ -coin.; deduced $\gamma$ -ray multiplicity gated by proton and $\alpha$ particle, proton spectra, broad structures. JOUR JPGPE 36 095103
	2009NA10	NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Zn}$ ; Measured $E_\gamma$ , $I_\gamma$ , fission yields. JOUR NIMBE 267 1891
	2010TA02	NUCLEAR REACTIONS $\text{Ag}(\alpha, \text{xn})^{108}\text{In} / ^{109}\text{In} / ^{110}\text{In} / ^{111}\text{In}$ , $\text{Ag}(\alpha, \text{xn}2\text{p})^{105}\text{Ag} / ^{106}\text{Ag} / ^{110}\text{Ag} / ^{111}\text{Ag}$ , $\text{Ag}(\alpha, \text{xnp})^{111}\text{Cd}$ , $E<40$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2
$^{105}\text{Cd}$	2009BR09	ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
	2009EL08	ATOMIC MASSES $^{97,98,99,101}\text{Pd}$ , $^{100}\text{Ag}$ , $^{101,102,103,104,105}\text{Cd}$ , $^{102,104}\text{In}$ ; measured masses using the JYFLTRAP Penning trap mass spectrometer. Comparison with evaluated values and data. JOUR ZAANE 40 1
$^{105}\text{In}$	2009EL08	NUCLEAR REACTIONS $^{92}\text{Mo}(\text{p}, \text{X})^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}$ , $E=62$ MeV; $^{106}\text{Cd}(\text{p}, \text{X})^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}$ , $E=62$ MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
$^{105}\text{Sn}$	2009EL07	ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501

**A=106**

$^{106}\text{Zr}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
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A=106 (*continued*)

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| $^{106}\text{Nb}$ | 2009PE06 | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806          |
| $^{106}\text{Mo}$ | 2008XU08 | RADIOACTIVITY <sup>252</sup> Cf(SF); measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. <sup>108</sup> Tc; deduced levels, J, $\pi$ , bands, B(E1) / B(E2) ratios. <sup>106,107</sup> Mo, <sup>107</sup> Tc; deduced bands. Comparison with particle-rotor model calculations. JOUR PRVCA 78 064301   |
|                   | 2009CH09 | NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup> Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23  |
|                   | 2009PE06 | RADIOACTIVITY <sup>100,101,102,103,104,105</sup> Y, <sup>103,104,105,106,107</sup> Zr, <sup>106,107,108,109</sup> Nb, <sup>108,109,110,111</sup> Mo, <sup>109,110,111,112,113</sup> Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup> Be( <sup>136</sup> Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806          |
| $^{106}\text{Tc}$ | 2009GU11 | RADIOACTIVITY <sup>252</sup> Cf(SF); measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. <sup>106,107</sup> Tc; deduced levels, J, $\pi$ , bands, configurations, moments of inertia. <sup>104,105</sup> Mo, <sup>105,106</sup> Tc; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317   |
| $^{106}\text{Ru}$ | 2008DE30 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>110</sup> Pd, <sup>110</sup> Pd'), E=66 MeV / nucleon; <sup>9</sup> Be( <sup>114</sup> Pd, <sup>114</sup> Pd'), E=69 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup> Pd; deduced levels, J, $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup> Pd, <sup>104,106,108,110,112,114,116,118</sup> Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup> Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
| $^{106}\text{Pd}$ | 2008DE30 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>110</sup> Pd, <sup>110</sup> Pd'), E=66 MeV / nucleon; <sup>9</sup> Be( <sup>114</sup> Pd, <sup>114</sup> Pd'), E=69 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup> Pd; deduced levels, J, $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup> Pd, <sup>104,106,108,110,112,114,116,118</sup> Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup> Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
|                   | 2008RUZZ | RADIOACTIVITY <sup>106</sup> Cd(2EC); measured $2\nu$ two-ec-decay $T_{1/2}$ lower limit. The Telescope Germanium Vertical (TGV-2) spectrometer. CONF Moscow,P193,Rukhadze  |
|                   | 2009DA16 | RADIOACTIVITY <sup>64</sup> Zn, <sup>106</sup> Cd, <sup>120</sup> Te(2EC), ( $2\beta^+$ ); <sup>114,116</sup> Cd, <sup>128</sup> Te, <sup>130</sup> Te( $2\beta^-$ ); measured $E\gamma$ , $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502  |
|                   | 2009RU07 | RADIOACTIVITY <sup>106</sup> Cd(2EC); measured $E\gamma$ , $I\gamma$ ; deduced 2EC-decay $T_{1/2}$ limits. TGV-2 spectrometer. JOUR BRSP 73 741   |

KEYNUMBERS AND KEYWORDS

A=106 (*continued*)

- 2009RUZZ RADIOACTIVITY  $^{106}\text{Cd}(2\beta^+)$ , ( $\beta^+\text{EC}$ ), (2EC); measured  $T_{1/2}$ ,  $E\gamma$ ,  $I\gamma$ . TGV-2 spectrometer. CONF Cheboksary,P83,Rukhadze
- $^{106}\text{Ag}$  2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, \text{F})$ ,  $E=2.5$  GeV;  $^{47}\text{Sc}$ ,  $^{48}\text{V}$ ,  $^{59}\text{Fe}$ ,  $^{72}\text{Zn}$ ,  $^{75}\text{Se}$ ,  $^{77}\text{Br}$ ,  $^{83}\text{Rb}$ ,  $^{85}\text{Kr}$ ,  $^{87}\text{Y}$ ,  $^{88}\text{Kr}$ ,  $^{88}\text{Zr}$ ,  $^{89}\text{Zr}$ ,  $^{91}\text{Sr}$ ,  $^{92}\text{Sr}$ ;  $^{95}\text{Zr}$ ,  $^{97}\text{Zr}$ ,  $^{99}\text{Mo}$ ,  $^{99}\text{Rh}$ ,  $^{103}\text{Ru}$ ,  $^{105}\text{Ru}$ ,  $^{105}\text{Rh}$ ,  $^{105}\text{Ag}$ ,  $^{111}\text{Ag}$ ,  $^{111}\text{In}$ ,  $^{112}\text{Ag}$ ,  $^{115}\text{Cd}$ ,  $^{117}\text{Cd}$ ,  $^{121}\text{Te}$ ,  $^{129}\text{Sb}$ ,  $^{60}\text{Ni}$ ; Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2010TA02 NUCLEAR REACTIONS  $\text{Ag}(\alpha, \text{xn})^{108}\text{In} / ^{109}\text{In} / ^{110}\text{In} / ^{111}\text{In}$ ,  $\text{Ag}(\alpha, \text{xn}2\text{p})^{105}\text{Ag} / ^{106}\text{Ag} / ^{110}\text{Ag} / ^{111}\text{Ag}$ ,  $\text{Ag}(\alpha, \text{xn})^{111}\text{Cd}$ ,  $E<40$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR NIMBE 268 2
- $^{106}\text{Cd}$  2008DE30 NUCLEAR REACTIONS  $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ ,  $E=66$  MeV / nucleon;  $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ ,  $E=69$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  $^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ , B(E2).  $^{102,104,106,108,112,116}\text{Pd}$ ,  $^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2008RUZZ RADIOACTIVITY  $^{106}\text{Cd}(2\text{EC})$ ; measured  $2\nu$  two-ec-decay  $T_{1/2}$  lower limit. The Telescope Germanium Vertical (TGV-2) spectrometer. CONF Moscow,P193,Rukhadze
- 2009BR09 ATOMIC MASSES  $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
- 2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ , ( $2\beta^+$ );  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009RU07 RADIOACTIVITY  $^{106}\text{Cd}(2\text{EC})$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced 2EC-decay  $T_{1/2}$  limits. TGV-2 spectrometer. JOUR BRSPE 73 741
- 2009RUZZ RADIOACTIVITY  $^{106}\text{Cd}(2\beta^+)$ , ( $\beta^+\text{EC}$ ), (2EC); measured  $T_{1/2}$ ,  $E\gamma$ ,  $I\gamma$ . TGV-2 spectrometer. CONF Cheboksary,P83,Rukhadze
- $^{106}\text{In}$  2009DE20 NUCLEAR REACTIONS  $^{78}\text{Se}(^{32}\text{S}, 3\text{np})$ ,  $E=125$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ ,  $\gamma(\text{linear polarization})$ .  $^{106}\text{In}$ ; deduced levels, J,  $\pi$ , bands, and configurations. Comparisons with projected deformed Hartree-Fock calculations. JOUR PRVCA 79 067304
- 2009EL08 NUCLEAR REACTIONS  $^{92}\text{Mo}(p, X)^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}$ ,  $E=62$  MeV;  $^{106}\text{Cd}(p, X)^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}$ ,  $E=62$  MeV; measured yields; deduced production  $\sigma$ . Enriched target. JOUR ZAANE 40 1
- $^{106}\text{Sn}$  2009EL07 ATOMIC MASSES  $^{104,105,106,107,108}\text{Sn}$ ,  $^{106,107,108,109,110}\text{Sb}$ ,  $^{108,109}\text{Te}$ ,  $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501
- $^{106}\text{Sb}$  2009EL07 ATOMIC MASSES  $^{104,105,106,107,108}\text{Sn}$ ,  $^{106,107,108,109,110}\text{Sb}$ ,  $^{108,109}\text{Te}$ ,  $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501



## A=107

$^{107}\text{Zr}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{107}\text{Nb}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{107}\text{Mo}$	2008XU08	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{108}\text{Tc}$ ; deduced levels, J, $\pi$ , bands, $B(E1) / B(E2)$ ratios. $^{106,107}\text{Mo}$ , $^{107}\text{Tc}$ ; deduced bands. Comparison with particle-rotor model calculations. JOUR PRVCA 78 064301
	2009G018	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\gamma\gamma(\theta)$ . $^{101}\text{Zr}$ , $^{103,105,107}\text{Mo}$ , $^{109,111}\text{Ru}$ ; deduced levels, J, $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{107}\text{Tc}$	2008XU08	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{108}\text{Tc}$ ; deduced levels, J, $\pi$ , bands, $B(E1) / B(E2)$ ratios. $^{106,107}\text{Mo}$ , $^{107}\text{Tc}$ ; deduced bands. Comparison with particle-rotor model calculations. JOUR PRVCA 78 064301
	2009GU11	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{106,107}\text{Tc}$ ; deduced levels, J, $\pi$ , bands, configurations, moments of inertia. $^{104,105}\text{Mo}$ , $^{105,106}\text{Tc}$ ; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317
	2009GU20	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; $^{107}\text{Tc}$ ; deduced levels, J, $\pi$ , high-spin states, bands. Comparison with g-factor calculations. JOUR CPLEE 26 092502
	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806

KEYNUMBERS AND KEYWORDS

A=107 (*continued*)

- <sup>107</sup>Cd    2007IDZY    NUCLEAR REACTIONS <sup>96</sup>Zr(<sup>20</sup>Ne, p6n), <sup>96</sup>Zr(<sup>20</sup>Ne, α5n), E=130 MeV; measured Eγ, Iγ, γα-coin, γp-coin. REPT  
CNS-REP-76,P13,Ideguchi
- 2009BR09    ATOMIC MASSES <sup>99,100,101,102,103,104,105,106,107,108,109</sup>Cd; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
- <sup>107</sup>In    2009EL08    NUCLEAR REACTIONS <sup>92</sup>Mo(p, X)<sup>85</sup>Nb / <sup>86</sup>Nb / <sup>87</sup>Nb / <sup>88</sup>Nb / <sup>89</sup>Nb / <sup>90</sup>Nb / <sup>91</sup>Nb, E=62 MeV; <sup>106</sup>Cd(p, X)<sup>101</sup>In / <sup>102</sup>In / <sup>103</sup>In / <sup>104</sup>In / <sup>105</sup>In / <sup>106</sup>In / <sup>107</sup>In / <sup>108</sup>In / <sup>109</sup>In, E=62 MeV; measured yields; deduced production σ. Enriched target. JOUR ZAANE 40 1
- <sup>107</sup>Sn    2009EL07    ATOMIC MASSES <sup>104,105,106,107,108</sup>Sn, <sup>106,107,108,109,110</sup>Sb, <sup>108,109</sup>Te, <sup>111</sup>I; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501
- <sup>107</sup>Sb    2009EL07    ATOMIC MASSES <sup>104,105,106,107,108</sup>Sn, <sup>106,107,108,109,110</sup>Sb, <sup>108,109</sup>Te, <sup>111</sup>I; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501

A=108

- <sup>108</sup>Zr    2008BE33    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured σ. JOUR PRVCA 78 054605
- <sup>108</sup>Nb    2009PE06    RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc(β<sup>-</sup>), (β<sup>-</sup>n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons, β, (fragment)β-coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>108</sup>Mo    2009CH09    NUCLEAR MOMENTS <sup>90,91,92,94,95,96,97,98,100,102,103,104,105,106,108</sup>Mo; measured hfs; deduced hyperfine structure coefficients, charge radius, magnetic moment. Collinear laser spectroscopy. JOUR PYLBB 674 23

A=108 (*continued*)

- 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>108</sup>Tc 2008XU08 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>108</sup>Tc; deduced levels, J,  $\pi$ , bands, B(E1) / B(E2) ratios. <sup>106,107</sup>Mo, <sup>107</sup>Tc; deduced bands. Comparison with particle-rotor model calculations. JOUR PRVCA 78 064301
- 2009LI42 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>137</sup>I, <sup>139</sup>Cs; deduced levels, J,  $\pi$ , bands, multipolarities and mixing ratios. <sup>108,109,110</sup>Tc, <sup>111,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314
- 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>108</sup>Ru 2008DE30 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2009LU01 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>108,110,112</sup>Ru; deduced levels, J,  $\pi$ , rotational bands, B(E2) / B(M1). Tilted axis cranking and RPA calculations. JOUR PYLBB 670 307
- 2009LU18 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, B(E1) / B(E2), chiral doubling. Comparison with other chiral doubling candidates. JOUR IMPEE 18 1697
- 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806

KEYNUMBERS AND KEYWORDS

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A=108 (*continued*)

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|                   | 2009ZH24 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; $^{108,110,112}\text{Ru}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced high-spin, even-parity bands, branching ratios, odd-even spin energy band staggering, doubling of levels in $^{110}\text{Ru}$ , deformation parameters, triaxiality. Comparison with TRS calculations. JOUR IMPEE 18 1717  |
| $^{108}\text{Pd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, $J, \pi$ , $B(E2)$ . $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of $B(E2)$ values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302  |
|                   | 2009VA01 | NUCLEAR REACTIONS $^{120}\text{Sn}(^{74}\text{Zn}, ^{74}\text{Zn}')$ , $E=2.87$ MeV / nucleon; $^{120}\text{Sn}(^{76}\text{Zn}, ^{76}\text{Zn}')$ , $E=2.83$ MeV / nucleon; $^{108}\text{Pd}(^{78}\text{Zn}, ^{78}\text{Zn}')$ , $E=2.87$ MeV / nucleon; $^{108}\text{Pd}(^{80}\text{Zn}, ^{80}\text{Zn}')$ , $E=2.79$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , charged particle spectra, (particle)- $\gamma$ coin, measured half-lives of first $2^+$ state, $B(E2)$ . $^{74,76,78,80}\text{Zn}$ , $^{80}\text{Ga}$ , $^{80}\text{Rb}$ , $^{108}\text{Pd}$ , $^{120}\text{Sn}$ ; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of $B(E2)$ values. Comparison with shell-model calculations. JOUR PRVCA 79 014309 |
| $^{108}\text{Cd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, $J, \pi$ , $B(E2)$ . $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of $B(E2)$ values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302  |
|                   | 2009BR09 | ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805  |
| $^{108}\text{In}$ | 2009EL08 | NUCLEAR REACTIONS $^{92}\text{Mo}(p, X)^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}$ , $E=62$ MeV; $^{106}\text{Cd}(p, X)^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}$ , $E=62$ MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1   |
|                   | 2010TA02 | NUCLEAR REACTIONS $\text{Ag}(\alpha, xn)^{108}\text{In} / ^{109}\text{In} / ^{110}\text{In} / ^{111}\text{In}$ , $\text{Ag}(\alpha, xn2p)^{105}\text{Ag} / ^{106}\text{Ag} / ^{110}\text{Ag} / ^{111}\text{Ag}$ , $\text{Ag}(\alpha, xnp)^{111}\text{Cd}$ , $E<40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2  |
| $^{108}\text{Sn}$ | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501  |
| $^{108}\text{Sb}$ | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501  |
| $^{108}\text{Te}$ | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501  |

## A=109

$^{109}\text{Nb}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{109}\text{Mo}$	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{109}\text{Tc}$	2009LI42	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, and $\gamma\gamma(\theta)$ using Gammasphere array. $^{137}\text{I}$ , $^{139}\text{Cs}$ ; deduced levels, $J$ , $\pi$ , bands, multipolarities and mixing ratios. $^{108,109,110}\text{Tc}$ , $^{111,113}\text{Rh}$ ; measured $E\gamma$ , $\gamma\gamma$ -coin. Comparison with shell-model calculations. $A=133-141$ (odd), $Z=55$ ; $N=84$ , $\text{Sb}$ , $\text{I}$ , $\text{Cs}$ , $\text{La}$ ; $A=132-140$ (even), $Z=52$ , $54$ , $56$ ; systematics of low-lying states. JOUR PRVCA 80 044314
	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{109}\text{Ru}$	2009G018	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\gamma\gamma(\theta)$ . $^{101}\text{Zr}$ , $^{103,105,107}\text{Mo}$ , $^{109,111}\text{Ru}$ ; deduced levels, $J$ , $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
	2009PE06	RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^- \text{ n})$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , $E=120$ MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
$^{109}\text{Pd}$	2008ZH29	NUCLEAR REACTIONS $^{110}\text{Pd}$ , $^{112}\text{Cd}$ , $^{113}\text{In}(\gamma, \text{n})$ , $E=9-18$ MeV; measured $E\gamma$ , $I\gamma$ , cross sections for isomeric state population. JOUR BRSPE 72 1548
	2009PAZZ	NUCLEAR REACTIONS $^{110}\text{Pd}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, \text{n})$ , $E=27, 28, 29, 30$ MeV; measured $E\gamma$ , $I\gamma$ . $^{109}\text{Pd}$ ; deduced isomeric yield ratios depending on $E\gamma$ . Activation technique. CONF Cheboksary,P146,Palvanov
$^{109}\text{Ag}$	2007TIZZ	NUCLEAR REACTIONS $^{96}\text{Zr}(^{18}\text{C}, \text{P4N})$ , $E$ not given; $^{109}\text{Ag}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced level scheme. REPT ATOMKI 2007 Annual,P27,Timar

KEYNUMBERS AND KEYWORDS

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A=109 (*continued*)

	2008VI09	RADIOACTIVITY $^{109}\text{Ag}$ , $^{123}\text{Te}$ , $^{147}\text{Pm(IT)}$ ; measured $E\gamma$ , $I\gamma$ , X-ray spectra, $e\gamma$ -, $e\text{X-ray-coin}$ . Deduced hypersatellite energy shift. JOUR BRSPE 72 1559
	2009ZI01	NUCLEAR REACTIONS $^{109}\text{Ag}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , $E=2.68$ MeV / nucleon; $^{208}\text{Pb}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , $E=3.68$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin, $\gamma$ yields. $^{44}\text{Ar}$ ; deduced levels, $B(E2)$ matrix elements, spectroscopic quadrupole moments. Comparisons with experimental data for neighboring $A=42-46$ Ar, S and Si nuclides and GCM(GOA), AMPGCM, and Shell model calculations. JOUR PRVCA 80 014317
$^{109}\text{Cd}$	2009BR09	ATOMIC MASSES $^{99,100,101,102,103,104,105,106,107,108,109}\text{Cd}$ ; measured and evaluated masses using ISOLTRAP penning-trap spectrometer. Comparisons with other measurements and AME-2003 evaluation. JOUR PRVCA 80 035805
	2009RA17	RADIOACTIVITY $^{109}\text{In}$ , $^{110}\text{Sn(EC)}$ [from $\text{Nb}(^{20}\text{Ne}, \text{X})$ , $E=150$ MeV]; measured $E\gamma$ , $I\gamma$ , $T_{1/2}$ in different media and observed media-dependent change in $T_{1/2}$ . Discussed observed effect in terms of electron-density calculations. JOUR PYLBB 679 106
$^{109}\text{In}$	2007IDZY	NUCLEAR REACTIONS $^{96}\text{Zr}(^{20}\text{Ne}, \text{p6n})$ , $^{96}\text{Zr}(^{20}\text{Ne}, \alpha 5\text{n})$ , $E=130$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\alpha$ -coin, $\gamma\text{p}$ -coin. REPT CNS-REP-76,P13,Ideguchi
	2007ZHZX	NUCLEAR REACTIONS $^{96}\text{Zr}(^{20}\text{Ne}, \text{p6n})$ , $E\approx 6.5$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\pi\gamma$ -coin., $\alpha\gamma$ -coin; deduced $\sigma$ , high-spin states of $^{109}\text{In}$ ; calculated $\sigma$ using statistical CASCADE code. REPT CNS-REP-76,P19,Zheng
	2009EL08	NUCLEAR REACTIONS $^{92}\text{Mo}(\text{p}, \text{X})^{85}\text{Nb} / ^{86}\text{Nb} / ^{87}\text{Nb} / ^{88}\text{Nb} / ^{89}\text{Nb} / ^{90}\text{Nb} / ^{91}\text{Nb}$ , $E=62$ MeV; $^{106}\text{Cd}(\text{p}, \text{X})^{101}\text{In} / ^{102}\text{In} / ^{103}\text{In} / ^{104}\text{In} / ^{105}\text{In} / ^{106}\text{In} / ^{107}\text{In} / ^{108}\text{In} / ^{109}\text{In}$ , $E=62$ MeV; measured yields; deduced production $\sigma$ . Enriched target. JOUR ZAANE 40 1
	2009RA17	RADIOACTIVITY $^{109}\text{In}$ , $^{110}\text{Sn(EC)}$ [from $\text{Nb}(^{20}\text{Ne}, \text{X})$ , $E=150$ MeV]; measured $E\gamma$ , $I\gamma$ , $T_{1/2}$ in different media and observed media-dependent change in $T_{1/2}$ . Discussed observed effect in terms of electron-density calculations. JOUR PYLBB 679 106
	2010TA02	NUCLEAR REACTIONS $\text{Ag}(\alpha, \text{xn})^{108}\text{In} / ^{109}\text{In} / ^{110}\text{In} / ^{111}\text{In}$ , $\text{Ag}(\alpha, \text{xn2p})^{105}\text{Ag} / ^{106}\text{Ag} / ^{110}\text{Ag} / ^{111}\text{Ag}$ , $\text{Ag}(\alpha, \text{xnp})^{111}\text{Cd}$ , $E<40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2
$^{109}\text{Sn}$	2009BA31	NUCLEAR REACTIONS $^{109}\text{Sn}(\gamma, \gamma)$ , $E=23.87$ keV; measured Mossbauer absorption spectrum in resonant environment; deduced no effect on $T_{1/2}$ value. JOUR BRSPE 73 731
$^{109}\text{Sb}$	2009EL07	ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501
$^{109}\text{Te}$	2009EL07	ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501

## A=110

- <sup>110</sup>Nb      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>110</sup>Mo      2009PE06      RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>110</sup>Tc      2009LI42      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>137</sup>I, <sup>139</sup>Cs; deduced levels, J,  $\pi$ , bands, multipolarities and mixing ratios. <sup>108,109,110</sup>Tc, <sup>111,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314
- 2009PE06      RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>110</sup>Ru      2008DE30      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2009LU01      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>108,110,112</sup>Ru; deduced levels, J,  $\pi$ , rotational bands, B(E2) / B(M1). Tilted axis cranking and RPA calculations. JOUR PYLBB 670 307

A=110 (*continued*)

- 2009LU18 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,  $B(E1)$  /  $B(E2)$ , chiral doubling. Comparison with other chiral doubling candidates. JOUR IMPEE 18 1697
- 2009PE06 RADIOACTIVITY  $^{100,101,102,103,104,105}\text{Y}$ ,  $^{103,104,105,106,107}\text{Zr}$ ,  $^{106,107,108,109}\text{Nb}$ ,  $^{108,109,110,111}\text{Mo}$ ,  $^{109,110,111,112,113}\text{Tc}(\beta^-)$ ,  $(\beta^-n)$ [from  $^9\text{Be}(^{136}\text{Xe}, X)$ ,  $E=120$  MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- 2009ZH24 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ;  $^{108,110,112}\text{Ru}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.; deduced high-spin, even-parity bands, branching ratios, odd-even spin energy band staggering, doubling of levels in  $^{110}\text{Ru}$ , deformation parameters, triaxiality. Comparison with TRS calculations. JOUR IMPEE 18 1717
- $^{110}\text{Pd}$  2008DE30 NUCLEAR REACTIONS  $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ ,  $E=66$  MeV / nucleon;  $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ ,  $E=69$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  $^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ ,  $B(E2)$ .  $^{102,104,106,108,112,116}\text{Pd}$ ,  $^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of  $B(E2)$  values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2009HU03 NUCLEAR REACTIONS  $^{110}\text{Pd}(^{29}\text{Na}, ^{29}\text{Na}')$ ,  $E=70$  MeV; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin, charged-particle spectra following Coulomb excitation; deduced  $\sigma$ .  $^{29}\text{Na}$ ; deduced  $B(E2)$ . Comparison with shell model. JOUR PYLBB 674 168
- 20090LZX NUCLEAR REACTIONS  $^{110}\text{Pd}(^{18}\text{O}, ^{18}\text{O}')$ ,  $E=57$  MeV; measured  $E(\text{particle})$ ,  $I(\text{particle})$ ,  $\theta(\text{particle})$ ,  $E\gamma$ ,  $I\gamma$ , particle- $\gamma$ -coin.; deduced  $d\sigma$ ; calculated  $d\sigma$  with Sao Paulo potential in DIC. CONF Brazil (Nuclear Physics 2008) Proc. P172,Oliveira
- $^{110}\text{Ag}$  2010TA02 NUCLEAR REACTIONS  $\text{Ag}(\alpha, xn)^{108}\text{In}$  /  $^{109}\text{In}$  /  $^{110}\text{In}$  /  $^{111}\text{In}$ ,  $\text{Ag}(\alpha, xn2p)^{105}\text{Ag}$  /  $^{106}\text{Ag}$  /  $^{110}\text{Ag}$  /  $^{111}\text{Ag}$ ,  $\text{Ag}(\alpha, xnp)^{111}\text{Cd}$ ,  $E<40$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR NIMBE 268 2
- $^{110}\text{Cd}$  2008DE30 NUCLEAR REACTIONS  $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ ,  $E=66$  MeV / nucleon;  $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ ,  $E=69$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  $^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ ,  $B(E2)$ .  $^{102,104,106,108,112,116}\text{Pd}$ ,  $^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of  $B(E2)$  values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2009SU09 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{56}\text{Fe}, 2n2p)$ ,  $E=280$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ .  $^{144}\text{Dy}$ ; deduced levels, J,  $\pi$ , multipolarity,  $B(M1)$ ,  $B(E2)$ , configurations, magnetic and antimagnetic rotational bands.  $A=136-146$ , even- $A$  Ce, Nd, Sm, Gd, Tb, Dy; level systematics.  $^{110}\text{Cd}$ ,  $^{144}\text{Dy}$ ; discussed comparison of magnetic and antimagnetic rotors. JOUR PRVCA 79 064321



KEYNUMBERS AND KEYWORDS

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**A=110 (continued)**

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| $^{110}\text{In}$ | 2009KH01 | NUCLEAR REACTIONS $\text{Sn}(p, X)^{117}\text{Sb} / ^{118}\text{Sb} / ^{120}\text{Sb} / ^{122}\text{Sb} / ^{124}\text{Sb} / ^{113}\text{Sn} / ^{117}\text{Sn} / ^{110}\text{In} / ^{111}\text{In}$ ; $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23  |
|                   | 2009RA17 | RADIOACTIVITY $^{109}\text{In}$ , $^{110}\text{Sn}(\text{EC})$ [from $\text{Nb}(^{20}\text{Ne}, X)$ , $E=150$ MeV]; measured $E\gamma$ , $I\gamma$ , $T_{1/2}$ in different media and observed media-dependent change in $T_{1/2}$ . Discussed observed effect in terms of electron-density calculations. JOUR PYLBB 679 106   |
|                   | 2009TR01 | NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{138}\text{Ce}$ , $^{153}\text{Eu}(\gamma, n)$ , $E=10-25$ MeV; $^{96}\text{Mo}$ , $^{118}\text{Sn}(\gamma, p)$ , $E=10-25$ MeV; $^{89}\text{Y}(\gamma, 2n)$ , $E=10-25$ MeV; $^{106}\text{Cd}$ , $^{112}\text{Sn}(\gamma, np)$ , $E=10-25$ MeV; measured $E\gamma$ , $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126  |
|                   | 2010RA01 | NUCLEAR REACTIONS $\text{In}(\gamma, xn)^{110}\text{In}$ , $^{113}\text{In}(\gamma, 2n)$ , $^{111}\text{In}$ , $\text{In}(\gamma, xn)$ , $^{111}\text{In}$ , $^{113}\text{In}(\gamma, n)$ , $^{112}\text{In}$ , $\text{In}(\gamma, xn)$ , $^{112}\text{In}$ , $^{118}\text{Sn}(\gamma, p)$ , $^{117}\text{In}$ , $\text{Sn}(\gamma, xnp)^{117}\text{In}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced isomeric yield ratios. Comparison with other values. JOUR NIMBE 268 13 |
|                   | 2010TA02 | NUCLEAR REACTIONS $\text{Ag}(\alpha, xn)^{108}\text{In} / ^{109}\text{In} / ^{110}\text{In} / ^{111}\text{In}$ , $\text{Ag}(\alpha, xn2p)^{105}\text{Ag} / ^{106}\text{Ag} / ^{110}\text{Ag} / ^{111}\text{Ag}$ , $\text{Ag}(\alpha, xnp)^{111}\text{Cd}$ , $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2   |
| $^{110}\text{Sn}$ | 2009RA17 | RADIOACTIVITY $^{109}\text{In}$ , $^{110}\text{Sn}(\text{EC})$ [from $\text{Nb}(^{20}\text{Ne}, X)$ , $E=150$ MeV]; measured $E\gamma$ , $I\gamma$ , $T_{1/2}$ in different media and observed media-dependent change in $T_{1/2}$ . Discussed observed effect in terms of electron-density calculations. JOUR PYLBB 679 106   |
| $^{110}\text{Sb}$ | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501   |

**A=111**

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| $^{111}\text{Nb}$ | 2008BE33 | NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , $E=1$ GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
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A=111 (*continued*)

- <sup>111</sup>Mo 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>111</sup>Tc 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>111</sup>Ru 2009G018 RADIOACTIVITY <sup>252</sup>Cf(SF); measured  $\gamma\gamma(\theta)$ . <sup>101</sup>Zr, <sup>103,105,107</sup>Mo, <sup>109,111</sup>Ru; deduced levels, J,  $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
- 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>111</sup>Rh 2009LI25 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ . <sup>134</sup>I; deduced levels, J,  $\pi$ , yrast states. <sup>111,112,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Discussed systematics of yrast levels in Iodine nuclides. JOUR PRVCA 79 067303
- 2009LI42 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>137</sup>I, <sup>139</sup>Cs; deduced levels, J,  $\pi$ , bands, multipolarities and mixing ratios. <sup>108,109,110</sup>Tc, <sup>111,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314
- <sup>111</sup>Ag 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>6</sup> Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2010TA02 NUCLEAR REACTIONS Ag( $\alpha$ , xn)<sup>108</sup>In / <sup>109</sup>In / <sup>110</sup>In / <sup>111</sup>In, Ag( $\alpha$ , xn2p)<sup>105</sup>Ag / <sup>106</sup>Ag / <sup>110</sup>Ag / <sup>111</sup>Ag, Ag( $\alpha$ , xnp)<sup>111</sup>Cd, E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . JOUR NIMBE 268 2
- <sup>111</sup>Cd 2008ZH29 NUCLEAR REACTIONS <sup>110</sup>Pd, <sup>112</sup>Cd, <sup>113</sup>In( $\gamma$ , n), E=9-18 MeV; measured E $\gamma$ , I $\gamma$ , cross sections for isomeric state population. JOUR BRSPE 72 1548
- 2010RA01 NUCLEAR REACTIONS In( $\gamma$ , xn)<sup>110</sup>In, <sup>113</sup>In( $\gamma$ , 2n), <sup>111</sup>In, In( $\gamma$ , xn), <sup>111</sup>In, <sup>113</sup>In( $\gamma$ , n), <sup>112</sup>In, In( $\gamma$ , xn), <sup>112</sup>In, <sup>118</sup>Sn( $\gamma$ , p), <sup>117</sup>In, Sn( $\gamma$ , xnp)<sup>117</sup>In, E<70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced isomeric yield ratios. Comparison with other values. JOUR NIMBE 268 13

KEYNUMBERS AND KEYWORDS

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**A=111** (*continued*)

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| 2010TA02          |          | NUCLEAR REACTIONS Ag( $\alpha$ , xn) $^{108}\text{In}$ / $^{109}\text{In}$ / $^{110}\text{In}$ / $^{111}\text{In}$ , Ag( $\alpha$ , xn2p) $^{105}\text{Ag}$ / $^{106}\text{Ag}$ / $^{110}\text{Ag}$ / $^{111}\text{Ag}$ , Ag( $\alpha$ , xnp) $^{111}\text{Cd}$ , E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2   |
| $^{111}\text{In}$ | 2009KH01 | NUCLEAR REACTIONS Sn(p, X) $^{117}\text{Sb}$ / $^{118}\text{Sb}$ / $^{120}\text{Sb}$ / $^{122}\text{Sb}$ / $^{124}\text{Sb}$ / $^{113}\text{Sn}$ / $^{117}\text{Sn}$ / $^{110}\text{In}$ / $^{111}\text{In}$ ; E < 40 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23  |
|                   | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , E=2.5 GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Zn}$ ; Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891 |
|                   | 2009TS04 | NUCLEAR REACTIONS $^{109}\text{Ag}(\alpha, 2n)$ , E=30 MeV; Measured E $\gamma$ , I $\gamma(\theta, t)$ , $\gamma\gamma$ -coin; deduced nuclear quadrupole hyperfine interaction parameters in UGe2 and UAl2 compounds; Deduced hyperfine structure. Time dependent perturbed angular correlation method. JOUR JTPLA 89 280  |
|                   | 2010RA01 | NUCLEAR REACTIONS In( $\gamma$ , xn) $^{110}\text{In}$ , $^{113}\text{In}(\gamma, 2n)$ , $^{111}\text{In}$ , In( $\gamma$ , xn), $^{111}\text{In}$ , $^{113}\text{In}(\gamma, n)$ , $^{112}\text{In}$ , In( $\gamma$ , xn), $^{112}\text{In}$ , $^{118}\text{Sn}(\gamma, p)$ , $^{117}\text{In}$ , Sn( $\gamma$ , xnp) $^{117}\text{In}$ , E<70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced isomeric yield ratios. Comparison with other values. JOUR NIMBE 268 13   |
|                   | 2010TA02 | NUCLEAR REACTIONS Ag( $\alpha$ , xn) $^{108}\text{In}$ / $^{109}\text{In}$ / $^{110}\text{In}$ / $^{111}\text{In}$ , Ag( $\alpha$ , xn2p) $^{105}\text{Ag}$ / $^{106}\text{Ag}$ / $^{110}\text{Ag}$ / $^{111}\text{Ag}$ , Ag( $\alpha$ , xnp) $^{111}\text{Cd}$ , E<40 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ . JOUR NIMBE 268 2   |
| $^{111}\text{I}$  | 2009EL07 | ATOMIC MASSES $^{104,105,106,107,108}\text{Sn}$ , $^{106,107,108,109,110}\text{Sb}$ , $^{108,109}\text{Te}$ , $^{111}\text{I}$ ; Measured atomic masses using JYFLTRAP Penning-trap spectrometer; deduced single-proton separation energy. Comparison with AME2003 evaluation. JOUR PRLTA 102 252501   |

**A=112**

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| $^{112}\text{Tc}$ | 2009F005 | NUCLEAR REACTIONS $^9\text{Be}(^{238}\text{U}, \text{X})^{60m}\text{Mn}$ / $^{78m}\text{Ga}$ / $^{82m}\text{Ga}$ / $^{92m}\text{Br}$ / $^{95m}\text{Rb}$ / $^{98m}\text{Rb}$ / $^{92m}\text{Y}$ / $^{101m}\text{Y}$ / $^{112m}\text{Tc}$ , E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, isomer half-lives. $^{60}\text{Mn}$ , $^{78,82}\text{Ga}$ , $^{92}\text{Br}$ , $^{95,98}\text{Rb}$ , $^{92,101}\text{Y}$ , $^{112}\text{Tc}$ ; deduced levels, J, $\pi$ . $^{66m}\text{Cu}$ , $^{78m}\text{Zn}$ , $^{88m}\text{Br}$ , $^{95m}\text{Kr}$ , $^{96m}\text{Rb}$ , $^{97m,100m}\text{Sr}$ , $^{99m}\text{Mo}$ , $^{121m}\text{Pd}$ , $^{124m}\text{Sn}$ , $^{125m}\text{Xe}$ ; measured E $\gamma$ and half-lives. $^{91,92,93}\text{Y}$ ; measured E $\gamma$ . JOUR PRVCA 79 064318 |
|                   | 2009PE06 | RADIOACTIVITY $^{100,101,102,103,104,105}\text{Y}$ , $^{103,104,105,106,107}\text{Zr}$ , $^{106,107,108,109}\text{Nb}$ , $^{108,109,110,111}\text{Mo}$ , $^{109,110,111,112,113}\text{Tc}(\beta^-)$ , $(\beta^-n)$ [from $^9\text{Be}(^{136}\text{Xe}, \text{X})$ , E=120 MeV / nucleon]; measured fragments, neutrons, $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806  |

A=112 (*continued*)

- <sup>112</sup>Ru    2008DE30    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2009LU01    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>108,110,112</sup>Ru; deduced levels, J,  $\pi$ , rotational bands, B(E2) / B(M1). Tilted axis cranking and RPA calculations. JOUR PYLBB 670 307
- 2009LU18    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, B(E1) / B(E2), chiral doubling. Comparison with other chiral doubling candidates. JOUR IMPEE 18 1697
- 2009PE06    RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$ n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- 2009ZH24    RADIOACTIVITY <sup>252</sup>Cf(SF); <sup>108,110,112</sup>Ru; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced high-spin, even-parity bands, branching ratios, odd-even spin energy band staggering, doubling of levels in <sup>110</sup>Ru, deformation parameters, triaxiality. Comparison with TRS calculations. JOUR IMPEE 18 1717
- <sup>112</sup>Rh    2009LI25    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ . <sup>134</sup>I; deduced levels, J,  $\pi$ , yrast states. <sup>111,112,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Discussed systematics of yrast levels in Iodine nuclides. JOUR PRVCA 79 067303
- <sup>112</sup>Pd    2008DE30    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- <sup>112</sup>Ag    2009GR10    RADIOACTIVITY <sup>112</sup>Ag( $\beta^-$ ), <sup>112</sup>In(EC)[from Ta(p, X), E=500 MeV]; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using 8 $\pi$  array. <sup>112</sup>Cd; deduced levels, J,  $\pi$ , B(E2). Discussed implications for 0 $\nu\beta\beta$  decay of <sup>112</sup>Sn. JOUR PRVCA 80 032502
- 2009NA10    NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>6</sup>Li. Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891

KEYNUMBERS AND KEYWORDS

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**A=112 (continued)**

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| $^{112}\text{Cd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , E=66 MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , E=69 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, J, $\pi$ , B(E2). $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
|                   | 2009BA44 | RADIOACTIVITY $^{112}\text{Sn}(\beta^+\text{EC})$ , (2EC); measured $E\gamma$ , $I\gamma$ ; deduced upper half-life limits for different decay modes and to levels in $^{112}\text{Cd}$ . Comparison with previous studies. JOUR PRVCA 80 035501  |
|                   | 2009GR10 | RADIOACTIVITY $^{112}\text{Ag}(\beta^-)$ , $^{112}\text{In}(\text{EC})$ [from Ta(p, X), E=500 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using $8\pi$ array. $^{112}\text{Cd}$ ; deduced levels, J, $\pi$ , B(E2). Discussed implications for $0\nu\beta\beta$ decay of $^{112}\text{Sn}$ . JOUR PRVCA 80 032502   |
| $^{112}\text{In}$ | 2008ZH29 | NUCLEAR REACTIONS $^{110}\text{Pd}$ , $^{112}\text{Cd}$ , $^{113}\text{In}(\gamma, n)$ , E=9-18 MeV; measured $E\gamma$ , $I\gamma$ , cross sections for isomeric state population. JOUR BRSPE 72 1548  |
|                   | 2009GR10 | RADIOACTIVITY $^{112}\text{Ag}(\beta^-)$ , $^{112}\text{In}(\text{EC})$ [from Ta(p, X), E=500 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using $8\pi$ array. $^{112}\text{Cd}$ ; deduced levels, J, $\pi$ , B(E2). Discussed implications for $0\nu\beta\beta$ decay of $^{112}\text{Sn}$ . JOUR PRVCA 80 032502   |
|                   | 2010RA01 | NUCLEAR REACTIONS $\text{In}(\gamma, xn)^{110}\text{In}$ , $^{113}\text{In}(\gamma, 2n)$ , $^{111}\text{In}$ , $\text{In}(\gamma, xn)$ , $^{111}\text{In}$ , $^{113}\text{In}(\gamma, n)$ , $^{112}\text{In}$ , $\text{In}(\gamma, xn)$ , $^{112}\text{In}$ , $^{118}\text{Sn}(\gamma, p)$ , $^{117}\text{In}$ , $\text{Sn}(\gamma, xnp)^{117}\text{In}$ , E<70 MeV; measured $E\gamma$ , $I\gamma$ ; deduced isomeric yield ratios. Comparison with other values. JOUR NIMBE 268 13  |
| $^{112}\text{Sn}$ | 2008VOZX | NUCLEAR REACTIONS $^{112,120}\text{Sn}(\gamma, \gamma')$ , E < 9.5 MeV; measured $E\gamma$ , $I\gamma$ ; deduced B(E1) distribution. $^{208}\text{Pb}(p, p')$ , E=295 MeV; measured $E_p$ , $I_p$ ; deduced B(E1) distribution. CONF Cappadocia (Nuclear Physics and Astrophysics), P124, von Neumann-Co  |
|                   | 2009BA44 | RADIOACTIVITY $^{112}\text{Sn}(\beta^+\text{EC})$ , (2EC); measured $E\gamma$ , $I\gamma$ ; deduced upper half-life limits for different decay modes and to levels in $^{112}\text{Cd}$ . Comparison with previous studies. JOUR PRVCA 80 035501  |
|                   | 2009RA11 | ATOMIC MASSES $^{112}\text{Sn}$ ; Measured atomic masses using precision cryogenic Penning-trap spectrometer; Deduced Q-value for $2\beta$ -decay. JOUR PRLTA 103 042501  |

## A=113

- <sup>113</sup>Mo 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>113</sup>Tc 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>113</sup>Ru 2009PE06 RADIOACTIVITY <sup>100,101,102,103,104,105</sup>Y, <sup>103,104,105,106,107</sup>Zr, <sup>106,107,108,109</sup>Nb, <sup>108,109,110,111</sup>Mo, <sup>109,110,111,112,113</sup>Tc( $\beta^-$ ), ( $\beta^-$  n)[from <sup>9</sup>Be(<sup>136</sup>Xe, X), E=120 MeV / nucleon]; measured fragments, neutrons,  $\beta$ , (fragment) $\beta$ -coin, half-lives; deduced delayed neutron-emission probabilities. Comparisons with quasiparticle random phase approximation (QRPA03 and QRPA06) calculations. Discussed relevance to r-process nuclei. JOUR PRVCA 79 035806
- <sup>113</sup>Rh 2009LI25 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ . <sup>134</sup>I; deduced levels, J,  $\pi$ , yrast states. <sup>111,112,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Discussed systematics of yrast levels in Iodine nuclides. JOUR PRVCA 79 067303
- 2009LI42 RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array. <sup>137</sup>I, <sup>139</sup>Cs; deduced levels, J,  $\pi$ , bands, multipolarities and mixing ratios. <sup>108,109,110</sup>Tc, <sup>111,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314
- <sup>113</sup>Cd 2009DA03 RADIOACTIVITY <sup>113</sup>Cd( $\beta^-$ ); measured E $\beta$ , T<sub>1/2</sub>, Q-value using CdZnTe detectors in underground laboratory. JOUR NUPAB 818 264
- <sup>113</sup>In 2009DA03 RADIOACTIVITY <sup>113</sup>Cd( $\beta^-$ ); measured E $\beta$ , T<sub>1/2</sub>, Q-value using CdZnTe detectors in underground laboratory. JOUR NUPAB 818 264
- 2010HE01 NUCLEAR REACTIONS <sup>116</sup>Cd(p, 4n), (p, 3n), (p, 2n), (p, n), (p, pn), E<36 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE and EMPIRE codes. JOUR ARISE 68 14

KEYNUMBERS AND KEYWORDS

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**A=113 (continued)**

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| $^{113}\text{Sn}$ | 2009KH01 | NUCLEAR REACTIONS $\text{Sn}(p, X)^{117}\text{Sb} / ^{118}\text{Sb} / ^{120}\text{Sb} / ^{122}\text{Sb} / ^{124}\text{Sb} / ^{113}\text{Sn} / ^{117}\text{Sn} / ^{110}\text{In} / ^{111}\text{In}$ ; $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23   |
|                   | 2009TI09 | NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(n, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(n, n')$ , $\text{Pb}(p, xn)^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ , $\text{In}(p, xn)^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(p, 3n)$ , $^{63}\text{Cu}(p, 2n)$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(p, 4n)$ , $E=0.8$ GeV; measured $E\gamma$ , $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48   |
| $^{113}\text{Sb}$ | 2009WA02 | NUCLEAR REACTIONS $\text{Yb}$ , $\text{Lu}$ , $\text{W}$ , $\text{Os}(^{136}\text{Xe}, X)^{121}\text{Sb} / ^{123}\text{Sb}$ , $E=6.0-6.2$ MeV / nucleon; measured $E\gamma$ , $\gamma\gamma$ -coin, $\gamma(t)$ , half-lives; deduced isomers. $^{120}\text{Sn}(^7\text{Li}, 2n\alpha)$ , $E=58$ MeV; $^{122}\text{Sn}(^7\text{Li}, 2n\alpha)$ , $E=54$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. $^{121,123}\text{Sb}$ ; deduced levels, $J$ , $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with $^{120}\text{Sn}$ and $^{122}\text{Sn}$ and with multistate mixing calculations. $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79 024306 |

**A=114**

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|-------------------|----------|---|
| $^{114}\text{Ru}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, $J$ , $\pi$ , $B(E2)$ . $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of $B(E2)$ values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
| $^{114}\text{Pd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, $J$ , $\pi$ , $B(E2)$ . $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of $B(E2)$ values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
| $^{114}\text{Cd}$ | 2008DE30 | NUCLEAR REACTIONS $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ , $E=66$ MeV / nucleon; $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ , $E=69$ MeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives using recoil distance doppler shift method. $^{110,114}\text{Pd}$ ; deduced levels, $J$ , $\pi$ , $B(E2)$ . $^{102,104,106,108,112,116}\text{Pd}$ , $^{104,106,108,110,112,114,116,118}\text{Cd}$ , $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of $B(E2)$ values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302 |
|                   | 2009DA16 | RADIOACTIVITY $^{64}\text{Zn}$ , $^{106}\text{Cd}$ , $^{120}\text{Te}(2\text{EC})$ , $(2\beta^+)$ ; $^{114,116}\text{Cd}$ , $^{128}\text{Te}$ , $^{130}\text{Te}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502  |

**A=114 (continued)**

- 2009K014 NUCLEAR REACTIONS  $^{113}\text{Cd}(n, \gamma)$ , E not given; measured neutron transmission; deduced resonance parameters. JOUR NIMBE 267 2345
- $^{114}\text{In}$  2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, F)$ , E=2.5 GeV;  $^{47}\text{Sc}$ ;  $^{48}\text{V}$ ;  $^{59}\text{Fe}$ ;  $^{72}\text{Zn}$ ;  $^{75}\text{Se}$ ;  $^{77}\text{Br}$ ;  $^{83}\text{Rb}$ ;  $^{85}\text{Kr}$ ;  $^{87}\text{Y}$ ;  $^{88}\text{Kr}$ ;  $^{88}\text{Zr}$ ;  $^{89}\text{Zr}$ ;  $^{91}\text{Sr}$ ;  $^{92}\text{Sr}$ ;  $^{95}\text{Zr}$ ;  $^{97}\text{Zr}$ ;  $^{99}\text{Mo}$ ;  $^{99}\text{Rh}$ ;  $^{103}\text{Ru}$ ;  $^{105}\text{Ru}$ ;  $^{105}\text{Rh}$ ;  $^{105}\text{Ag}$ ;  $^{111}\text{Ag}$ ;  $^{111}\text{In}$ ;  $^{112}\text{Ag}$ ;  $^{115}\text{Cd}$ ;  $^{117}\text{Cd}$ ;  $^{121}\text{Te}$ ;  $^{129}\text{Sb}$ ;  $^{60}\text{Ni}$ ; Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009SA06 NUCLEAR REACTIONS  $^7\text{Li}$ , C(p, n), E=297 MeV;  $^{58}\text{Ni}$ ,  $^{70}\text{Zn}$ ,  $^{114}\text{Cd}$ ,  $^{118}\text{Sn}$ ,  $^{120}\text{Sn}(p, n)$ , E=198, 297 MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  $^7\text{Be}$ ,  $^{12}\text{N}$ ,  $^{13}\text{N}$ ,  $^{58}\text{Cu}$ ,  $^{70}\text{Ga}$ ,  $^{114}\text{In}$ ,  $^{118}\text{Sb}$ ,  $^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602
- 2010HE01 NUCLEAR REACTIONS  $^{116}\text{Cd}(p, 4n)$ , (p, 3n), (p, 2n), (p, n), (p, pn), E<36 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE and EMPIRE codes. JOUR ARISE 68 14
- $^{114}\text{Sn}$  2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502

**A=115**

- $^{115}\text{Tc}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605



## A=115 (continued)

- <sup>115</sup>Cd 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>6</sup> Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009TR01 NUCLEAR REACTIONS <sup>116</sup>Cd, <sup>138</sup>Ce, <sup>153</sup>Eu( $\gamma$ , n), E=10-25 MeV; <sup>96</sup>Mo, <sup>118</sup>Sn( $\gamma$ , p), E=10-25 MeV; <sup>89</sup>Y( $\gamma$ , 2n), E=10-25 MeV; <sup>106</sup>Cd, <sup>112</sup>Sn( $\gamma$ , np), E=10-25 MeV; measured E $\gamma$ , I $\gamma$ , isomeric ratios. JOUR PPNLA 6 126
- 2009VIZZ NUCLEAR REACTIONS <sup>116</sup>Cd, <sup>121</sup>Sb( $\gamma$ , n), E(end point)=9.6-10.5 MeV; measured E $\gamma$ , I $\gamma$ . <sup>115</sup>Cd, <sup>120</sup>Sb; deduced isomeric yield ratios depending on E $\gamma$ . CONF Cheboksary,P137,Vishnevsky
- 2010HE01 NUCLEAR REACTIONS <sup>116</sup>Cd(p, 4n), (p, 3n), (p, 2n), (p, n), (p, pn), E<36 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE and EMPIRE codes. JOUR ARISE 68 14
- <sup>115</sup>In 2009M023 ATOMIC MASSES <sup>115</sup>In, <sup>115</sup>Sn; measured cyclotron frequency ratios with Penning Trap mass spectrometer; deduced atomic masses, <sup>115</sup>In-<sup>115</sup>Sn Q-value. JOUR PRLTA 103 122502
- 2009TI09 NUCLEAR REACTIONS <sup>59</sup>Co, <sup>197</sup>Au, <sup>181</sup>Ta, <sup>64</sup>Zn(n,  $\gamma$ ), <sup>59</sup>Co, <sup>27</sup>Al, <sup>181</sup>Ta, <sup>115</sup>In, <sup>64</sup>Zn, <sup>65</sup>Cu, <sup>115</sup>In(n, n'), Pb(p, xn)<sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi, In(p, xn)<sup>113</sup>Sn, <sup>59</sup>Co, <sup>209</sup>Bi(p, 3n), <sup>63</sup>Cu(p, 2n), <sup>209</sup>Bi, <sup>169</sup>Tm, <sup>93</sup>Nb, <sup>65</sup>Cu(p, 4n), E=0.8 GeV; measured E $\gamma$ , I $\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- 2009WI10 ATOMIC MASSES <sup>115</sup>In, <sup>115</sup>Sn; measured TOF ion-cyclotron resonance using Penning Trap mass spectrometer, E $\gamma$ , I $\gamma$ ; deduced <sup>115</sup>In-<sup>115</sup>Sn Q-value, T<sub>1/2</sub>. JOUR PRLTA 103 122501
- 2010HE01 NUCLEAR REACTIONS <sup>116</sup>Cd(p, 4n), (p, 3n), (p, 2n), (p, n), (p, pn), E<36 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE and EMPIRE codes. JOUR ARISE 68 14
- <sup>115</sup>Sn 2009M023 ATOMIC MASSES <sup>115</sup>In, <sup>115</sup>Sn; measured cyclotron frequency ratios with Penning Trap mass spectrometer; deduced atomic masses, <sup>115</sup>In-<sup>115</sup>Sn Q-value. JOUR PRLTA 103 122502

A=115 (*continued*)

- 2009WI10 ATOMIC MASSES  $^{115}\text{In}$ ,  $^{115}\text{Sn}$ ; measured TOF ion-cyclotron resonance using Penning Trap mass spectrometer,  $E\gamma$ ,  $I\gamma$ ; deduced  $^{115}\text{In}$ - $^{115}\text{Sn}$  Q-value,  $T_{1/2}$ . JOUR PRLTA 103 122501
- $^{115}\text{Sb}$  2009WA02 NUCLEAR REACTIONS Yb, Lu, W, Os( $^{136}\text{Xe}$ , X) $^{121}\text{Sb}$  /  $^{123}\text{Sb}$ ,  $E=6.0\text{-}6.2$  MeV / nucleon; measured  $E\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives; deduced isomers.  $^{120}\text{Sn}(^7\text{Li}, 2n\alpha)$ ,  $E=58$  MeV;  $^{122}\text{Sn}(^7\text{Li}, 2n\alpha)$ ,  $E=54$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients.  $^{121,123}\text{Sb}$ ; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with  $^{120}\text{Sn}$  and  $^{122}\text{Sn}$  and with multistate mixing calculations.  $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79 024306

## A=116

- $^{116}\text{Tc}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$  /  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$  /  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$  /  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$  /  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$  /  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$  /  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$  /  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- $^{116}\text{Pd}$  2008DE30 NUCLEAR REACTIONS  $^9\text{Be}(^{110}\text{Pd}, ^{110}\text{Pd}')$ ,  $E=66$  MeV / nucleon;  $^9\text{Be}(^{114}\text{Pd}, ^{114}\text{Pd}')$ ,  $E=69$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  $^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ , B(E2).  $^{102,104,106,108,112,116}\text{Pd}$ ,  $^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  $^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302

A=116 (*continued*)

- <sup>116</sup>Cd    2008BE33    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008DE30    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>110</sup>Pd, <sup>110</sup>Pd'), E=66 MeV / nucleon; <sup>9</sup>Be(<sup>114</sup>Pd, <sup>114</sup>Pd'), E=69 MeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives using recoil distance doppler shift method. <sup>110,114</sup>Pd; deduced levels, J,  $\pi$ , B(E2). <sup>102,104,106,108,112,116</sup>Pd, <sup>104,106,108,110,112,114,116,118</sup>Cd, <sup>96,98,100,102,104,106,108,110,112,114</sup>Ru; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- 2008KOZV    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  $0\nu 2\beta^-$ -decay T<sub>1/2</sub> lower limits,  $2\nu 2\beta^-$ -decay T<sub>1/2</sub>. CONF Moscow,P203,Kochetov
- 2009DA16    RADIOACTIVITY <sup>64</sup>Zn, <sup>106</sup>Cd, <sup>120</sup>Te(2EC), ( $2\beta^+$ ); <sup>114,116</sup>Cd, <sup>128</sup>Te, <sup>130</sup>Te( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009KOZY    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  $0\nu 2\beta^-$ -decay T<sub>1/2</sub> lower limit,  $2\nu 2\beta^-$ -decay T<sub>1/2</sub>. CONF Cheboksary,P84,Kochetov
- <sup>116</sup>In    2009SA48    NUCLEAR REACTIONS <sup>48</sup>Ca, <sup>116</sup>Cd(p, n), <sup>48</sup>Ti, <sup>116</sup>Sn(n, p), E=300 MeV; measured  $\sigma(\theta, E)$ ; deduced GT plus IVSM strength distributions. Comparison with fp-shell model space and GXPF1A interaction. JOUR IMPEE 18 2119
- 2009TA11    NUCLEAR REACTIONS <sup>115</sup>In(n,  $\gamma$ ), E=1.45 eV; measured E $\gamma$ , I $\gamma$ , yields for prompt emissions. JOUR ARISE 67 1711
- 2010HE01    NUCLEAR REACTIONS <sup>116</sup>Cd(p, 4n), (p, 3n), (p, 2n), (p, n), (p, pn), E<36 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE and EMPIRE codes. JOUR ARISE 68 14
- <sup>116</sup>Sn    2008GUZS    NUCLEAR REACTIONS <sup>118</sup>Sn(p, t), E=24.6 MeV; measured Et, It; deduced  $\sigma$  to individual states, J,  $\pi$ ; calculated using DWBA. REPT MLL 2007 Annual,P9,Guzaaoni
- 2008KOZV    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  $0\nu 2\beta^-$ -decay T<sub>1/2</sub> lower limits,  $2\nu 2\beta^-$ -decay T<sub>1/2</sub>. CONF Moscow,P203,Kochetov

A=116 (*continued*)

- 2009AG01 NUCLEAR REACTIONS  $^{117}\text{Sn}(^3\text{He}, \alpha\gamma)$ ,  $(^3\text{He}, ^3\text{He}'\gamma)$ , E=38 MeV; measured  $E\gamma$ ,  $I\gamma$ , particle spectra, (particle) $\gamma$ -coin.  $^{116,117}\text{Sn}$ ; deduced excitation energies, entropies, level densities, microcanonical temperatures. JOUR PRVCA 79 014320
- 2009CH06 NUCLEAR REACTIONS  $^{116}\text{Sn}(^6\text{Li}, ^6\text{Li}')$ , E=240 MeV; measured  $^6\text{Li}$  spectra, angular distributions, cross sections.  $^{116}\text{Sn}$ ; deduced energies, widths, energy weighted sum strength distributions for isoscalar E0, E1, E2, E3 giant resonances using double-folding model analysis. DWBA analysis of angular distributions. Comparison with corresponding data from inelastic  $\alpha$  scattering. JOUR PRVCA 79 024320
- 2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009KOZY 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limit,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
- $^{116}\text{Sb}$  2009YA08 NUCLEAR REACTIONS  $^{113}\text{In}(\alpha, \gamma)$ ,  $(\alpha, n)^{116}\text{Sb}$  /  $^{116m}\text{Sb}$  /  $^{117}\text{Sb}$ , E(cm)=8.66-13.64 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , astrophysical S factors. Comparison with statistical model calculations. JOUR PRVCA 79 065801

A=117

- $^{117}\text{Tc}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$  /  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$  /  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$  /  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$  /  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$  /  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$  /  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$  /  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=117 (continued)

- <sup>117</sup>Rh 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>117</sup>Cd 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Co
- <sup>117</sup>In 2008GUZT NUCLEAR REACTIONS <sup>120,121</sup>Sn(p,  $\alpha$ ), E=23 MeV; measured  $E\alpha$ ,  $I\alpha$  using polarized protons; deduced  $\sigma(\theta)$ ,  $Ay(\theta)$ . REPT MLL 2007 Annual,P8,Guzaaoni
- 2008VI10 NUCLEAR REACTIONS <sup>118</sup>Sn( $\gamma$ , p), Sb( $\gamma$ ,  $\alpha$ )<sup>117</sup>In, <sup>197</sup>Au( $\gamma$ , n), E=15, 22 MeV; measured  $E\gamma$ ,  $I\gamma$ , isomeric ratios. JOUR BRSP 72 1569
- 2009TR01 NUCLEAR REACTIONS <sup>116</sup>Cd, <sup>138</sup>Ce, <sup>153</sup>Eu( $\gamma$ , n), E=10-25 MeV; <sup>96</sup>Mo, <sup>118</sup>Sn( $\gamma$ , p), E=10-25 MeV; <sup>89</sup>Y( $\gamma$ , 2n), E=10-25 MeV; <sup>106</sup>Cd, <sup>112</sup>Sn( $\gamma$ , np), E=10-25 MeV; measured  $E\gamma$ ,  $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126
- 2010RA01 NUCLEAR REACTIONS In( $\gamma$ , xn)<sup>110</sup>In, <sup>113</sup>In( $\gamma$ , 2n), <sup>111</sup>In, In( $\gamma$ , xn), <sup>111</sup>In, <sup>113</sup>In( $\gamma$ , n), <sup>112</sup>In, In( $\gamma$ , xn), <sup>112</sup>In, <sup>118</sup>Sn( $\gamma$ , p), <sup>117</sup>In, Sn( $\gamma$ , xnp)<sup>117</sup>In, E<70 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced isomeric yield ratios. Comparison with other values. JOUR NIMBE 268 13

A=117 (*continued*)

- <sup>117</sup>Sn    2009AG01    NUCLEAR REACTIONS <sup>117</sup>Sn(<sup>3</sup>He, αγ), (<sup>3</sup>He, <sup>3</sup>He'γ), E=38 MeV; measured Eγ, Iγ, particle spectra, (particle)γ-coin. <sup>116,117</sup>Sn; deduced excitation energies, entropies, level densities, microcanonical temperatures. JOUR PRVCA 79 014320
- 2009AG03    NUCLEAR REACTIONS <sup>117</sup>Sn(<sup>3</sup>He, <sup>3</sup>He'), E=38 MeV; measured Eγ, Iγ, 7radiative strength function. <sup>117</sup>Sn; deduced level density. JOUR PRITA 102 162504
- 2009KH01    NUCLEAR REACTIONS Sn(p, X)<sup>117</sup>Sb / <sup>118</sup>Sb / <sup>120</sup>Sb / <sup>122</sup>Sb / <sup>124</sup>Sb / <sup>113</sup>Sn / <sup>117</sup>Sn / <sup>110</sup>In / <sup>111</sup>In; E < 40 MeV; measured Eγ, Iγ, excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23
- 2009P005    NUCLEAR REACTIONS <sup>117</sup>Sn(n, nγ), E=fast; Measured yield. BR2 reactor, Inductively Coupled Plasma Mass Spectrometry (ICPMS). JOUR ARISE 67 1158
- <sup>117</sup>Sb    2007YAZQ    NUCLEAR REACTIONS <sup>113</sup>In(α, γ), E = 8-12 MeV; measured induced activity, Eγ, Iγ; deduced σ. REPT ATOMKI 2007 Annual,P28,Yalcin
- 2009KH01    NUCLEAR REACTIONS Sn(p, X)<sup>117</sup>Sb / <sup>118</sup>Sb / <sup>120</sup>Sb / <sup>122</sup>Sb / <sup>124</sup>Sb / <sup>113</sup>Sn / <sup>117</sup>Sn / <sup>110</sup>In / <sup>111</sup>In; E < 40 MeV; measured Eγ, Iγ, excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23
- 2009WA02    NUCLEAR REACTIONS Yb, Lu, W, Os(<sup>136</sup>Xe, X)<sup>121</sup>Sb / <sup>123</sup>Sb, E=6.0-6.2 MeV / nucleon; measured Eγ, γγ-coin, γ(t), half-lives; deduced isomers. <sup>120</sup>Sn(<sup>7</sup>Li, 2nα), E=58 MeV; <sup>122</sup>Sn(<sup>7</sup>Li, 2nα), E=54 MeV; measured Eγ, Iγ, γγ-coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. <sup>121,123</sup>Sb; deduced levels, J, π, multipolarity, mixing ratios, configurations. Comparisons with <sup>120</sup>Sn and <sup>122</sup>Sn and with multistate mixing calculations. <sup>113,115,117,119,121,123,125,127,129,131,133</sup>Sb; systematics. JOUR PRVCA 79 024306
- 2009YA08    NUCLEAR REACTIONS <sup>113</sup>In(α, γ), (α, n)<sup>116</sup>Sb / <sup>116m</sup>Sb / <sup>117</sup>Sb, E(cm)=8.66-13.64 MeV; measured Eγ, Iγ, σ, astrophysical S factors. Comparison with statistical model calculations. JOUR PRVCA 79 065801
- <sup>117</sup>Cs    2009SI08    NUCLEAR REACTIONS <sup>122</sup>Sn(<sup>11</sup>B, 4n), E=60 MeV; measured Eγ, Iγ, γγ-coin, angular correlations. <sup>129</sup>Cs; deduced levels, J, π, bands, configurations. Comparison with tilted-axis cranking model calculations. <sup>117,121,123,125,127,129,131</sup>Cs; level systematics. JOUR PRVCA 79 044317

## A=118

- <sup>118</sup>Ru      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>118</sup>Rh      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>118</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=118 (continued)

- 2008DE30 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{110}\text{Pd}, {}^{110}\text{Pd}')$ , E=66 MeV / nucleon;  ${}^9\text{Be}({}^{114}\text{Pd}, {}^{114}\text{Pd}')$ , E=69 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives using recoil distance doppler shift method.  ${}^{110,114}\text{Pd}$ ; deduced levels, J,  $\pi$ , B(E2).  ${}^{102,104,106,108,112,116}\text{Pd}$ ,  ${}^{104,106,108,110,112,114,116,118}\text{Cd}$ ,  ${}^{96,98,100,102,104,106,108,110,112,114}\text{Ru}$ ; systematics of B(E2) values. Coulomb excitation. Comparisons with Interacting Boson Model. JOUR PRVCA 78 051302
- ${}^{118}\text{In}$  2008BE33 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{136}\text{Xe}, \text{X})$   ${}^{132}\text{Cs} / {}^{133}\text{Cs} / {}^{134}\text{Cs} / {}^{135}\text{Cs} / {}^{136}\text{Cs} / {}^{129}\text{Xe} / {}^{130}\text{Xe} / {}^{131}\text{Xe} / {}^{132}\text{Xe} / {}^{133}\text{Xe} / {}^{134}\text{Xe} / {}^{135}\text{Xe} / {}^{127}\text{I} / {}^{128}\text{I} / {}^{129}\text{I} / {}^{130}\text{I} / {}^{131}\text{I} / {}^{132}\text{I} / {}^{133}\text{I} / {}^{134}\text{I} / {}^{135}\text{I} / {}^{136}\text{I} / {}^{125}\text{Te} / {}^{126}\text{Te} / {}^{127}\text{Te} / {}^{128}\text{Te} / {}^{129}\text{Te} / {}^{130}\text{Te} / {}^{131}\text{Te} / {}^{132}\text{Te} / {}^{133}\text{Te} / {}^{134}\text{Te} / {}^{135}\text{Te} / {}^{123}\text{Sb} / {}^{124}\text{Sb} / {}^{125}\text{Sb} / {}^{126}\text{Sb} / {}^{127}\text{Sb} / {}^{128}\text{Sb} / {}^{129}\text{Sb} / {}^{130}\text{Sb} / {}^{131}\text{Sb} / {}^{132}\text{Sb} / {}^{133}\text{Sb} / {}^{134}\text{Sb} / {}^{120}\text{Sn} / {}^{121}\text{Sn} / {}^{122}\text{Sn} / {}^{123}\text{Sn} / {}^{124}\text{Sn} / {}^{125}\text{Sn} / {}^{126}\text{Sn} / {}^{127}\text{Sn} / {}^{128}\text{Sn} / {}^{129}\text{Sn} / {}^{130}\text{Sn} / {}^{131}\text{Sn} / {}^{132}\text{Sn} / {}^{118}\text{In} / {}^{119}\text{In} / {}^{120}\text{In} / {}^{121}\text{In} / {}^{122}\text{In} / {}^{123}\text{In} / {}^{124}\text{In} / {}^{125}\text{In} / {}^{126}\text{In} / {}^{127}\text{In} / {}^{128}\text{In} / {}^{129}\text{In} / {}^{130}\text{In} / {}^{131}\text{In} / {}^{115}\text{Cd} / {}^{116}\text{Cd} / {}^{117}\text{Cd} / {}^{118}\text{Cd} / {}^{119}\text{Cd} / {}^{120}\text{Cd} / {}^{121}\text{Cd} / {}^{122}\text{Cd} / {}^{123}\text{Cd} / {}^{124}\text{Cd} / {}^{125}\text{Cd} / {}^{126}\text{Cd} / {}^{127}\text{Cd} / {}^{128}\text{Cd} / {}^{129}\text{Cd} / {}^{130}\text{Cd} / {}^{122}\text{Ag} / {}^{123}\text{Ag} / {}^{124}\text{Ag} / {}^{125}\text{Ag} / {}^{126}\text{Ag} / {}^{127}\text{Ag} / {}^{128}\text{Ag} / {}^{119}\text{Pd} / {}^{120}\text{Pd} / {}^{121}\text{Pd} / {}^{122}\text{Pd} / {}^{123}\text{Pd} / {}^{124}\text{Pd} / {}^{125}\text{Pd} / {}^{117}\text{Rh} / {}^{118}\text{Rh} / {}^{119}\text{Rh} / {}^{120}\text{Rh} / {}^{121}\text{Rh} / {}^{122}\text{Rh} / {}^{118}\text{Ru} / {}^{119}\text{Ru} / {}^{115}\text{Tc} / {}^{116}\text{Tc} / {}^{117}\text{Tc} / {}^{113}\text{Mo} / {}^{110}\text{Nb} / {}^{111}\text{Nb} / {}^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008GUZT NUCLEAR REACTIONS  ${}^{120,121}\text{Sn}(p, \alpha)$ , E=23 MeV; measured  $E\alpha$ ,  $I\alpha$  using polarized protons; deduced  $\sigma(\theta)$ ,  $A_y(\theta)$ . REPT MLL 2007 Annual,P8,Guzaaoni
- ${}^{118}\text{Sn}$  2007WAZS NUCLEAR REACTIONS  ${}^{118}\text{Sn}({}^{64}\text{Ni}, {}^{64}\text{Ni}')$ , E=215-260 MeV; measured E(particle), I(particle),  $\theta$ (particle) backscattering; deduced quasielastic  $\sigma$ , barrier distribution. REPT JAEA-Review 2007-046,P51,Watanabe
- 2008GU17 NUCLEAR REACTIONS  ${}^{120}\text{Sn}(p, t)$ , E=21 MeV; measured triton spectra,  $\sigma$ ,  $\sigma(\theta)$ ; deduced levels, J,  $\pi$ . Comparison with shell-model, distorted-wave Born approximation calculations. JOUR PRVCA 78 064608
- 2009WAZX NUCLEAR REACTIONS  ${}^{124}\text{Sn}({}^{58}\text{Ni}, {}^{58}\text{Ni}')$ , E=195-245 MeV;  ${}^{118}\text{Sn}({}^{64}\text{Ni}, {}^{64}\text{Ni}')$ , E=215-260 MeV; measured E(particle), I(particle),  $\theta$ (particle) at backward angles; deduced  $\sigma$ ,  $d\sigma$ ; calculated  $\sigma$ ,  $d\sigma$  using CC code CCFULL. Both reactions produce the same composite system. CONF Tokai (Perspective in Nuc Phys), Proc.P280,Watanabe
- ${}^{118}\text{Sb}$  2009KH01 NUCLEAR REACTIONS  $\text{Sn}(p, \text{X})$   ${}^{117}\text{Sb} / {}^{118}\text{Sb} / {}^{120}\text{Sb} / {}^{122}\text{Sb} / {}^{124}\text{Sb} / {}^{113}\text{Sn} / {}^{117}\text{Sn} / {}^{110}\text{In} / {}^{111}\text{In}$ ; E < 40 MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23
- 2009SA06 NUCLEAR REACTIONS  ${}^7\text{Li}, \text{C}(p, n)$ , E=297 MeV;  ${}^{58}\text{Ni}, {}^{70}\text{Zn}, {}^{114}\text{Cd}, {}^{118}\text{Sn}, {}^{120}\text{Sn}(p, n)$ , E=198, 297 MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  ${}^7\text{Be}, {}^{12}\text{N}, {}^{13}\text{N}, {}^{58}\text{Cu}, {}^{70}\text{Ga}, {}^{114}\text{In}, {}^{118}\text{Sb}, {}^{120}\text{Sb}$ ; deduced B(GT). JOUR PRVCA 79 024602



## A=119

- <sup>119</sup>Ru      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>119</sup>Rh      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>119</sup>Pd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

A=119 (continued)

- <sup>119</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>119</sup>In      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>119</sup>Sb      2009WA02      NUCLEAR REACTIONS Yb, Lu, W, Os(<sup>136</sup>Xe, X)<sup>121</sup>Sb / <sup>123</sup>Sb, E=6.0-6.2 MeV / nucleon; measured E $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives; deduced isomers. <sup>120</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=58 MeV; <sup>122</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=54 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. <sup>121,123</sup>Sb; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with <sup>120</sup>Sn and <sup>122</sup>Sn and with multistate mixing calculations. <sup>113,115,117,119,121,123,125,127,129,131,133</sup>Sb; systematics. JOUR PRVCA 79 024306
- <sup>119</sup>Te      2008PAZU      NUCLEAR REACTIONS <sup>120,130</sup>Te( $\gamma$ , n), E = 12-35 MeV; measured E $\gamma$ , I $\gamma$ . <sup>119,129</sup>Te; deduced isomeric yield ratios. Betatron, activation method, Ge(Li) detector. CONF Moscow,P154,Palvanov
- 2009MAZY      NUCLEAR REACTIONS <sup>120,122,130</sup>Te( $\gamma$ , n), E(end point)=17.5 MeV; measured E $\gamma$ , I $\gamma$ . <sup>119,121,129</sup>Te; deduced isomeric yield ratios. CONF Cheboksary,P130,Mazur



## A=120 (continued)

- <sup>120</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>120</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008VOZX NUCLEAR REACTIONS <sup>112,120</sup>Sn( $\gamma$ ,  $\gamma'$ ), E < 9.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced B(E1) distribution. <sup>208</sup>Pb(p, p'), E=295 MeV; measured E $p$ , I $p$ ; deduced B(E1) distribution. CONF Cappadocia (Nuclear Physics and Astrophysics), P124, von Neumann-Co
- 2009DA16 RADIOACTIVITY <sup>64</sup>Zn, <sup>106</sup>Cd, <sup>120</sup>Te(2EC), ( $2\beta^+$ ); <sup>114,116</sup>Cd, <sup>128</sup>Te, <sup>130</sup>Te( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009DEZW NUCLEAR REACTIONS <sup>120</sup>Sn(<sup>7</sup>Li, <sup>7</sup>Li), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>7</sup>Li, <sup>7</sup>Li'), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>7</sup>Li, <sup>6</sup>Li), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>6</sup>Li, <sup>6</sup>Li'), E=19.5 MeV; measured E(particle), I(particle),  $\theta$ (particle); deduced  $d\sigma$ , nuclear densities; calculated  $d\sigma$  using optical model with Sao Paulo potential. CONF Brazil (Nuclear Physics 2008) Proc. P106, de Sousa

A=120 (*continued*)

- 2009LIZY NUCLEAR REACTIONS  $^{51}\text{V}(^8\text{Li}, ^8\text{Li})$ ,  $E=26$  MeV;  $^{51}\text{V}(^6\text{He}, ^6\text{He})$ ,  $E=15.4, 23$  MeV;  $^{120}\text{Sn}(^6\text{He}, ^6\text{He})$ ,  $E=17.4, 17.1, 19.8, 20.5$  MeV; measured  $E(\text{particle})$ ,  $\theta(\text{particle})$ ,  $I(\text{particle})$ ; deduced  $d\sigma$ ; calculated  $d\sigma$  using CDCC;  $^{120}\text{Sn}(^6\text{He}, \alpha)$ ,  $E=17.4, 17.1, 19.8, 20.5$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\theta\alpha$ ; deduced  $d\sigma$ ; calculated  $d\sigma$  using CDCC and Transfer-to-Continuum DWBA;  $^{120}\text{Sn}(^6\text{He}, ^5\text{He})$ ,  $E=17.4, 17.1, 19.8, 20.5$  MeV; calculated  $d\sigma$ . RIBRAS system. CONF Brazil (Nuclear Physics 2008) Proc. P76,Lichtenthaler
- 2009SC19 ATOMIC MASSES  $^{128,129,130,131,132}\text{Xe}$ ,  $^{120,128,130}\text{Te}$ ,  $^{120}\text{Sn}$ ; measured mass differences of  $^{120}\text{Te}$ - $^{120}\text{Sn}$ ,  $^{128}\text{Te}$ - $^{128}\text{Xe}$ ,  $^{130}\text{Te}$ - $^{130}\text{Xe}$  and  $^{132}\text{Xe}$ - $^{129}\text{Xe}$  pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
- 2009SC19 RADIOACTIVITY  $^{120}\text{Te}(2\beta^+)$ ;  $^{128,130}\text{Te}(2\beta^-)$ ; measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501
- 2009SH19 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{89}\text{Y}$ ,  $^{90}\text{Zr}$ ,  $^{120}\text{Sn}$ ,  $^{142}\text{Nd}$ ,  $^{166}\text{Er}$ ,  $^{208}\text{Pb}(p, p')$ ,  $E=200$  MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305
- 2009VA01 NUCLEAR REACTIONS  $^{120}\text{Sn}(^{74}\text{Zn}, ^{74}\text{Zn}')$ ,  $E=2.87$  MeV / nucleon;  $^{120}\text{Sn}(^{76}\text{Zn}, ^{76}\text{Zn}')$ ,  $E=2.83$  MeV / nucleon;  $^{108}\text{Pd}(^{78}\text{Zn}, ^{78}\text{Zn}')$ ,  $E=2.87$  MeV / nucleon;  $^{108}\text{Pd}(^{80}\text{Zn}, ^{80}\text{Zn}')$ ,  $E=2.79$  MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , charged particle spectra, (particle)- $\gamma$  coin, measured half-lives of first  $2^+$  state,  $B(E2)$ .  $^{74,76,78,80}\text{Zn}$ ,  $^{80}\text{Ga}$ ,  $^{80}\text{Rb}$ ,  $^{108}\text{Pd}$ ,  $^{120}\text{Sn}$ ; deduced levels. Fe, Ni, Zn, Ge, Se; systematics of  $B(E2)$  values. Comparison with shell-model calculations. JOUR PRVCA 79 014309
- $^{120}\text{Sb}$  2009KH01 NUCLEAR REACTIONS  $\text{Sn}(p, X)^{117}\text{Sb}$  /  $^{118}\text{Sb}$  /  $^{120}\text{Sb}$  /  $^{122}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{113}\text{Sn}$  /  $^{117}\text{Sn}$  /  $^{110}\text{In}$  /  $^{111}\text{In}$ ;  $E < 40$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23
- 2009NA10 NUCLEAR REACTIONS  $^{209}\text{Bi}(\gamma, F)$ ,  $E=2.5$  GeV;  $^{47}\text{Sc}$ ;  $^{48}\text{V}$ ;  $^{59}\text{Fe}$ ;  $^{72}\text{Zn}$ ;  $^{75}\text{Se}$ ;  $^{77}\text{Br}$ ;  $^{83}\text{Rb}$ ;  $^{85}\text{Kr}$ ;  $^{87}\text{Y}$ ;  $^{88}\text{Kr}$ ;  $^{88}\text{Zr}$ ;  $^{89}\text{Zr}$ ;  $^{91}\text{Sr}$ ;  $^{92}\text{Sr}$ ;  $^{95}\text{Zr}$ ;  $^{97}\text{Zr}$ ;  $^{99}\text{Mo}$ ;  $^{99}\text{Rh}$ ;  $^{103}\text{Ru}$ ;  $^{105}\text{Ru}$ ;  $^{105}\text{Rh}$ ;  $^{105}\text{Ag}$ ;  $^{111}\text{Ag}$ ;  $^{111}\text{In}$ ;  $^{112}\text{Ag}$ ;  $^{115}\text{Cd}$ ;  $^{117}\text{Cd}$ ;  $^{121}\text{Te}$ ;  $^{129}\text{Sb}$ ;  $^{60}\text{Ni}$ ; Measured  $E\gamma$ ,  $I\gamma$ , fission yields. JOUR NIMBE 267 1891
- 2009SA06 NUCLEAR REACTIONS  $^7\text{Li}$ ,  $\text{C}(p, n)$ ,  $E=297$  MeV;  $^{58}\text{Ni}$ ,  $^{70}\text{Zn}$ ,  $^{114}\text{Cd}$ ,  $^{118}\text{Sn}$ ,  $^{120}\text{Sn}(p, n)$ ,  $E=198, 297$  MeV; measured neutron TOF and  $\sigma(E, \theta)$ .  $^7\text{Be}$ ,  $^{12}\text{N}$ ,  $^{13}\text{N}$ ,  $^{58}\text{Cu}$ ,  $^{70}\text{Ga}$ ,  $^{114}\text{In}$ ,  $^{118}\text{Sb}$ ,  $^{120}\text{Sb}$ ; deduced  $B(\text{GT})$ . JOUR PRVCA 79 024602
- 2009VIZZ NUCLEAR REACTIONS  $^{116}\text{Cd}$ ,  $^{121}\text{Sb}(\gamma, n)$ ,  $E(\text{end point})=9.6-10.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{115}\text{Cd}$ ,  $^{120}\text{Sb}$ ; deduced isomeric yield ratios depending on  $E\gamma$ . CONF Cheboksary,P137,Vishnevsky
- $^{120}\text{Te}$  2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502

KEYNUMBERS AND KEYWORDS

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**A=120 (continued)**

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| 2009GU27                  | RADIOACTIVITY $^{120}\text{I}(\text{EC})$ ; measured $E_\gamma$ . $^{120}\text{I}$ ; deduced ground-state half-life. JOUR PRVCA 80 035804   |
| 2009SC19                  | ATOMIC MASSES $^{128,129,130,131,132}\text{Xe}$ , $^{120,128,130}\text{Te}$ , $^{120}\text{Sn}$ ; measured mass differences of $^{120}\text{Te}$ - $^{120}\text{Sn}$ , $^{128}\text{Te}$ - $^{128}\text{Xe}$ , $^{130}\text{Te}$ - $^{130}\text{Xe}$ and $^{132}\text{Xe}$ - $^{129}\text{Xe}$ pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501 |
| 2009SC19                  | RADIOACTIVITY $^{120}\text{Te}(2\beta^+)$ ; $^{128,130}\text{Te}(2\beta^-)$ ; measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501  |
| $^{120}\text{I}$ 2009GU27 | NUCLEAR REACTIONS $^{120}\text{Te}(p, \gamma)$ , $(p, n)$ , $E(\text{cm})=2.47\text{-}7.93$ MeV; measured $E_\gamma$ , $I_\gamma$ , half-life, $\sigma$ by activation method; deduced astrophysical S factors. Comparison with statistical model calculations using NON-SMOKER and TALYS computer codes. JOUR PRVCA 80 035804                                   |
| 2009GU27                  | RADIOACTIVITY $^{120}\text{I}(\text{EC})$ ; measured $E_\gamma$ . $^{120}\text{I}$ ; deduced ground-state half-life. JOUR PRVCA 80 035804   |

**A=121**

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| $^{121}\text{Rh}$ 2008BE33 | NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , $E=1$ GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
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## A=121 (continued)

- <sup>121</sup>Pd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009F005      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- <sup>121</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=121 (continued)

- <sup>121</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>121</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009DEZW NUCLEAR REACTIONS <sup>120</sup>Sn(<sup>7</sup>Li, <sup>7</sup>Li), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>7</sup>Li, <sup>7</sup>Li'), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>7</sup>Li, <sup>6</sup>Li), E=19.5, 20.5, 25 MeV; <sup>120</sup>Sn(<sup>6</sup>Li, <sup>6</sup>Li'), E=19.5 MeV; measured E(particle), I(particle),  $\theta$ (particle); deduced  $d\sigma$ , nuclear densities; calculated  $d\sigma$  using optical model with Sao Paulo potential. CONF Brazil (Nuclear Physics 2008) Proc. P106,de Sousa
- 2009LIZY NUCLEAR REACTIONS <sup>51</sup>V(<sup>8</sup>Li, <sup>8</sup>Li), E=26 MeV; <sup>51</sup>V(<sup>6</sup>He, <sup>6</sup>He), E=15.4, 23 MeV; <sup>120</sup>Sn(<sup>6</sup>He, <sup>6</sup>He), E=17.4, 17.1, 19.8, 20.5 MeV; measured E(particle),  $\theta$ (particle), I(particle); deduced  $d\sigma$ ; calculated  $d\sigma$  using CDCC; <sup>120</sup>Sn(<sup>6</sup>He,  $\alpha$ ), E=17.4, 17.1, 19.8, 20.5 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $\theta\alpha$ ; deduced  $d\sigma$ ; calculated  $d\sigma$  using CDCC and Transfer-to-Continuum DWBA; <sup>120</sup>Sn(<sup>6</sup>He, <sup>5</sup>He), E=17.4, 17.1, 19.8, 20.5 MeV; calculated  $d\sigma$ . RIBRAS system. CONF Brazil (Nuclear Physics 2008) Proc. P76,Lichtenthaler



KEYNUMBERS AND KEYWORDS

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**A=121 (continued)**

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| $^{121}\text{Sb}$ | 2009WA02 | NUCLEAR REACTIONS Yb, Lu, W, Os( $^{136}\text{Xe}$ , X) $^{121}\text{Sb}$ / $^{123}\text{Sb}$ , E=6.0-6.2 MeV / nucleon; measured $E\gamma$ , $\gamma\gamma$ -coin, $\gamma(t)$ , half-lives; deduced isomers. $^{120}\text{Sn}({}^7\text{Li}, 2n\alpha)$ , E=58 MeV; $^{122}\text{Sn}({}^7\text{Li}, 2n\alpha)$ , E=54 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. $^{121,123}\text{Sb}$ ; deduced levels, J, $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with $^{120}\text{Sn}$ and $^{122}\text{Sn}$ and with multistate mixing calculations. $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79 024306 |
| $^{121}\text{Te}$ | 2009MAZY | NUCLEAR REACTIONS $^{120,122,130}\text{Te}(\gamma, n)$ , E(end point)=17.5 MeV; measured $E\gamma$ , $I\gamma$ . $^{119,121,129}\text{Te}$ ; deduced isomeric yield ratios. CONF Cheboksary,P130,Mazur   |
|                   | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , E=2.5 GeV; $^{47}\text{Sc};^{48}\text{V};^{59}\text{Fe};^{72}\text{Zn};^{75}\text{Se};^{77}\text{Br};^{83}\text{Rb};^{85}\text{Kr};^{87}\text{Y};^{88}\text{Kr};^{88}\text{Zr};^{89}\text{Zr};^{91}\text{Sr};^{92}\text{Sr};^{95}\text{Zr};^{97}\text{Zr};^{99}\text{Mo};^{99}\text{Rh};^{103}\text{Ru};^{105}\text{Ru};^{105}\text{Rh};^{105}\text{Ag};^{111}\text{Ag};^{111}\text{In};^{112}\text{Ag};^{115}\text{Cd};^{117}\text{Cd};^{121}\text{Te};^{129}\text{Sb};^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891  |
| $^{121}\text{I}$  | 2009GU27 | NUCLEAR REACTIONS $^{120}\text{Te}(p, \gamma)$ , (p, n), E(cm)=2.47-7.93 MeV; measured $E\gamma$ , $I\gamma$ , half-life, $\sigma$ by activation method; deduced astrophysical S factors. Comparison with statistical model calculations using NON-SMOKER and TALYS computer codes. JOUR PRVCA 80 035804   |
| $^{121}\text{Xe}$ | 2007BEZQ | NUCLEAR REACTIONS $^{64}\text{Ni}({}^{64}\text{Ni}, \alpha 3n)$ , E not given; $^{121}\text{Xe}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\gamma\gamma\gamma\mp$ coin.; deduced level scheme. Comparison with Nilsson-Strutinsky calculations. REPT ATOMKI 2007 Annual,P29,Berek  |
| $^{121}\text{Cs}$ | 2009SI08 | NUCLEAR REACTIONS $^{122}\text{Sn}({}^{11}\text{B}, 4n)$ , E=60 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular correlations. $^{129}\text{Cs}$ ; deduced levels, J, $\pi$ , bands, configurations. Comparison with tilted-axis cranking model calculations. $^{117,121,123,125,127,129,131}\text{Cs}$ ; level systematics. JOUR PRVCA 79 044317   |



## A=122 (continued)

- <sup>122</sup>Cd     2008BE33     NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>122</sup>In     2008BE33     NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>122</sup>Sn     2008BE33     NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>122</sup>Sn     2008GUZR     NUCLEAR REACTIONS <sup>124</sup>Sn(p, t), E=25 MeV; measured Et, It; deduced J,  $\pi$ ,  $\sigma$ (J,  $\pi$ ). REPT MLL 2007 Annual,P12,Guazzoni

KEYNUMBERS AND KEYWORDS

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**A=122 (continued)**

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|-------------------|----------|---|
|                   | 2009LIZY | NUCLEAR REACTIONS $^{51}\text{V}(^8\text{Li}, ^8\text{Li})$ , $E=26$ MeV; $^{51}\text{V}(^6\text{He}, ^6\text{He})$ , $E=15.4, 23$ MeV; $^{120}\text{Sn}(^6\text{He}, ^6\text{He})$ , $E=17.4, 17.1, 19.8, 20.5$ MeV; measured $E(\text{particle})$ , $\theta(\text{particle})$ , $I(\text{particle})$ ; deduced $d\sigma$ ; calculated $d\sigma$ using CDCC; $^{120}\text{Sn}(^6\text{He}, \alpha)$ , $E=17.4, 17.1, 19.8, 20.5$ MeV; measured $E\alpha$ , $I\alpha$ , $\theta\alpha$ ; deduced $d\sigma$ ; calculated $d\sigma$ using CDCC and Transfer-to-Continuum DWBA; $^{120}\text{Sn}(^6\text{He}, ^5\text{He})$ , $E=17.4, 17.1, 19.8, 20.5$ MeV; calculated $d\sigma$ . RIBRAS system. CONF Brazil (Nuclear Physics 2008) Proc. P76,Lichtenthaler |
| $^{122}\text{Sb}$ | 2009KH01 | NUCLEAR REACTIONS $\text{Sn}(p, X)^{117}\text{Sb} / ^{118}\text{Sb} / ^{120}\text{Sb} / ^{122}\text{Sb} / ^{124}\text{Sb} / ^{113}\text{Sn} / ^{117}\text{Sn} / ^{110}\text{In} / ^{111}\text{In}$ ; $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23   |
|                   | 2009NA10 | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, F)$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$ ; Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891                       |
| $^{122}\text{Te}$ | 2008HI17 | NUCLEAR REACTIONS $^{122,124,126,128,130}\text{Te}(n, n'\gamma)$ , $E=1.7-3.4$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler Shift Attenuation Method; deduced levels, $J$ , $\pi$ , multipolarities, mixing ratios, $B(M1)$ , $B(E2)$ , mixed-symmetry states. Comparison with Interacting Boson Model calculations. JOUR PRVCA 78 054320  |
|                   | 2009IV02 | RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , $(\beta^+)$ ; measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502  |
| $^{122}\text{I}$  | 2009IV02 | RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , $(\beta^+)$ ; measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502  |
| $^{122}\text{La}$ | 2008FA13 | NUCLEAR REACTIONS $^{92}\text{Mo}(^{40}\text{Ca}, np2\alpha)$ , $E=190, 200$ MeV; measured $E\gamma$ , $I\gamma$ , $n\gamma$ -, $(X\text{-ray})\gamma$ -, $(\text{charged particle})\gamma$ -coin. $^{122}\text{La}$ deduced levels, $J$ , $\pi$ , band configurations; calculated deformation using a cranked shell model. JOUR ZAANE 38 43  |

## A=123

- <sup>123</sup>Pd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>123</sup>Ag      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>123</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

A=123 (continued)

- <sup>123</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>123</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009NA10 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Co
- Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891
- <sup>123</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

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**A=123** (*continued*)

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| 2009WA02          |          | NUCLEAR REACTIONS Yb, Lu, W, Os( $^{136}\text{Xe}$ , X) $^{121}\text{Sb}$ / $^{123}\text{Sb}$ , E=6.0-6.2 MeV / nucleon; measured $E_\gamma$ , $\gamma\gamma$ -coin, $\gamma(t)$ , half-lives; deduced isomers. $^{120}\text{Sn}(\text{}^7\text{Li}, 2n\alpha)$ , E=58 MeV; $^{122}\text{Sn}(\text{}^7\text{Li}, 2n\alpha)$ , E=54 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. $^{121,123}\text{Sb}$ ; deduced levels, J, $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with $^{120}\text{Sn}$ and $^{122}\text{Sn}$ and with multistate mixing calculations. $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79 024306 |
| $^{123}\text{Te}$ | 2008VI09 | RADIOACTIVITY $^{109}\text{Ag}$ , $^{123}\text{Te}$ , $^{147}\text{Pm}(\text{IT})$ ; measured $E_\gamma$ , $I_\gamma$ , X-ray spectra, $e\gamma$ -, eX-ray-coin. Deduced hypersatellite energy shift. JOUR BRSP 72 1559   |
| $^{123}\text{I}$  | 2009ZH19 | NUCLEAR REACTIONS $^{116}\text{Cd}(\text{}^{14}\text{N}, \alpha 3n)$ , E=65 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin.; $^{123}\text{I}$ ; deduced level scheme, energies, new band in $^{123}\text{I}$ , B(M1) / B(E2). Cranked shell and geometrical models. JOUR CPLEE 26 082301  |
| $^{123}\text{Cs}$ | 2009SI08 | NUCLEAR REACTIONS $^{122}\text{Sn}(\text{}^{11}\text{B}, 4n)$ , E=60 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, angular correlations. $^{129}\text{Cs}$ ; deduced levels, J, $\pi$ , bands, configurations. Comparison with tilted-axis cranking model calculations. $^{117,121,123,125,127,129,131}\text{Cs}$ ; level systematics. JOUR PRVCA 79 044317   |

**A=124**

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| $^{124}\text{Pd}$ | 2008BE33 | NUCLEAR REACTIONS $^9\text{Be}(\text{}^{136}\text{Xe}, \text{X})^{132}\text{Cs}$ / $^{133}\text{Cs}$ / $^{134}\text{Cs}$ / $^{135}\text{Cs}$ / $^{136}\text{Cs}$ / $^{129}\text{Xe}$ / $^{130}\text{Xe}$ / $^{131}\text{Xe}$ / $^{132}\text{Xe}$ / $^{133}\text{Xe}$ / $^{134}\text{Xe}$ / $^{135}\text{Xe}$ / $^{127}\text{I}$ / $^{128}\text{I}$ / $^{129}\text{I}$ / $^{130}\text{I}$ / $^{131}\text{I}$ / $^{132}\text{I}$ / $^{133}\text{I}$ / $^{134}\text{I}$ / $^{135}\text{I}$ / $^{136}\text{I}$ / $^{125}\text{Te}$ / $^{126}\text{Te}$ / $^{127}\text{Te}$ / $^{128}\text{Te}$ / $^{129}\text{Te}$ / $^{130}\text{Te}$ / $^{131}\text{Te}$ / $^{132}\text{Te}$ / $^{133}\text{Te}$ / $^{134}\text{Te}$ / $^{135}\text{Te}$ / $^{123}\text{Sb}$ / $^{124}\text{Sb}$ / $^{125}\text{Sb}$ / $^{126}\text{Sb}$ / $^{127}\text{Sb}$ / $^{128}\text{Sb}$ / $^{129}\text{Sb}$ / $^{130}\text{Sb}$ / $^{131}\text{Sb}$ / $^{132}\text{Sb}$ / $^{133}\text{Sb}$ / $^{134}\text{Sb}$ / $^{120}\text{Sn}$ / $^{121}\text{Sn}$ / $^{122}\text{Sn}$ / $^{123}\text{Sn}$ / $^{124}\text{Sn}$ / $^{125}\text{Sn}$ / $^{126}\text{Sn}$ / $^{127}\text{Sn}$ / $^{128}\text{Sn}$ / $^{129}\text{Sn}$ / $^{130}\text{Sn}$ / $^{131}\text{Sn}$ / $^{132}\text{Sn}$ / $^{118}\text{In}$ / $^{119}\text{In}$ / $^{120}\text{In}$ / $^{121}\text{In}$ / $^{122}\text{In}$ / $^{123}\text{In}$ / $^{124}\text{In}$ / $^{125}\text{In}$ / $^{126}\text{In}$ / $^{127}\text{In}$ / $^{128}\text{In}$ / $^{129}\text{In}$ / $^{130}\text{In}$ / $^{131}\text{In}$ / $^{115}\text{Cd}$ / $^{116}\text{Cd}$ / $^{117}\text{Cd}$ / $^{118}\text{Cd}$ / $^{119}\text{Cd}$ / $^{120}\text{Cd}$ / $^{121}\text{Cd}$ / $^{122}\text{Cd}$ / $^{123}\text{Cd}$ / $^{124}\text{Cd}$ / $^{125}\text{Cd}$ / $^{126}\text{Cd}$ / $^{127}\text{Cd}$ / $^{128}\text{Cd}$ / $^{129}\text{Cd}$ / $^{130}\text{Cd}$ / $^{122}\text{Ag}$ / $^{123}\text{Ag}$ / $^{124}\text{Ag}$ / $^{125}\text{Ag}$ / $^{126}\text{Ag}$ / $^{127}\text{Ag}$ / $^{128}\text{Ag}$ / $^{119}\text{Pd}$ / $^{120}\text{Pd}$ / $^{121}\text{Pd}$ / $^{122}\text{Pd}$ / $^{123}\text{Pd}$ / $^{124}\text{Pd}$ / $^{125}\text{Pd}$ / $^{117}\text{Rh}$ / $^{118}\text{Rh}$ / $^{119}\text{Rh}$ / $^{120}\text{Rh}$ / $^{121}\text{Rh}$ / $^{122}\text{Rh}$ / $^{118}\text{Ru}$ / $^{119}\text{Ru}$ / $^{115}\text{Tc}$ / $^{116}\text{Tc}$ / $^{117}\text{Tc}$ / $^{113}\text{Mo}$ / $^{110}\text{Nb}$ / $^{111}\text{Nb}$ / $^{108}\text{Zr}$ , E=1 GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
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KEYNUMBERS AND KEYWORDS

A=124 (continued)

- <sup>124</sup>Ag 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>124</sup>Cd 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>124</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605



## A=124 (continued)

- <sup>124</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008WAZX NUCLEAR REACTIONS <sup>124</sup>Sn(<sup>64</sup>Ni, <sup>64</sup>Ni'), E(cm) $\approx$ 140-170 MeV; measured E(particle), I(particle),  $\theta$ (particle) backscattering; deduced quasielastic  $\sigma$ . REPT JAEA-Review 2008-054,P51,Watanabe
- 2009F005 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>238</sup>U, X)<sup>60m</sup>Mn / <sup>78m</sup>Ga / <sup>82m</sup>Ga / <sup>92m</sup>Br / <sup>95m</sup>Rb / <sup>98m</sup>Rb / <sup>92m</sup>Y / <sup>101m</sup>Y / <sup>112m</sup>Tc, E=80 MeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-lives. <sup>60</sup>Mn, <sup>78,82</sup>Ga, <sup>92</sup>Br, <sup>95,98</sup>Rb, <sup>92,101</sup>Y, <sup>112</sup>Tc; deduced levels, J,  $\pi$ . <sup>66m</sup>Cu, <sup>78m</sup>Zn, <sup>88m</sup>Br, <sup>95m</sup>Kr, <sup>96m</sup>Rb, <sup>97m,100m</sup>Sr, <sup>99m</sup>Mo, <sup>121m</sup>Pd, <sup>124m</sup>Sn, <sup>125m</sup>Xe; measured E $\gamma$  and half-lives. <sup>91,92,93</sup>Y; measured E $\gamma$ . JOUR PRVCA 79 064318
- 2009HW02 RADIOACTIVITY <sup>124</sup>Sn(2 $\beta^-$ ); measured summed electron energy spectrum; deduced 0 $\nu\beta\beta$ -decay T<sub>1/2</sub> lower limits. JOUR APHYE 31 412
- 2009WAZX NUCLEAR REACTIONS <sup>124</sup>Sn(<sup>58</sup>Ni, <sup>58</sup>Ni'), E=195-245 MeV; <sup>118</sup>Sn(<sup>64</sup>Ni, <sup>64</sup>Ni'), E=215-260 MeV; measured E(particle), I(particle),  $\theta$ (particle) at backward angles; deduced  $\sigma$ , d $\sigma$ ; calculated  $\sigma$ , d $\sigma$  using CC code CCFULL. Both reactions produce the same composite system. CONF Tokai (Perspective in Nuc Phys), Proc.P280,Watanabe
- <sup>124</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

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**A=124 (continued)**

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| 2009BEZZ          | RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $E(\text{K X-ray})$ , $I(\text{K X-ray})$ , $\beta\gamma$ -coin, $T_{1/2}$ . Comparison of multiple measurements by different laboratories. REPT CEA-R-6222,Be  |
| 2009IW01          | RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin. JOUR NIMAE 602 450   |
| 2009KH01          | NUCLEAR REACTIONS $\text{Sn}(p, X)^{117}\text{Sb} / ^{118}\text{Sb} / ^{120}\text{Sb} / ^{122}\text{Sb} / ^{124}\text{Sb} / ^{113}\text{Sn} / ^{117}\text{Sn} / ^{110}\text{In} / ^{111}\text{In}$ ; $E < 40$ MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the stacked foil activation technique. Compared results to model calculations. JOUR NIMBE 267 23   |
| $^{124}\text{Te}$ | 2008HI17 NUCLEAR REACTIONS $^{122,124,126,128,130}\text{Te}(n, n'\gamma)$ , $E=1.7-3.4$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler Shift Attenuation Method; deduced levels, $J$ , $\pi$ , multipolarities, mixing ratios, $B(\text{M1})$ , $B(\text{E2})$ , mixed-symmetry states. Comparison with Interacting Boson Model calculations. JOUR PRVCA 78 054320   |
| 2009BEZZ          | RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E\beta$ , $I\beta$ , $E\gamma$ , $I\gamma$ , $E(\text{K X-ray})$ , $I(\text{K X-ray})$ , $\beta\gamma$ -coin, $T_{1/2}$ . Comparison of multiple measurements by different laboratories. REPT CEA-R-6222,Be  |
| 2009HW02          | RADIOACTIVITY $^{124}\text{Sn}(2\beta^-)$ ; measured summed electron energy spectrum; deduced $0\nu\beta\beta$ -decay $T_{1/2}$ lower limits. JOUR APHYE 31 412   |
| 2009IW01          | RADIOACTIVITY $^{124}\text{Sb}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin. JOUR NIMAE 602 450   |
| $^{124}\text{I}$  | 2009NA10 NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, \text{F})$ , $E=2.5$ GeV; $^{47}\text{Sc}$ ; $^{48}\text{V}$ ; $^{59}\text{Fe}$ ; $^{72}\text{Zn}$ ; $^{75}\text{Se}$ ; $^{77}\text{Br}$ ; $^{83}\text{Rb}$ ; $^{85}\text{Kr}$ ; $^{87}\text{Y}$ ; $^{88}\text{Kr}$ ; $^{88}\text{Zr}$ ; $^{89}\text{Zr}$ ; $^{91}\text{Sr}$ ; $^{92}\text{Sr}$ ; $^{95}\text{Zr}$ ; $^{97}\text{Zr}$ ; $^{99}\text{Mo}$ ; $^{99}\text{Rh}$ ; $^{103}\text{Ru}$ ; $^{105}\text{Ru}$ ; $^{105}\text{Rh}$ ; $^{105}\text{Ag}$ ; $^{111}\text{Ag}$ ; $^{111}\text{In}$ ; $^{112}\text{Ag}$ ; $^{115}\text{Cd}$ ; $^{117}\text{Cd}$ ; $^{121}\text{Te}$ ; $^{129}\text{Sb}$ ; $^{60}\text{Ni}$ . Measured $E\gamma$ , $I\gamma$ , fission yields. JOUR NIMBE 267 1891 |
| $^{124}\text{Cs}$ | 2009YA10 NUCLEAR REACTIONS $^{116}\text{Sn}(^{11}\text{B}, 3n)$ , $E=45$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced level scheme, energies, $E1$ transition for alternate parity bands, octupole correlations. JOUR CPLEE 26 082101   |

**A=125**

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| $^{125}\text{Pd}$ | 2008BE33 NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , $E=1$ GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
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KEYNUMBERS AND KEYWORDS

A=125 (continued)

<sup>125</sup> Ag	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>
<sup>125</sup> Cd	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>
<sup>125</sup> In	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>

## A=125 (continued)

- <sup>125</sup>Sn      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>125</sup>Sb      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009WA02      NUCLEAR REACTIONS Yb, Lu, W, Os(<sup>136</sup>Xe, X)<sup>121</sup>Sb / <sup>123</sup>Sb, E=6.0-6.2 MeV / nucleon; measured E $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives; deduced isomers. <sup>120</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=58 MeV; <sup>122</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=54 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. <sup>121,123</sup>Sb; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with <sup>120</sup>Sn and <sup>122</sup>Sn and with multistate mixing calculations. <sup>113,115,117,119,121,123,125,127,129,131,133</sup>Sb; systematics. JOUR PRVCA 79 024306

## A=125 (continued)

- $^{125}\text{Te}$       2008BE33      NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605$
- $^{125}\text{Xe}$       2009F005      NUCLEAR REACTIONS  $^9\text{Be}(^{238}\text{U}, \text{X})^{60m}\text{Mn} / ^{78m}\text{Ga} / ^{82m}\text{Ga} / ^{92m}\text{Br} / ^{95m}\text{Rb} / ^{98m}\text{Rb} / ^{92m}\text{Y} / ^{101m}\text{Y} / ^{112m}\text{Tc}, E=80 \text{ MeV} / \text{nucleon; measured } E\gamma, I\gamma, \gamma\gamma\text{-coin, isomer half-lives. } ^{60}\text{Mn}, ^{78,82}\text{Ga}, ^{92}\text{Br}, ^{95,98}\text{Rb}, ^{92,101}\text{Y}, ^{112}\text{Tc}; \text{deduced levels, } J, \pi. ^{66m}\text{Cu}, ^{78m}\text{Zn}, ^{88m}\text{Br}, ^{95m}\text{Kr}, ^{96m}\text{Rb}, ^{97m,100m}\text{Sr}, ^{99m}\text{Mo}, ^{121m}\text{Pd}, ^{124m}\text{Sn}, ^{125m}\text{Xe}; \text{measured } E\gamma \text{ and half-lives. } ^{91,92,93}\text{Y}; \text{measured } E\gamma. \text{ JOUR PRVCA 79 064318}$
- 2010TA01      NUCLEAR REACTIONS  $^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}, \text{Ti}(p, x)^{48}\text{V}, \text{Al}(p, x)^{24}\text{Na}, E < 70 \text{ MeV}; \text{measured } E\gamma, I\gamma; \text{deduced } \sigma. \text{ Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47}$
- $^{125}\text{Cs}$       2009SI08      NUCLEAR REACTIONS  $^{122}\text{Sn}(^{11}\text{B}, 4n), E=60 \text{ MeV}; \text{measured } E\gamma, I\gamma, \gamma\gamma\text{-coin, angular correlations. } ^{129}\text{Cs}; \text{deduced levels, } J, \pi, \text{ bands, configurations. Comparison with tilted-axis cranking model calculations. } ^{117,121,123,125,127,129,131}\text{Cs}; \text{level systematics. JOUR PRVCA 79 044317}$

## A=126

- <sup>126</sup>Ag      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>126</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009JU02      NUCLEAR REACTIONS <sup>136</sup>Xe(Be, X), <sup>238</sup>U(Be, X), E=650, 750 MeV / nucleon; <sup>126,128,130</sup>Cd; measured E $\gamma$ , I $\gamma$ ; deduced J $\pi$ . Beyond mean field calculations, Gogny force. JOUR APOBB 40 427
- <sup>126</sup>In      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

A=126 (continued)

- <sup>126</sup>Sn      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009BI07      RADIOACTIVITY <sup>126</sup>Sn( $\beta^-$ ) [from <sup>235</sup>U(n, F)]; measured E $\gamma$ , I $\gamma$ ; deduced T<sub>1/2</sub>. JOUR RAACA 97 687
- <sup>126</sup>Sb      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009BI07      RADIOACTIVITY <sup>126</sup>Sb( $\beta^-$ ) [from <sup>235</sup>U(n, F)]; measured E $\gamma$ , I $\gamma$ ; deduced T<sub>1/2</sub>. JOUR RAACA 97 687
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Co Measured E $\gamma$ , I $\gamma$ , fission yields. JOUR NIMBE 267 1891

**A=126 (continued)**

- <sup>126</sup>Te      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008HI17      NUCLEAR REACTIONS <sup>122,124,126,128,130</sup>Te(n, n' $\gamma$ ), E=1.7-3.4 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler Shift Attenuation Method; deduced levels, J,  $\pi$ , multipolarities, mixing ratios, B(M1), B(E2), mixed-symmetry states. Comparison with Interacting Boson Model calculations. JOUR PRVCA 78 054320

**A=127**

- <sup>127</sup>Ag      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605



KEYNUMBERS AND KEYWORDS

A=127 (continued)

- <sup>127</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AR04      RADIOACTIVITY <sup>127,129,131</sup>Cd( $\beta^-$ ); measured I $\gamma$ , E $\gamma$ ; deduced J $\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437
- <sup>127</sup>In      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AR04      RADIOACTIVITY <sup>127,129,131</sup>Cd( $\beta^-$ ); measured I $\gamma$ , E $\gamma$ ; deduced J $\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437
- <sup>127</sup>Sn      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=127 (continued)

- <sup>127</sup>Sb      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009WA02      NUCLEAR REACTIONS Yb, Lu, W, Os(<sup>136</sup>Xe, X)<sup>121</sup>Sb / <sup>123</sup>Sb, E=6.0-6.2 MeV / nucleon; measured E $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma$ (t), half-lives; deduced isomers. <sup>120</sup>Sn(<sup>7</sup>Li, 2 $\alpha$ ), E=58 MeV; <sup>122</sup>Sn(<sup>7</sup>Li, 2 $\alpha$ ), E=54 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. <sup>121,123</sup>Sb; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with <sup>120</sup>Sn and <sup>122</sup>Sn and with multistate mixing calculations. 113,115,117,119,121,123,125,127,129,131,133Sb; systematics. JOUR PRVCA 79 024306
- <sup>127</sup>Te      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009BAZV      RADIOACTIVITY <sup>127</sup>Te( $\beta^-$ )[from <sup>126</sup>Te+n]; measured E $\gamma$ , I $\gamma$ ; deduced half-life. CONF Brazil (Nuclear Physics 2008) Proc. P187,Batista

KEYNUMBERS AND KEYWORDS

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A=127 (continued)

$^{127}\text{I}$	2008BE33	<p>NUCLEAR REACTIONS <math>^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}, E=1 \text{ GeV} /</math></p> <p>nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>
	2009BAZV	<p>RADIOACTIVITY <math>^{127}\text{Te}(\beta^-)</math>[from <math>^{126}\text{Te}+n</math>]; measured <math>E_\gamma, I_\gamma</math>; deduced half-life. CONF Brazil (Nuclear Physics 2008) Proc. P187,Batista</p>
$^{127}\text{Xe}$	2010TA01	<p>NUCLEAR REACTIONS <math>^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}, \text{Ti}(p, x)^{48}\text{V}, \text{Al}(p, x)^{24}\text{Na}, E &lt; 70 \text{ MeV}</math>; measured <math>E_\gamma, I_\gamma</math>; deduced <math>\sigma</math>. Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47</p>
$^{127}\text{Cs}$	2009SI08	<p>NUCLEAR REACTIONS <math>^{122}\text{Sn}(^{11}\text{B}, 4n), E=60 \text{ MeV}</math>; measured <math>E_\gamma, I_\gamma, \gamma\gamma</math>-coin, angular correlations. <math>^{129}\text{Cs}</math>; deduced levels, J, <math>\pi</math>, bands, configurations. Comparison with tilted-axis cranking model calculations. <math>^{117,121,123,125,127,129,131}\text{Cs}</math>; level systematics. JOUR PRVCA 79 044317</p>
	2010TA01	<p>NUCLEAR REACTIONS <math>^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}, \text{Ti}(p, x)^{48}\text{V}, \text{Al}(p, x)^{24}\text{Na}, E &lt; 70 \text{ MeV}</math>; measured <math>E_\gamma, I_\gamma</math>; deduced <math>\sigma</math>. Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47</p>
$^{127}\text{Pm}$	2008STZX	<p>NUCLEAR REACTIONS <math>^{58}\text{Ni}(^{76}\text{Kr}, \text{X}), E=4.34 \text{ MeV} /</math> nucleon; <math>^{130}\text{Nd}, ^{131}\text{Pm}, ^{129}\text{Pm}, ^{127}\text{Pm}, ^{128}\text{Nd}</math>; measured <math>E_\gamma, I_\gamma, \gamma\gamma</math>-coin. CONF Cappadocia (Nuclear Physics and Astrophysics),P166,Stezowski</p>

## A=128

- <sup>128</sup>Ag 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>128</sup>Cd 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009CA02 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>128</sup>Cd, E=750 MeV / nucleon; <sup>9</sup>Be(<sup>238</sup>U, X)<sup>128</sup>Cd, E=650 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -,  $\gamma\gamma$ -coin, half-lives, internal conversion coefficients. <sup>128</sup>Cd; deduced levels, J,  $\pi$ . Comparison with large-scale shell model calculations. JOUR PRVCA 79 011301
- 2009JU02 NUCLEAR REACTIONS <sup>136</sup>Xe(Be, X), <sup>238</sup>U(Be, X), E=650, 750 MeV / nucleon; <sup>126,128,130</sup>Cd; measured  $E\gamma$ ,  $I\gamma$ ; deduced J $\pi$ . Beyond mean field calculations, Gogny force. JOUR APOBB 40 427

KEYNUMBERS AND KEYWORDS

A=128 (continued)

- <sup>128</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>128</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>128</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=128 (continued)

- <sup>128</sup>Te 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008HI17 NUCLEAR REACTIONS <sup>122,124,126,128,130</sup>Te(n, n' $\gamma$ ), E=1.7-3.4 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler Shift Attenuation Method; deduced levels, J,  $\pi$ , multipolarities, mixing ratios, B(M1), B(E2), mixed-symmetry states. Comparison with Interacting Boson Model calculations. JOUR PRVCA 78 054320
- 2009DA16 RADIOACTIVITY <sup>64</sup>Zn, <sup>106</sup>Cd, <sup>120</sup>Te(2EC), ( $2\beta^+$ ); <sup>114,116</sup>Cd, <sup>128</sup>Te, <sup>130</sup>Te( $2\beta^-$ ); measured E $\gamma$ , I $\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009SC19 ATOMIC MASSES <sup>128,129,130,131,132</sup>Xe, <sup>120,128,130</sup>Te, <sup>120</sup>Sn; measured mass differences of <sup>120</sup>Te-<sup>120</sup>Sn, <sup>128</sup>Te-<sup>128</sup>Xe, <sup>130</sup>Te-<sup>130</sup>Xe and <sup>132</sup>Xe-<sup>129</sup>Xe pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
- 2009SC19 RADIOACTIVITY <sup>120</sup>Te( $2\beta^+$ ); <sup>128,130</sup>Te( $2\beta^-$ ); measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501
- <sup>128</sup>I 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

A=128 (*continued*)

$^{128}\text{Xe}$	2009DA16	RADIOACTIVITY $^{64}\text{Zn}$ , $^{106}\text{Cd}$ , $^{120}\text{Te}(2\text{EC})$ , ( $2\beta^+$ ); $^{114,116}\text{Cd}$ , $^{128}\text{Te}$ , $^{130}\text{Te}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
	2009SC19	ATOMIC MASSES $^{128,129,130,131,132}\text{Xe}$ , $^{120,128,130}\text{Te}$ , $^{120}\text{Sn}$ ; measured mass differences of $^{120}\text{Te}$ - $^{120}\text{Sn}$ , $^{128}\text{Te}$ - $^{128}\text{Xe}$ , $^{130}\text{Te}$ - $^{130}\text{Xe}$ and $^{132}\text{Xe}$ - $^{129}\text{Xe}$ pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
	2009SC19	RADIOACTIVITY $^{120}\text{Te}(2\beta^+)$ ; $^{128,130}\text{Te}(2\beta^-)$ ; measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501
$^{128}\text{Ba}$	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
	2009PA25	NUCLEAR REACTIONS $^{130}\text{Ba}(p, t)$ , $E=25$ MeV; measured triton spectra, $\sigma(\theta)$ . $^{128}\text{Ba}$ ; deduced levels, J, $\pi$ . Comparison of excitation energies and $\gamma$ -ray transition probabilities with IBA model calculations. JOUR PRVCA 79 064323
	2010TA01	NUCLEAR REACTIONS $^{133}\text{Cs}(p, x)^{128}\text{Ba}$ / $^{129}\text{Ba}$ / $^{133}\text{Ba}$ / $^{127}\text{Cs}$ / $^{129}\text{Cs}$ / $^{132}\text{Cs}$ / $^{125}\text{Xe}$ / $^{127}\text{Xe}$ / $^{129}\text{Xe}$ , $\text{Ti}(p, x)^{48}\text{V}$ , $\text{Al}(p, x)^{24}\text{Na}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
$^{128}\text{La}$	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
$^{128}\text{Ce}$	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
$^{128}\text{Pr}$	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
$^{128}\text{Nd}$	2008STZX	NUCLEAR REACTIONS $^{58}\text{Ni}(^{76}\text{Kr}, X)$ , $E=4.34$ MeV / nucleon; $^{130}\text{Nd}$ , $^{131}\text{Pm}$ , $^{129}\text{Pm}$ , $^{127}\text{Pm}$ , $^{128}\text{Nd}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. CONF Cappadocia (Nuclear Physics and Astrophysics),P166,Stezowski

## A=129

- <sup>129</sup>Cd      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AR04      RADIOACTIVITY <sup>127,129,131</sup>Cd( $\beta^-$ ); measured I $\gamma$ , E $\gamma$ ; deduced J $\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437
- <sup>129</sup>In      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AR04      RADIOACTIVITY <sup>127,129,131</sup>Cd( $\beta^-$ ); measured I $\gamma$ , E $\gamma$ ; deduced J $\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437



KEYNUMBERS AND KEYWORDS

A=129 (continued)

- <sup>129</sup>Sn      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>129</sup>Sb      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009NA10      NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=2.5 GeV; <sup>47</sup>Sc; <sup>48</sup>V; <sup>59</sup>Fe; <sup>72</sup>Zn; <sup>75</sup>Se; <sup>77</sup>Br; <sup>83</sup>Rb; <sup>85</sup>Kr; <sup>87</sup>Y; <sup>88</sup>Kr; <sup>88</sup>Zr; <sup>89</sup>Zr; <sup>91</sup>Sr; <sup>92</sup>Sr; <sup>95</sup>Zr; <sup>97</sup>Zr; <sup>99</sup>Mo; <sup>99</sup>Rh; <sup>103</sup>Ru; <sup>105</sup>Ru; <sup>105</sup>Rh; <sup>105</sup>Ag; <sup>111</sup>Ag; <sup>111</sup>In; <sup>112</sup>Ag; <sup>115</sup>Cd; <sup>117</sup>Cd; <sup>121</sup>Te; <sup>129</sup>Sb; <sup>60</sup>Co
- 2009WA02      NUCLEAR REACTIONS Yb, Lu, W, Os(<sup>136</sup>Xe, X)<sup>121</sup>Sb / <sup>123</sup>Sb, E=6.0-6.2 MeV / nucleon; measured E $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives; deduced isomers. <sup>120</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=58 MeV; <sup>122</sup>Sn(<sup>7</sup>Li, 2n $\alpha$ ), E=54 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients. <sup>121,123</sup>Sb; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with <sup>120</sup>Sn and <sup>122</sup>Sn and with multistate mixing calculations. <sup>113,115,117,119,121,123,125,127,129,131,133</sup>Sb; systematics. JOUR PRVCA 79 024306

KEYNUMBERS AND KEYWORDS

A=129 (continued)

- <sup>129</sup>Te      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008PAZU      NUCLEAR REACTIONS <sup>120,130</sup>Te( $\gamma$ , n), E = 12-35 MeV; measured E $\gamma$ , I $\gamma$ . <sup>119,129</sup>Te; deduced isomeric yield ratios. Betatron, activation method, Ge(Li) detector. CONF Moscow,P154,Palvanov
- 2009MAZY      NUCLEAR REACTIONS <sup>120,122,130</sup>Te( $\gamma$ , n), E(end point)=17.5 MeV; measured E $\gamma$ , I $\gamma$ . <sup>119,121,129</sup>Te; deduced isomeric yield ratios. CONF Cheboksary,P130,Mazur
- <sup>129</sup>I      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=129 (continued)

- $^{129}\text{Xe}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009RE03 ATOMIC MASSES  $^{84,86}\text{Kr}$ ,  $^{129,132}\text{Xe}$ ; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012506
- 2009SC19 ATOMIC MASSES  $^{128,129,130,131,132}\text{Xe}$ ,  $^{120,128,130}\text{Te}$ ,  $^{120}\text{Sn}$ ; measured mass differences of  $^{120}\text{Te}$ - $^{120}\text{Sn}$ ,  $^{128}\text{Te}$ - $^{128}\text{Xe}$ ,  $^{130}\text{Te}$ - $^{130}\text{Xe}$  and  $^{132}\text{Xe}$ - $^{129}\text{Xe}$  pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
- 2010TA01 NUCLEAR REACTIONS  $^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}$ , Ti(p, x) $^{48}\text{V}$ , Al(p, x) $^{24}\text{Na}$ , E < 70 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- $^{129}\text{Cs}$  2009SI08 NUCLEAR REACTIONS  $^{122}\text{Sn}(^{11}\text{B}, 4n)$ , E=60 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin, angular correlations.  $^{129}\text{Cs}$ ; deduced levels, J,  $\pi$ , bands, configurations. Comparison with tilted-axis cranking model calculations.  $^{117,121,123,125,127,129,131}\text{Cs}$ ; level systematics. JOUR PRVCA 79 044317
- 2009TA03 NUCLEAR REACTIONS  $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , E < 45 MeV; measured  $E_\gamma$ ,  $I_\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- 2009ZH20 NUCLEAR REACTIONS  $^{122}\text{Sn}(^{11}\text{B}, 4n)$ , E=55-60 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin.; deduced band structure. Comparison with cranked shell-model calculations. JOUR CPLEE 26 092301
- 2010TA01 NUCLEAR REACTIONS  $^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}$ , Ti(p, x) $^{48}\text{V}$ , Al(p, x) $^{24}\text{Na}$ , E < 70 MeV; measured  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- $^{129}\text{Ba}$  2009TA03 NUCLEAR REACTIONS  $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , E < 45 MeV; measured  $E_\gamma$ ,  $I_\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742

KEYNUMBERS AND KEYWORDS

A=129 (continued)

- 2010TA01 NUCLEAR REACTIONS  $^{133}\text{Cs}(p, x)^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}$ ,  $\text{Ti}(p, x)^{48}\text{V}$ ,  $\text{Al}(p, x)^{24}\text{Na}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- $^{129}\text{Pm}$  2008STZX NUCLEAR REACTIONS  $^{58}\text{Ni}(^{76}\text{Kr}, X)$ ,  $E=4.34$  MeV / nucleon;  $^{130}\text{Nd}$ ,  $^{131}\text{Pm}$ ,  $^{129}\text{Pm}$ ,  $^{127}\text{Pm}$ ,  $^{128}\text{Nd}$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin. CONF Cappadocia (Nuclear Physics and Astrophysics), P166, Stezowski

A=130

- $^{130}\text{Cd}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009JU02 NUCLEAR REACTIONS  $^{136}\text{Xe}(\text{Be}, X)$ ,  $^{238}\text{U}(\text{Be}, X)$ ,  $E=650, 750$  MeV / nucleon;  $^{126,128,130}\text{Cd}$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $J\pi$ . Beyond mean field calculations, Gogny force. JOUR APOBB 40 427
- $^{130}\text{In}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

KEYNUMBERS AND KEYWORDS

A=130 (continued)

<sup>130</sup> Sn	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>
<sup>130</sup> Sb	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>
<sup>130</sup> Te	2008BE33	<p>NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</p>

## A=130 (continued)

- 2008HI17 NUCLEAR REACTIONS  $^{122,124,126,128,130}\text{Te}(n, n'\gamma)$ ,  $E=1.7\text{-}3.4$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, angular distributions, half-lives using Doppler Shift Attenuation Method; deduced levels, J,  $\pi$ , multipolarities, mixing ratios, B(M1), B(E2), mixed-symmetry states. Comparison with Interacting Boson Model calculations. JOUR PRVCA 78 054320
- 2008KOZV 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limits,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Moscow,P203,Kochetov
- 2008TH07 RADIOACTIVITY  $^{130}\text{Te}(2\beta^-)$ ; measured concentrations of decay daughters in geological samples; deduced half-life. JOUR PRVCA 78 054606
- 2009DA16 RADIOACTIVITY  $^{64}\text{Zn}$ ,  $^{106}\text{Cd}$ ,  $^{120}\text{Te}(2\text{EC})$ ,  $(2\beta^+)$ ;  $^{114,116}\text{Cd}$ ,  $^{128}\text{Te}$ ,  $^{130}\text{Te}(2\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009KOZY 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limit,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
- 2009RE07 ATOMIC MASSES  $^{130}\text{Te}$ ,  $^{130}\text{Xe}$ ; Measured atomic masses using precision cryogenic Penning-trap spectrometer; Deduced Q-value for  $2\beta$ -decay. Compared with energy calibration of CUORICINO and CUORE experiments. JOUR PRLTA 102 212502
- 2009SC19 ATOMIC MASSES  $^{128,129,130,131,132}\text{Xe}$ ,  $^{120,128,130}\text{Te}$ ,  $^{120}\text{Sn}$ ; measured mass differences of  $^{120}\text{Te}$ - $^{120}\text{Sn}$ ,  $^{128}\text{Te}$ - $^{128}\text{Xe}$ ,  $^{130}\text{Te}$ - $^{130}\text{Xe}$  and  $^{132}\text{Xe}$ - $^{129}\text{Xe}$  pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
- 2009SC19 RADIOACTIVITY  $^{120}\text{Te}(2\beta^+)$ ;  $^{128,130}\text{Te}(2\beta^-)$ ; measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501
- <sup>130</sup>I 2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, X)^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$  /  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$  /  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$  /  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$  /  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$  /  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$  /  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$  /  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=130 (continued)

- <sup>130</sup>Xe 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008KOZV 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limits,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Moscow,P203,Kochetov
- 2008TH07 RADIOACTIVITY <sup>130</sup>Te( $2\beta^-$ ); measured concentrations of decay daughters in geological samples; deduced half-life. JOUR PRVCA 78 054606
- 2009BE11 RADIOACTIVITY <sup>130</sup>Cs(EC), ( $\beta^+$ )[from <sup>126</sup>Te(<sup>7</sup>Li, 3n), E=30 MeV]; measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , mixing ratios. <sup>130</sup>Xe; deduced levels, J,  $\pi$ , multipolarity. Comparison with shell-model and interacting-boson model-2 calculations. JOUR PRVCA 79 034315
- 2009DA16 RADIOACTIVITY <sup>64</sup>Zn, <sup>106</sup>Cd, <sup>120</sup>Te( $2EC$ ), ( $2\beta^+$ ); <sup>114,116</sup>Cd, <sup>128</sup>Te, <sup>130</sup>Te( $2\beta^-$ ); measured  $E_\gamma$ ,  $I_\gamma$ ; deduced half-life limits for neutrinoless double-beta decay. Comparison with previous experimental data. JOUR PRVCA 80 025502
- 2009G009 NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009KOZY 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  $0\nu 2\beta^-$ -decay  $T_{1/2}$  lower limit,  $2\nu 2\beta^-$ -decay  $T_{1/2}$ . CONF Cheboksary,P84,Kochetov
- 2009RE07 ATOMIC MASSES <sup>130</sup>Te, <sup>130</sup>Xe; Measured atomic masses using precision cryogenic Penning-trap spectrometer; Deduced Q-value for  $2\beta^-$ -decay. Compared with energy calibration of CUORICINO and CUORE experiments. JOUR PRLTA 102 212502
- 2009SC19 ATOMIC MASSES <sup>128,129,130,131,132</sup>Xe, <sup>120,128,130</sup>Te, <sup>120</sup>Sn; measured mass differences of <sup>120</sup>Te-<sup>120</sup>Sn, <sup>128</sup>Te-<sup>128</sup>Xe, <sup>130</sup>Te-<sup>130</sup>Xe and <sup>132</sup>Xe-<sup>129</sup>Xe pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501

KEYNUMBERS AND KEYWORDS

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**A=130** (*continued*)

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|-------------------|----------|---|
|                   | 2009SC19 | RADIOACTIVITY $^{120}\text{Te}(2\beta^+)$ ; $^{128,130}\text{Te}(2\beta^-)$ ; measured parent-daughter mass differences by Penning-trap spectrometer; deduced Q values. JOUR PRVCA 80 025501  |
| $^{130}\text{Cs}$ | 2009BE11 | RADIOACTIVITY $^{130}\text{Cs}(\text{EC})$ , $(\beta^+)$ [from $^{126}\text{Te}(^7\text{Li}, 3n)$ , E=30 MeV]; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , mixing ratios. $^{130}\text{Xe}$ ; deduced levels, J, $\pi$ , multipolarity. Comparison with shell-model and interacting-boson model-2 calculations. JOUR PRVCA 79 034315  |
|                   | 2009TA03 | NUCLEAR REACTIONS $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , E < 45 MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742   |
| $^{130}\text{Ba}$ | 2008SUZU | NUCLEAR REACTIONS $^{132}\text{Ba}(p, t)$ , E=25 MeV; measured Et, It; deduced J, $\pi$ , $\sigma(\theta, J, \pi)$ . REPT MLL 2007 Annual,P13,Suliman   |
|                   | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |
|                   | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
| $^{130}\text{Ce}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |
| $^{130}\text{Pr}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |
| $^{130}\text{Nd}$ | 2008STZX | NUCLEAR REACTIONS $^{58}\text{Ni}(^{76}\text{Kr}, \text{X})$ , E=4.34 MeV / nucleon; $^{130}\text{Nd}$ , $^{131}\text{Pm}$ , $^{129}\text{Pm}$ , $^{127}\text{Pm}$ , $^{128}\text{Nd}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.   |
| $^{130}\text{Pm}$ | 2008XU09 | CONF Cappadocia (Nuclear Physics and Astrophysics),P166,Stezowski<br>RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1  |

**A=131**

- |                   |          |  |
|-------------------|----------|--|
| $^{131}\text{Cd}$ | 2009AR04 | RADIOACTIVITY $^{127,129,131}\text{Cd}(\beta^-)$ ; measured $I\gamma$ , $E\gamma$ ; deduced $J\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437 |
|-------------------|----------|--|



## A=131 (continued)

- <sup>131</sup>In 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AR04 RADIOACTIVITY <sup>127,129,131</sup>Cd( $\beta^-$ ); measured I $\gamma$ , E $\gamma$ ; deduced J $\pi$ , level scheme. Comparison with calculations. JOUR APOBB 40 437
- <sup>131</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>131</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

A=131 (continued)

- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from U(p, X) $^{132}\text{Sb}$ , E=50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level, J,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- 2009WA02 NUCLEAR REACTIONS Yb, Lu, W, Os( $^{136}\text{Xe}$ , X) $^{121}\text{Sb}$  /  $^{123}\text{Sb}$ , E=6.0-6.2 MeV / nucleon; measured  $E\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives; deduced isomers.  $^{120}\text{Sn}(\text{}^7\text{Li}$ ,  $2n\alpha)$ , E=58 MeV;  $^{122}\text{Sn}(\text{}^7\text{Li}$ ,  $2n\alpha)$ , E=54 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives by decay curve analyses and centroid-shift methods, angular correlations, DCO, conversion coefficients.  $^{121,123}\text{Sb}$ ; deduced levels, J,  $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with  $^{120}\text{Sn}$  and  $^{122}\text{Sn}$  and with multistate mixing calculations.  $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79 024306
- $^{131}\text{Te}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{136}\text{Xe}$ , X) $^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$  /  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$  /  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$  /  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$  /  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$  /  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$  /  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$  /  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from U(p, X) $^{132}\text{Sb}$ , E=50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level, J,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- $^{131}\text{I}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{136}\text{Xe}$ , X) $^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$  /  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$  /  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$  /  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$  /  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$  /  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$  /  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$  /  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

A=131 (*continued*)

- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from  $\text{U}(\text{p}, \text{X})^{132}\text{Sb}$ ,  $E=50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level,  $J$ ,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- 2009WA11 NUCLEAR REACTIONS  $^{176}\text{Yb}$ ,  $^{176}\text{Lu}$ ,  $^{186}\text{W}$ ,  $^{192}\text{Os}({}^{136}\text{Xe}, \text{X})^{131}\text{I} / {}^{133}\text{I}$ ,  $E=820\text{-}840$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , and isomer half-lives.  $^{131,133}\text{I}$ ; deduced levels,  $J$ ,  $\pi$ , mixing ratios, conversion coefficients, and multipolarities.  $Z=50\text{-}53$ ,  $N=78\text{-}80$ ; systematics of  $B(E2)$  rates for isomer decays. Comparison with shell-model calculations. JOUR PRVCA 79 064311
- $^{131}\text{Xe}$  2008BE33 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{136}\text{Xe}, \text{X})^{132}\text{Cs} / {}^{133}\text{Cs} / {}^{134}\text{Cs} / {}^{135}\text{Cs} / {}^{136}\text{Cs} / {}^{129}\text{Xe} / {}^{130}\text{Xe} / {}^{131}\text{Xe} / {}^{132}\text{Xe} / {}^{133}\text{Xe} / {}^{134}\text{Xe} / {}^{135}\text{Xe} / {}^{127}\text{I} / {}^{128}\text{I} / {}^{129}\text{I} / {}^{130}\text{I} / {}^{131}\text{I} / {}^{132}\text{I} / {}^{133}\text{I} / {}^{134}\text{I} / {}^{135}\text{I} / {}^{136}\text{I} / {}^{125}\text{Te} / {}^{126}\text{Te} / {}^{127}\text{Te} / {}^{128}\text{Te} / {}^{129}\text{Te} / {}^{130}\text{Te} / {}^{131}\text{Te} / {}^{132}\text{Te} / {}^{133}\text{Te} / {}^{134}\text{Te} / {}^{135}\text{Te} / {}^{123}\text{Sb} / {}^{124}\text{Sb} / {}^{125}\text{Sb} / {}^{126}\text{Sb} / {}^{127}\text{Sb} / {}^{128}\text{Sb} / {}^{129}\text{Sb} / {}^{130}\text{Sb} / {}^{131}\text{Sb} / {}^{132}\text{Sb} / {}^{133}\text{Sb} / {}^{134}\text{Sb} / {}^{120}\text{Sn} / {}^{121}\text{Sn} / {}^{122}\text{Sn} / {}^{123}\text{Sn} / {}^{124}\text{Sn} / {}^{125}\text{Sn} / {}^{126}\text{Sn} / {}^{127}\text{Sn} / {}^{128}\text{Sn} / {}^{129}\text{Sn} / {}^{130}\text{Sn} / {}^{131}\text{Sn} / {}^{132}\text{Sn} / {}^{118}\text{In} / {}^{119}\text{In} / {}^{120}\text{In} / {}^{121}\text{In} / {}^{122}\text{In} / {}^{123}\text{In} / {}^{124}\text{In} / {}^{125}\text{In} / {}^{126}\text{In} / {}^{127}\text{In} / {}^{128}\text{In} / {}^{129}\text{In} / {}^{130}\text{In} / {}^{131}\text{In} / {}^{115}\text{Cd} / {}^{116}\text{Cd} / {}^{117}\text{Cd} / {}^{118}\text{Cd} / {}^{119}\text{Cd} / {}^{120}\text{Cd} / {}^{121}\text{Cd} / {}^{122}\text{Cd} / {}^{123}\text{Cd} / {}^{124}\text{Cd} / {}^{125}\text{Cd} / {}^{126}\text{Cd} / {}^{127}\text{Cd} / {}^{128}\text{Cd} / {}^{129}\text{Cd} / {}^{130}\text{Cd} / {}^{122}\text{Ag} / {}^{123}\text{Ag} / {}^{124}\text{Ag} / {}^{125}\text{Ag} / {}^{126}\text{Ag} / {}^{127}\text{Ag} / {}^{128}\text{Ag} / {}^{119}\text{Pd} / {}^{120}\text{Pd} / {}^{121}\text{Pd} / {}^{122}\text{Pd} / {}^{123}\text{Pd} / {}^{124}\text{Pd} / {}^{125}\text{Pd} / {}^{117}\text{Rh} / {}^{118}\text{Rh} / {}^{119}\text{Rh} / {}^{120}\text{Rh} / {}^{121}\text{Rh} / {}^{122}\text{Rh} / {}^{118}\text{Ru} / {}^{119}\text{Ru} / {}^{115}\text{Tc} / {}^{116}\text{Tc} / {}^{117}\text{Tc} / {}^{113}\text{Mo} / {}^{110}\text{Nb} / {}^{111}\text{Nb} / {}^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009SC19 ATOMIC MASSES  $^{128,129,130,131,132}\text{Xe}$ ,  $^{120,128,130}\text{Te}$ ,  $^{120}\text{Sn}$ ; measured mass differences of  $^{120}\text{Te}\text{-}^{120}\text{Sn}$ ,  $^{128}\text{Te}\text{-}^{128}\text{Xe}$ ,  $^{130}\text{Te}\text{-}^{130}\text{Xe}$  and  $^{132}\text{Xe}\text{-}^{129}\text{Xe}$  pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501
- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from  $\text{U}(\text{p}, \text{X})^{132}\text{Sb}$ ,  $E=50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level,  $J$ ,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- $^{131}\text{Cs}$  2009SI08 NUCLEAR REACTIONS  $^{122}\text{Sn}({}^{11}\text{B}, 4\text{n})$ ,  $E=60$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, angular correlations.  $^{129}\text{Cs}$ ; deduced levels,  $J$ ,  $\pi$ , bands, configurations. Comparison with tilted-axis cranking model calculations.  $^{117,121,123,125,127,129,131}\text{Cs}$ ; level systematics. JOUR PRVCA 79 044317
- 2009TA19 NUCLEAR REACTIONS  $^{131}\text{Xe}(\text{p}, \text{n})$ ,  $E < 35$  MeV; measured activation x-rays; deduced excitation functions for production of  $^{131}\text{Cs}$ . Comparison with ALICE-IPPE and EMPIRE-II codes. JOUR ARISE 67 1751
- 2010TA01 RADIOACTIVITY  $^{131}\text{Ba}(\text{EC})$  [from  $^{133}\text{Cs}(\text{p}, 3\text{n})$ ]; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- $^{131}\text{Ba}$  2008SUZT NUCLEAR REACTIONS  $^{132}\text{Ba}(\text{d}, \text{p})$ ,  $^{132}\text{Ba}(\text{d}, \text{t})$ ,  $E=24$  MeV; measured  $E\text{p}$ ,  $I\text{p}$ ,  $E\text{t}$ ,  $I\text{t}$ ; deduced  $\sigma(\theta, J, \pi)$ . REPT MLL 2007 Annual,P14,Suliman

KEYNUMBERS AND KEYWORDS

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**A=131 (continued)**

- 2009TA03 NUCLEAR REACTIONS Xe( $\alpha$ , X)<sup>129</sup>Ba / <sup>131</sup>Ba / <sup>133</sup>Ba / <sup>135</sup>Ba / <sup>137</sup>Ba / <sup>139</sup>Ba / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>139</sup>Cs, E < 45 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- 2010TA01 RADIOACTIVITY <sup>131</sup>Ba(EC) [from <sup>133</sup>Cs(p, 3n)]; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- <sup>131</sup>Pm 2008STZX NUCLEAR REACTIONS <sup>58</sup>Ni(<sup>76</sup>Kr, X), E=4.34 MeV / nucleon; <sup>130</sup>Nd, <sup>131</sup>Pm, <sup>129</sup>Pm, <sup>127</sup>Pm, <sup>128</sup>Nd; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. CONF Cappadocia (Nuclear Physics and Astrophysics),P166,Stezowski

**A=132**

- <sup>132</sup>Sn 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>132</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008VIZY NUCLEAR REACTIONS <sup>232</sup>Th, <sup>238</sup>U( $\gamma$ , f), E=8.5 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>84</sup>Br, <sup>132</sup>Sb, <sup>133</sup>Te, <sup>135</sup>Xe; deduced isomer yield ratios. Microtron, activation method. CONF Moscow,P134,Vishnevsky

## A=132 (continued)

- 2009VI03 NUCLEAR REACTIONS  $^{232}\text{Th}$ ,  $^{238}\text{U}(\gamma, \text{F})^{84}\text{Br} / ^{132}\text{Sb} / ^{133}\text{Te} / ^{135}\text{Xe}$ ,  $E < 8.5$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced mean angular momenta of fission fragments, isomeric yield ratios. JOUR BRSPÉ 73 733
- $^{132}\text{Te}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from  $\text{U}(\text{p}, \text{X})^{132}\text{Sb}$ ,  $E=50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level,  $J$ ,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- $^{132}\text{I}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from  $\text{U}(\text{p}, \text{X})^{132}\text{Sb}$ ,  $E=50$  MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level,  $J$ ,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- 2009TA23 NUCLEAR MOMENTS  $^{132}\text{I}$ ; measured magnetic moment of the first excited state using time-differential perturbed angular correlation technique. JOUR PRVCA 80 034304

KEYNUMBERS AND KEYWORDS

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A=132 (continued)

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| $^{132}\text{Xe}$ | 2008BE33 | <p>NUCLEAR REACTIONS <math>^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</math></p> |
|                   | 2009G009 | <p>NUCLEAR MOMENTS <math>^{140,142}\text{Xe}</math>, <math>^{146}\text{Ba}</math>, <math>^{146,148}\text{Ce}</math>; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <math>^{130,132,134,136,138,140,142}\text{Xe}</math>, <math>^{130,132,134,136,138,140,142,144,146}\text{Ba}</math>, <math>^{140,142,146,148}\text{Ce}</math>, <math>^{148,150}\text{Nd}</math>, <math>^{152,154}\text{Sm}</math>, <math>^{154,156,158,160}\text{Gd}</math>, <math>^{160,162,164}\text{Dy}</math>; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <math>^{146}\text{Ba}</math>, <math>^{146,148}\text{Ce}</math>; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316</p>   |
|                   | 2009RE03 | <p>ATOMIC MASSES <math>^{84,86}\text{Kr}</math>, <math>^{129,132}\text{Xe}</math>; measured atomic masses using a cryogenic penning trap. JOUR PLRAA 79 012506</p>   |
|                   | 2009SC19 | <p>ATOMIC MASSES <math>^{128,129,130,131,132}\text{Xe}</math>, <math>^{120,128,130}\text{Te}</math>, <math>^{120}\text{Sn}</math>; measured mass differences of <math>^{120}\text{Te}</math>-<math>^{120}\text{Sn}</math>, <math>^{128}\text{Te}</math>-<math>^{128}\text{Xe}</math>, <math>^{130}\text{Te}</math>-<math>^{130}\text{Xe}</math> and <math>^{132}\text{Xe}</math>-<math>^{129}\text{Xe}</math> pairs using Penning Trap mass spectrometer. JOUR PRVCA 80 025501</p>   |
|                   | 2009TA23 | <p>RADIOACTIVITY <math>^{132}\text{Te}(\beta^-)</math>[from U(p, X)<math>^{132}\text{Sb}</math>, E=50 MeV]; measured <math>E_\gamma</math>, <math>I_\gamma</math>, half-life. <math>^{131}\text{Sb}</math>, <math>^{131}\text{Te}</math>, <math>^{131,133}\text{I}</math>, <math>^{131,132}\text{I}(\beta^-)</math>; measured <math>E_\gamma</math>. <math>^{132}\text{I}</math>; deduced level, J, <math>\pi</math> and magnetic moment. JOUR PRVCA 80 034304</p>   |
| $^{132}\text{Cs}$ | 2008BE33 | <p>NUCLEAR REACTIONS <math>^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}, E=1 GeV / nucleon; measured <math>\sigma</math>. JOUR PRVCA 78 054605</math></p> |

KEYNUMBERS AND KEYWORDS

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**A=132 (continued)**

- 2009TA03 NUCLEAR REACTIONS Xe( $\alpha$ , X)<sup>129</sup>Ba / <sup>131</sup>Ba / <sup>133</sup>Ba / <sup>135</sup>Ba / <sup>137</sup>Ba / <sup>139</sup>Ba / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>139</sup>Cs, E < 45 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- 2010TA01 NUCLEAR REACTIONS <sup>133</sup>Cs(p, x)<sup>128</sup>Ba / <sup>129</sup>Ba / <sup>133</sup>Ba / <sup>127</sup>Cs / <sup>129</sup>Cs / <sup>132</sup>Cs / <sup>125</sup>Xe / <sup>127</sup>Xe / <sup>129</sup>Xe, Ti(p, x)<sup>48</sup>V, Al(p, x)<sup>24</sup>Na, E < 70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47
- <sup>132</sup>Ba 2009G009 NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009SU18 NUCLEAR REACTIONS <sup>132</sup>Ba(polarized d, p), E=24 MeV; measured  $\sigma(\theta)$ , Ay; comparison with continuum discretized coupled channel predictions. DWBA analysis. <sup>132</sup>Ba; deduced levels, J,  $\pi$ , branching ratios, spectroscopic factor, configurations, B(M1), B(E2); comparison with evaluated and other data and the interacting Boson-Fermion model. JOUR ZAANE 41 299
- <sup>132</sup>La 2007TIZY NUCLEAR REACTIONS <sup>100</sup>Mo(<sup>36</sup>S, p3N), E=160 MeV; <sup>132</sup>La; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma\gamma$ -coin.; deduced level scheme. REPT ATOMKI 2007 Annual,P30,Timar

**A=133**

- <sup>133</sup>Sb 2008BE33 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009UR01 NUCLEAR REACTIONS <sup>235</sup>U(n, X)<sup>133</sup>Sb, E=thermal; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives. <sup>133</sup>Sb; deduced levels, J,  $\pi$ , configurations. JOUR PRVCA 79 037304

## A=133 (continued)

- 2009WA02 NUCLEAR REACTIONS Yb, Lu, W, Os( $^{136}\text{Xe}$ , X) $^{121}\text{Sb}$  /  $^{123}\text{Sb}$ ,  
E=6.0-6.2 MeV / nucleon; measured  $E\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(t)$ , half-lives;  
deduced isomers.  $^{120}\text{Sn}(^7\text{Li}, 2n\alpha)$ , E=58 MeV;  $^{122}\text{Sn}(^7\text{Li}, 2n\alpha)$ , E=54  
MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, conversion electron spectra, half-lives  
by decay curve analyses and centroid-shift methods, angular  
correlations, DCO, conversion coefficients.  $^{121,123}\text{Sb}$ ; deduced levels, J,  
 $\pi$ , multipolarity, mixing ratios, configurations. Comparisons with  $^{120}\text{Sn}$   
and  $^{122}\text{Sn}$  and with multistate mixing calculations.  
 $^{113,115,117,119,121,123,125,127,129,131,133}\text{Sb}$ ; systematics. JOUR PRVCA 79  
024306
- $^{133}\text{Te}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$   
/  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$   
/  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$   
/  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$   
/  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$   
/  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$   
/  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$   
/  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  
 $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$   
/  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  
 $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  
 $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  
 $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  
 $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ , E=1 GeV /  
nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008VIZY NUCLEAR REACTIONS  $^{232}\text{Th}$ ,  $^{238}\text{U}(\gamma, f)$ , E=8.5 MeV; measured  
 $E\gamma$ ,  $I\gamma$ ;  $^{84}\text{Br}$ ,  $^{132}\text{Sb}$ ,  $^{133}\text{Te}$ ,  $^{135}\text{Xe}$ ; deduced isomer yield ratios.  
Microtron, activation method. CONF Moscow,P134,Vishnevsky
- 2009VI03 NUCLEAR REACTIONS  $^{232}\text{Th}$ ,  $^{238}\text{U}(\gamma, F)^{84}\text{Br}$  /  $^{132}\text{Sb}$  /  $^{133}\text{Te}$  /  
 $^{135}\text{Xe}$ , E<8.5 MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced mean angular momenta  
of fission fragments, isomeric yield ratios. JOUR BRSPE 73 733
- 2009VIZY NUCLEAR REACTIONS  $^{239}\text{Pu}$ ,  $^{241}\text{Am}(\gamma, f)$ , E(end point)=10, 17  
MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{84}\text{Br}$ ,  $^{133}\text{Te}$ ,  $^{135}\text{Xe}$ ; deduced isomeric yield  
ratios. Activation method CONF Cheboksary,P138,Vishnevsky
- $^{133}\text{I}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs}$  /  $^{133}\text{Cs}$  /  $^{134}\text{Cs}$  /  $^{135}\text{Cs}$   
/  $^{136}\text{Cs}$  /  $^{129}\text{Xe}$  /  $^{130}\text{Xe}$  /  $^{131}\text{Xe}$  /  $^{132}\text{Xe}$  /  $^{133}\text{Xe}$  /  $^{134}\text{Xe}$  /  $^{135}\text{Xe}$  /  $^{127}\text{I}$   
/  $^{128}\text{I}$  /  $^{129}\text{I}$  /  $^{130}\text{I}$  /  $^{131}\text{I}$  /  $^{132}\text{I}$  /  $^{133}\text{I}$  /  $^{134}\text{I}$  /  $^{135}\text{I}$  /  $^{136}\text{I}$  /  $^{125}\text{Te}$  /  $^{126}\text{Te}$   
/  $^{127}\text{Te}$  /  $^{128}\text{Te}$  /  $^{129}\text{Te}$  /  $^{130}\text{Te}$  /  $^{131}\text{Te}$  /  $^{132}\text{Te}$  /  $^{133}\text{Te}$  /  $^{134}\text{Te}$  /  $^{135}\text{Te}$   
/  $^{123}\text{Sb}$  /  $^{124}\text{Sb}$  /  $^{125}\text{Sb}$  /  $^{126}\text{Sb}$  /  $^{127}\text{Sb}$  /  $^{128}\text{Sb}$  /  $^{129}\text{Sb}$  /  $^{130}\text{Sb}$  /  $^{131}\text{Sb}$   
/  $^{132}\text{Sb}$  /  $^{133}\text{Sb}$  /  $^{134}\text{Sb}$  /  $^{120}\text{Sn}$  /  $^{121}\text{Sn}$  /  $^{122}\text{Sn}$  /  $^{123}\text{Sn}$  /  $^{124}\text{Sn}$  /  $^{125}\text{Sn}$   
/  $^{126}\text{Sn}$  /  $^{127}\text{Sn}$  /  $^{128}\text{Sn}$  /  $^{129}\text{Sn}$  /  $^{130}\text{Sn}$  /  $^{131}\text{Sn}$  /  $^{132}\text{Sn}$  /  $^{118}\text{In}$  /  $^{119}\text{In}$   
/  $^{120}\text{In}$  /  $^{121}\text{In}$  /  $^{122}\text{In}$  /  $^{123}\text{In}$  /  $^{124}\text{In}$  /  $^{125}\text{In}$  /  $^{126}\text{In}$  /  $^{127}\text{In}$  /  $^{128}\text{In}$  /  
 $^{129}\text{In}$  /  $^{130}\text{In}$  /  $^{131}\text{In}$  /  $^{115}\text{Cd}$  /  $^{116}\text{Cd}$  /  $^{117}\text{Cd}$  /  $^{118}\text{Cd}$  /  $^{119}\text{Cd}$  /  $^{120}\text{Cd}$   
/  $^{121}\text{Cd}$  /  $^{122}\text{Cd}$  /  $^{123}\text{Cd}$  /  $^{124}\text{Cd}$  /  $^{125}\text{Cd}$  /  $^{126}\text{Cd}$  /  $^{127}\text{Cd}$  /  $^{128}\text{Cd}$  /  
 $^{129}\text{Cd}$  /  $^{130}\text{Cd}$  /  $^{122}\text{Ag}$  /  $^{123}\text{Ag}$  /  $^{124}\text{Ag}$  /  $^{125}\text{Ag}$  /  $^{126}\text{Ag}$  /  $^{127}\text{Ag}$  /  
 $^{128}\text{Ag}$  /  $^{119}\text{Pd}$  /  $^{120}\text{Pd}$  /  $^{121}\text{Pd}$  /  $^{122}\text{Pd}$  /  $^{123}\text{Pd}$  /  $^{124}\text{Pd}$  /  $^{125}\text{Pd}$  /  
 $^{117}\text{Rh}$  /  $^{118}\text{Rh}$  /  $^{119}\text{Rh}$  /  $^{120}\text{Rh}$  /  $^{121}\text{Rh}$  /  $^{122}\text{Rh}$  /  $^{118}\text{Ru}$  /  $^{119}\text{Ru}$  /  
 $^{115}\text{Tc}$  /  $^{116}\text{Tc}$  /  $^{117}\text{Tc}$  /  $^{113}\text{Mo}$  /  $^{110}\text{Nb}$  /  $^{111}\text{Nb}$  /  $^{108}\text{Zr}$ , E=1 GeV /  
nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605



KEYNUMBERS AND KEYWORDS

A=133 (continued)

- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from U(p, X) $^{132}\text{Sb}$ , E=50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level, J,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- 2009WA11 NUCLEAR REACTIONS  $^{176}\text{Yb}$ ,  $^{176}\text{Lu}$ ,  $^{186}\text{W}$ ,  $^{192}\text{Os}({}^{136}\text{Xe}, \text{X})^{131}\text{I} / {}^{133}\text{I}$ , E=820-840 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , and isomer half-lives.  $^{131,133}\text{I}$ ; deduced levels, J,  $\pi$ , mixing ratios, conversion coefficients, and multipolarities. Z=50-53, N=78-80; systematics of B(E2) rates for isomer decays. Comparison with shell-model calculations. JOUR PRVCA 79 064311
- $^{133}\text{Xe}$  2008BE33 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{136}\text{Xe}, \text{X})^{132}\text{Cs} / {}^{133}\text{Cs} / {}^{134}\text{Cs} / {}^{135}\text{Cs} / {}^{136}\text{Cs} / {}^{129}\text{Xe} / {}^{130}\text{Xe} / {}^{131}\text{Xe} / {}^{132}\text{Xe} / {}^{133}\text{Xe} / {}^{134}\text{Xe} / {}^{135}\text{Xe} / {}^{127}\text{I} / {}^{128}\text{I} / {}^{129}\text{I} / {}^{130}\text{I} / {}^{131}\text{I} / {}^{132}\text{I} / {}^{133}\text{I} / {}^{134}\text{I} / {}^{135}\text{I} / {}^{136}\text{I} / {}^{125}\text{Te} / {}^{126}\text{Te} / {}^{127}\text{Te} / {}^{128}\text{Te} / {}^{129}\text{Te} / {}^{130}\text{Te} / {}^{131}\text{Te} / {}^{132}\text{Te} / {}^{133}\text{Te} / {}^{134}\text{Te} / {}^{135}\text{Te} / {}^{123}\text{Sb} / {}^{124}\text{Sb} / {}^{125}\text{Sb} / {}^{126}\text{Sb} / {}^{127}\text{Sb} / {}^{128}\text{Sb} / {}^{129}\text{Sb} / {}^{130}\text{Sb} / {}^{131}\text{Sb} / {}^{132}\text{Sb} / {}^{133}\text{Sb} / {}^{134}\text{Sb} / {}^{120}\text{Sn} / {}^{121}\text{Sn} / {}^{122}\text{Sn} / {}^{123}\text{Sn} / {}^{124}\text{Sn} / {}^{125}\text{Sn} / {}^{126}\text{Sn} / {}^{127}\text{Sn} / {}^{128}\text{Sn} / {}^{129}\text{Sn} / {}^{130}\text{Sn} / {}^{131}\text{Sn} / {}^{132}\text{Sn} / {}^{118}\text{In} / {}^{119}\text{In} / {}^{120}\text{In} / {}^{121}\text{In} / {}^{122}\text{In} / {}^{123}\text{In} / {}^{124}\text{In} / {}^{125}\text{In} / {}^{126}\text{In} / {}^{127}\text{In} / {}^{128}\text{In} / {}^{129}\text{In} / {}^{130}\text{In} / {}^{131}\text{In} / {}^{115}\text{Cd} / {}^{116}\text{Cd} / {}^{117}\text{Cd} / {}^{118}\text{Cd} / {}^{119}\text{Cd} / {}^{120}\text{Cd} / {}^{121}\text{Cd} / {}^{122}\text{Cd} / {}^{123}\text{Cd} / {}^{124}\text{Cd} / {}^{125}\text{Cd} / {}^{126}\text{Cd} / {}^{127}\text{Cd} / {}^{128}\text{Cd} / {}^{129}\text{Cd} / {}^{130}\text{Cd} / {}^{122}\text{Ag} / {}^{123}\text{Ag} / {}^{124}\text{Ag} / {}^{125}\text{Ag} / {}^{126}\text{Ag} / {}^{127}\text{Ag} / {}^{128}\text{Ag} / {}^{119}\text{Pd} / {}^{120}\text{Pd} / {}^{121}\text{Pd} / {}^{122}\text{Pd} / {}^{123}\text{Pd} / {}^{124}\text{Pd} / {}^{125}\text{Pd} / {}^{117}\text{Rh} / {}^{118}\text{Rh} / {}^{119}\text{Rh} / {}^{120}\text{Rh} / {}^{121}\text{Rh} / {}^{122}\text{Rh} / {}^{118}\text{Ru} / {}^{119}\text{Ru} / {}^{115}\text{Tc} / {}^{116}\text{Tc} / {}^{117}\text{Tc} / {}^{113}\text{Mo} / {}^{110}\text{Nb} / {}^{111}\text{Nb} / {}^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009TA23 RADIOACTIVITY  $^{132}\text{Te}(\beta^-)$ [from U(p, X) $^{132}\text{Sb}$ , E=50 MeV]; measured  $E\gamma$ ,  $I\gamma$ , half-life.  $^{131}\text{Sb}$ ,  $^{131}\text{Te}$ ,  $^{131,133}\text{I}$ ,  $^{131,132}\text{I}(\beta^-)$ ; measured  $E\gamma$ .  $^{132}\text{I}$ ; deduced level, J,  $\pi$  and magnetic moment. JOUR PRVCA 80 034304
- $^{133}\text{Cs}$  2008BE33 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{136}\text{Xe}, \text{X})^{132}\text{Cs} / {}^{133}\text{Cs} / {}^{134}\text{Cs} / {}^{135}\text{Cs} / {}^{136}\text{Cs} / {}^{129}\text{Xe} / {}^{130}\text{Xe} / {}^{131}\text{Xe} / {}^{132}\text{Xe} / {}^{133}\text{Xe} / {}^{134}\text{Xe} / {}^{135}\text{Xe} / {}^{127}\text{I} / {}^{128}\text{I} / {}^{129}\text{I} / {}^{130}\text{I} / {}^{131}\text{I} / {}^{132}\text{I} / {}^{133}\text{I} / {}^{134}\text{I} / {}^{135}\text{I} / {}^{136}\text{I} / {}^{125}\text{Te} / {}^{126}\text{Te} / {}^{127}\text{Te} / {}^{128}\text{Te} / {}^{129}\text{Te} / {}^{130}\text{Te} / {}^{131}\text{Te} / {}^{132}\text{Te} / {}^{133}\text{Te} / {}^{134}\text{Te} / {}^{135}\text{Te} / {}^{123}\text{Sb} / {}^{124}\text{Sb} / {}^{125}\text{Sb} / {}^{126}\text{Sb} / {}^{127}\text{Sb} / {}^{128}\text{Sb} / {}^{129}\text{Sb} / {}^{130}\text{Sb} / {}^{131}\text{Sb} / {}^{132}\text{Sb} / {}^{133}\text{Sb} / {}^{134}\text{Sb} / {}^{120}\text{Sn} / {}^{121}\text{Sn} / {}^{122}\text{Sn} / {}^{123}\text{Sn} / {}^{124}\text{Sn} / {}^{125}\text{Sn} / {}^{126}\text{Sn} / {}^{127}\text{Sn} / {}^{128}\text{Sn} / {}^{129}\text{Sn} / {}^{130}\text{Sn} / {}^{131}\text{Sn} / {}^{132}\text{Sn} / {}^{118}\text{In} / {}^{119}\text{In} / {}^{120}\text{In} / {}^{121}\text{In} / {}^{122}\text{In} / {}^{123}\text{In} / {}^{124}\text{In} / {}^{125}\text{In} / {}^{126}\text{In} / {}^{127}\text{In} / {}^{128}\text{In} / {}^{129}\text{In} / {}^{130}\text{In} / {}^{131}\text{In} / {}^{115}\text{Cd} / {}^{116}\text{Cd} / {}^{117}\text{Cd} / {}^{118}\text{Cd} / {}^{119}\text{Cd} / {}^{120}\text{Cd} / {}^{121}\text{Cd} / {}^{122}\text{Cd} / {}^{123}\text{Cd} / {}^{124}\text{Cd} / {}^{125}\text{Cd} / {}^{126}\text{Cd} / {}^{127}\text{Cd} / {}^{128}\text{Cd} / {}^{129}\text{Cd} / {}^{130}\text{Cd} / {}^{122}\text{Ag} / {}^{123}\text{Ag} / {}^{124}\text{Ag} / {}^{125}\text{Ag} / {}^{126}\text{Ag} / {}^{127}\text{Ag} / {}^{128}\text{Ag} / {}^{119}\text{Pd} / {}^{120}\text{Pd} / {}^{121}\text{Pd} / {}^{122}\text{Pd} / {}^{123}\text{Pd} / {}^{124}\text{Pd} / {}^{125}\text{Pd} / {}^{117}\text{Rh} / {}^{118}\text{Rh} / {}^{119}\text{Rh} / {}^{120}\text{Rh} / {}^{121}\text{Rh} / {}^{122}\text{Rh} / {}^{118}\text{Ru} / {}^{119}\text{Ru} / {}^{115}\text{Tc} / {}^{116}\text{Tc} / {}^{117}\text{Tc} / {}^{113}\text{Mo} / {}^{110}\text{Nb} / {}^{111}\text{Nb} / {}^{108}\text{Zr}$ , E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009SU03 NUCLEAR REACTIONS  $^{133}\text{Cs}(e, e')$ , E=120 MeV; measured cross section and angular distributions. JOUR PRLTA 102 102501
- $^{133}\text{Ba}$  2008SUZT NUCLEAR REACTIONS  $^{132}\text{Ba}(d, p)$ ,  $^{132}\text{Ba}(d, t)$ , E=24 MeV; measured  $E_p$ ,  $I_p$ ,  $E_t$ ,  $I_t$ ; deduced  $\sigma(\theta, J, \pi)$ . REPT MLL 2007 Annual,P14,Suliman

**A=133** (*continued*)

- 2009SU18 NUCLEAR REACTIONS  $^{132}\text{Ba}(\text{polarized d, p})$ ,  $E=24$  MeV; measured  $\sigma(\theta)$ ,  $A\gamma$ ; comparison with continuum discretized coupled channel predictions. DWBA analysis.  $^{132}\text{Ba}$ ; deduced levels,  $J$ ,  $\pi$ , branching ratios, spectroscopic factor, configurations,  $B(M1)$ ,  $B(E2)$ ; comparison with evaluated and other data and the interacting Boson-Fermion model. JOUR ZAANE 41 299
- 2009TA03 NUCLEAR REACTIONS  $\text{Xe}(\alpha, X)^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ ,  $E < 45$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- 2010TA01 NUCLEAR REACTIONS  $^{133}\text{Cs}(\text{p, x})^{128}\text{Ba} / ^{129}\text{Ba} / ^{133}\text{Ba} / ^{127}\text{Cs} / ^{129}\text{Cs} / ^{132}\text{Cs} / ^{125}\text{Xe} / ^{127}\text{Xe} / ^{129}\text{Xe}$ ,  $\text{Ti}(\text{p, x})^{48}\text{V}$ ,  $\text{Al}(\text{p, x})^{24}\text{Na}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE-IPPE, EMPIRE-II and TALYS computer codes. JOUR ARISE 68 47

**A=134**

- $^{134}\text{Sb}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe, X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- $^{134}\text{Te}$  2008BE33 NUCLEAR REACTIONS  $^9\text{Be}(^{136}\text{Xe, X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ ,  $E=1$  GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605

## A=134 (continued)

- <sup>134</sup>I      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009LI25      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ . <sup>134</sup>I; deduced levels, J,  $\pi$ , yrast states. <sup>111,112,113</sup>Rh; measured E $\gamma$ ,  $\gamma\gamma$ -coin. Discussed systematics of yrast levels in Iodine nuclides. JOUR PRVCA 79 067303
- 2009MA23      NUCLEAR REACTIONS <sup>96</sup>Zr(<sup>124</sup>Sn, X), <sup>136</sup>Xe(<sup>208</sup>Pb, X), E=500, 930 MeV; <sup>136</sup>Cs, <sup>134</sup>I; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. JOUR APOBB 40 489
- <sup>134</sup>Xe      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009AH01      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 using DSA technique and the Gammasphere array. <sup>134</sup>Xe; deduced levels, J,  $\pi$ ,  $\delta$ , B(E2), B(M1), related properties. Systematics of N=80, 82 isotones discussed. JOUR PYLBB 679 19
- 2009G009      NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316

## A=134 (continued)

- <sup>134</sup>Cs      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2009TA03      NUCLEAR REACTIONS Xe( $\alpha$ , X)<sup>129</sup>Ba / <sup>131</sup>Ba / <sup>133</sup>Ba / <sup>135</sup>Ba / <sup>137</sup>Ba / <sup>139</sup>Ba / <sup>129</sup>Cs / <sup>130</sup>Cs / <sup>132</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>139</sup>Cs, E < 45 MeV; measured E $\gamma$ , I $\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- <sup>134</sup>Ba      2009G009      NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- <sup>134</sup>Pm      2009CU02      NUCLEAR REACTIONS <sup>92</sup>Mo(<sup>54</sup>Fe, n3p2 $\alpha$ ), E=305, 315 MeV; measured E $\gamma$ , I $\gamma$ , (recoil) $\gamma$ -,  $\gamma\gamma$ -coin, half-life, prompt and delayed  $\gamma$  rays. <sup>134</sup>Pm; deduced levels, J,  $\pi$ , isomer, configurations. Recoil-isomer tagging method. E1 transition strength systematics of even-A (A=126-148) Te, Pm, Eu, Tb, Ho and Dy nuclei. JOUR PRVCA 80 024303

## A=135

- <sup>135</sup>Te      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>135</sup>I      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>135</sup>Xe      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- 2008VIZY      NUCLEAR REACTIONS <sup>232</sup>Th, <sup>238</sup>U( $\gamma$ , f), E=8.5 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>84</sup>Br, <sup>132</sup>Sb, <sup>133</sup>Te, <sup>135</sup>Xe; deduced isomer yield ratios. Microtron, activation method. CONF Moscow,P134,Vishnevsky

KEYNUMBERS AND KEYWORDS

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**A=135 (continued)**

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| 2009VI03          | NUCLEAR REACTIONS $^{232}\text{Th}$ , $^{238}\text{U}(\gamma, \text{F})^{84}\text{Br} / ^{132}\text{Sb} / ^{133}\text{Te} / ^{135}\text{Xe}$ , $E < 8.5$ MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced mean angular momenta of fission fragments, isomeric yield ratios. JOUR BRSPE 73 733   |
| 2009VIZY          | NUCLEAR REACTIONS $^{239}\text{Pu}$ , $^{241}\text{Am}(\gamma, \text{f})$ , $E(\text{end point})=10, 17$ MeV; measured $E_\gamma$ , $I_\gamma$ . $^{84}\text{Br}$ , $^{133}\text{Te}$ , $^{135}\text{Xe}$ ; deduced isomeric yield ratios. Activation method CONF Cheboksary, P138, Vishnevsky   |
| $^{135}\text{Cs}$ | 2008BE33 NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , $E=1$ GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
| 2009TA03          | NUCLEAR REACTIONS $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , $E < 45$ MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742  |
| $^{135}\text{Ba}$ | 2009TA03 NUCLEAR REACTIONS $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , $E < 45$ MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742   |
| $^{135}\text{La}$ | 2009HE03 NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , $E < 40$ MeV; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , $E < 40$ MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |
| $^{135}\text{Ce}$ | 2009HE03 NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , $E < 40$ MeV; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , $E < 40$ MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |

## A=136

- <sup>136</sup>I      2008BE33      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>136</sup>Xe, X)<sup>132</sup>Cs / <sup>133</sup>Cs / <sup>134</sup>Cs / <sup>135</sup>Cs / <sup>136</sup>Cs / <sup>129</sup>Xe / <sup>130</sup>Xe / <sup>131</sup>Xe / <sup>132</sup>Xe / <sup>133</sup>Xe / <sup>134</sup>Xe / <sup>135</sup>Xe / <sup>127</sup>I / <sup>128</sup>I / <sup>129</sup>I / <sup>130</sup>I / <sup>131</sup>I / <sup>132</sup>I / <sup>133</sup>I / <sup>134</sup>I / <sup>135</sup>I / <sup>136</sup>I / <sup>125</sup>Te / <sup>126</sup>Te / <sup>127</sup>Te / <sup>128</sup>Te / <sup>129</sup>Te / <sup>130</sup>Te / <sup>131</sup>Te / <sup>132</sup>Te / <sup>133</sup>Te / <sup>134</sup>Te / <sup>135</sup>Te / <sup>123</sup>Sb / <sup>124</sup>Sb / <sup>125</sup>Sb / <sup>126</sup>Sb / <sup>127</sup>Sb / <sup>128</sup>Sb / <sup>129</sup>Sb / <sup>130</sup>Sb / <sup>131</sup>Sb / <sup>132</sup>Sb / <sup>133</sup>Sb / <sup>134</sup>Sb / <sup>120</sup>Sn / <sup>121</sup>Sn / <sup>122</sup>Sn / <sup>123</sup>Sn / <sup>124</sup>Sn / <sup>125</sup>Sn / <sup>126</sup>Sn / <sup>127</sup>Sn / <sup>128</sup>Sn / <sup>129</sup>Sn / <sup>130</sup>Sn / <sup>131</sup>Sn / <sup>132</sup>Sn / <sup>118</sup>In / <sup>119</sup>In / <sup>120</sup>In / <sup>121</sup>In / <sup>122</sup>In / <sup>123</sup>In / <sup>124</sup>In / <sup>125</sup>In / <sup>126</sup>In / <sup>127</sup>In / <sup>128</sup>In / <sup>129</sup>In / <sup>130</sup>In / <sup>131</sup>In / <sup>115</sup>Cd / <sup>116</sup>Cd / <sup>117</sup>Cd / <sup>118</sup>Cd / <sup>119</sup>Cd / <sup>120</sup>Cd / <sup>121</sup>Cd / <sup>122</sup>Cd / <sup>123</sup>Cd / <sup>124</sup>Cd / <sup>125</sup>Cd / <sup>126</sup>Cd / <sup>127</sup>Cd / <sup>128</sup>Cd / <sup>129</sup>Cd / <sup>130</sup>Cd / <sup>122</sup>Ag / <sup>123</sup>Ag / <sup>124</sup>Ag / <sup>125</sup>Ag / <sup>126</sup>Ag / <sup>127</sup>Ag / <sup>128</sup>Ag / <sup>119</sup>Pd / <sup>120</sup>Pd / <sup>121</sup>Pd / <sup>122</sup>Pd / <sup>123</sup>Pd / <sup>124</sup>Pd / <sup>125</sup>Pd / <sup>117</sup>Rh / <sup>118</sup>Rh / <sup>119</sup>Rh / <sup>120</sup>Rh / <sup>121</sup>Rh / <sup>122</sup>Rh / <sup>118</sup>Ru / <sup>119</sup>Ru / <sup>115</sup>Tc / <sup>116</sup>Tc / <sup>117</sup>Tc / <sup>113</sup>Mo / <sup>110</sup>Nb / <sup>111</sup>Nb / <sup>108</sup>Zr, E=1 GeV / nucleon; measured  $\sigma$ . JOUR PRVCA 78 054605
- <sup>136</sup>Xe      2009G009      NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009G009      RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , (particle) $\gamma$ -,  $\gamma\gamma$ -coin, attenuated  $\gamma\gamma(\theta)$ . <sup>136,140,142</sup>Xe, <sup>142,146</sup>Ba, <sup>146,148</sup>Ce; deduced levels, J, g factors. JOUR PRVCA 79 034316
- 2009NE11      ATOMIC MASSES <sup>136,137,138,139,140,141,142,143,144,145,146</sup>Xe; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323

KEYNUMBERS AND KEYWORDS

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**A=136 (continued)**

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| $^{136}\text{Cs}$ | 2008BE33 | NUCLEAR REACTIONS $^9\text{Be}(^{136}\text{Xe}, \text{X})^{132}\text{Cs} / ^{133}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{129}\text{Xe} / ^{130}\text{Xe} / ^{131}\text{Xe} / ^{132}\text{Xe} / ^{133}\text{Xe} / ^{134}\text{Xe} / ^{135}\text{Xe} / ^{127}\text{I} / ^{128}\text{I} / ^{129}\text{I} / ^{130}\text{I} / ^{131}\text{I} / ^{132}\text{I} / ^{133}\text{I} / ^{134}\text{I} / ^{135}\text{I} / ^{136}\text{I} / ^{125}\text{Te} / ^{126}\text{Te} / ^{127}\text{Te} / ^{128}\text{Te} / ^{129}\text{Te} / ^{130}\text{Te} / ^{131}\text{Te} / ^{132}\text{Te} / ^{133}\text{Te} / ^{134}\text{Te} / ^{135}\text{Te} / ^{123}\text{Sb} / ^{124}\text{Sb} / ^{125}\text{Sb} / ^{126}\text{Sb} / ^{127}\text{Sb} / ^{128}\text{Sb} / ^{129}\text{Sb} / ^{130}\text{Sb} / ^{131}\text{Sb} / ^{132}\text{Sb} / ^{133}\text{Sb} / ^{134}\text{Sb} / ^{120}\text{Sn} / ^{121}\text{Sn} / ^{122}\text{Sn} / ^{123}\text{Sn} / ^{124}\text{Sn} / ^{125}\text{Sn} / ^{126}\text{Sn} / ^{127}\text{Sn} / ^{128}\text{Sn} / ^{129}\text{Sn} / ^{130}\text{Sn} / ^{131}\text{Sn} / ^{132}\text{Sn} / ^{118}\text{In} / ^{119}\text{In} / ^{120}\text{In} / ^{121}\text{In} / ^{122}\text{In} / ^{123}\text{In} / ^{124}\text{In} / ^{125}\text{In} / ^{126}\text{In} / ^{127}\text{In} / ^{128}\text{In} / ^{129}\text{In} / ^{130}\text{In} / ^{131}\text{In} / ^{115}\text{Cd} / ^{116}\text{Cd} / ^{117}\text{Cd} / ^{118}\text{Cd} / ^{119}\text{Cd} / ^{120}\text{Cd} / ^{121}\text{Cd} / ^{122}\text{Cd} / ^{123}\text{Cd} / ^{124}\text{Cd} / ^{125}\text{Cd} / ^{126}\text{Cd} / ^{127}\text{Cd} / ^{128}\text{Cd} / ^{129}\text{Cd} / ^{130}\text{Cd} / ^{122}\text{Ag} / ^{123}\text{Ag} / ^{124}\text{Ag} / ^{125}\text{Ag} / ^{126}\text{Ag} / ^{127}\text{Ag} / ^{128}\text{Ag} / ^{119}\text{Pd} / ^{120}\text{Pd} / ^{121}\text{Pd} / ^{122}\text{Pd} / ^{123}\text{Pd} / ^{124}\text{Pd} / ^{125}\text{Pd} / ^{117}\text{Rh} / ^{118}\text{Rh} / ^{119}\text{Rh} / ^{120}\text{Rh} / ^{121}\text{Rh} / ^{122}\text{Rh} / ^{118}\text{Ru} / ^{119}\text{Ru} / ^{115}\text{Tc} / ^{116}\text{Tc} / ^{117}\text{Tc} / ^{113}\text{Mo} / ^{110}\text{Nb} / ^{111}\text{Nb} / ^{108}\text{Zr}$ , E=1 GeV / nucleon; measured $\sigma$ . JOUR PRVCA 78 054605 |
|                   | 2008WIZY | RADIOACTIVITY $^{136}\text{Cs}(\text{IT})$ ; measured $I_\gamma$ , $E_\gamma$ , $I(\text{ce})$ , $E(\text{ce})$ from isomeric 518 keV state; deduced $T_{1/2}$ , $B(\text{E}3)$ , conversion coefficients. REPT MLL 2007 Annual,P15,Wimmer  |
|                   | 2009MA23 | NUCLEAR REACTIONS $^{96}\text{Zr}(^{124}\text{Sn}, \text{X})$ , $^{136}\text{Xe}(^{208}\text{Pb}, \text{X})$ , E=500, 930 MeV; $^{136}\text{Cs}$ , $^{134}\text{I}$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin. JOUR APOBB 40 489  |
|                   | 2009TA03 | NUCLEAR REACTIONS $\text{Xe}(\alpha, \text{X})^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , E < 45 MeV; measured $E_\gamma$ , $I_\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742   |
| $^{136}\text{Ba}$ | 2009BE20 | RADIOACTIVITY $^{136,138}\text{Ce}(2\beta^+)$ , (2EC); measured $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ lower limits. $\text{CeCl}_3$ scintillator. JOUR NUPAB 824 101  |
|                   | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316   |
| $^{136}\text{Ce}$ | 2009BE20 | RADIOACTIVITY $^{136,138}\text{Ce}(2\beta^+)$ , (2EC); measured $E_\gamma$ , $I_\gamma$ ; deduced $T_{1/2}$ lower limits. $\text{CeCl}_3$ scintillator. JOUR NUPAB 824 101  |

**A=137**

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| $^{137}\text{I}$ | 2009LI42 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, and $\gamma\gamma(\theta)$ using Gammasphere array. $^{137}\text{I}$ , $^{139}\text{Cs}$ ; deduced levels, J, $\pi$ , bands, multipolarities and mixing ratios. $^{108,109,110}\text{Tc}$ , $^{111,113}\text{Rh}$ ; measured $E_\gamma$ , $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314 |
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KEYNUMBERS AND KEYWORDS

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**A=137 (continued)**

$^{137}\text{Xe}$	2009NE11	ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. $Z=50-78$ , $N=78-112$ ; systematics of $S(2n)$ values. $N=74-92$ , $Z=52-58$ , even $Z$ ; $N=119-141$ , odd $N$ , $Z=84-90$ , odd $Z$ ; $Z=50-82$ , $N=82-126$ ; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323
$^{137}\text{Cs}$	2008AL40	RADIOACTIVITY $^{137}\text{Cs}(\beta^-)$ ; measured internal bremsstrahlung spectra. JOUR BRSPPE 72 1563
	2008AL41	RADIOACTIVITY $^{137}\text{Cs}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , X-ray Spectra. Deduced internal Compton effect spectrum. JOUR BRSPPE 72 1573
	2009REZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes
$^{137}\text{Ba}$	2008AL40	RADIOACTIVITY $^{137}\text{Cs}(\beta^-)$ ; measured internal bremsstrahlung spectra. JOUR BRSPPE 72 1563
	2008AL41	RADIOACTIVITY $^{137}\text{Cs}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , X-ray Spectra. Deduced internal Compton effect spectrum. JOUR BRSPPE 72 1573
	2008XXZZ	NUCLEAR REACTIONS $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, n)$ , $E=11-16$ MeV; measured $E\gamma$ , $I\gamma$ using $\text{HI}\gamma\text{S}$ ; deduced transitions and isomers. REPT TUNL-XLII,P108,Tonchev
	2009REZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes
	2009TA03	NUCLEAR REACTIONS $\text{Xe}(\alpha, X)^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ , $E < 45$ MeV; measured $E\gamma$ , $I\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
$^{137}\text{Ce}$	2009HE03	NUCLEAR REACTIONS $^{141}\text{Pr}(d, X)^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , $E < 40$ MeV; $^{169}\text{Tm}(d, X)^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , $E < 40$ MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727
	2009TR01	NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{138}\text{Ce}$ , $^{153}\text{Eu}(\gamma, n)$ , $E=10-25$ MeV; $^{96}\text{Mo}$ , $^{118}\text{Sn}(\gamma, p)$ , $E=10-25$ MeV; $^{89}\text{Y}(\gamma, 2n)$ , $E=10-25$ MeV; $^{106}\text{Cd}$ , $^{112}\text{Sn}(\gamma, np)$ , $E=10-25$ MeV; measured $E\gamma$ , $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126

## A=138

- $^{138}\text{Xe}$  2009G009 NUCLEAR MOMENTS  $^{140,142}\text{Xe}$ ,  $^{146}\text{Ba}$ ,  $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method.  $^{130,132,134,136,138,140,142}\text{Xe}$ ,  $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ ,  $^{140,142,146,148}\text{Ce}$ ,  $^{148,150}\text{Nd}$ ,  $^{152,154}\text{Sm}$ ,  $^{154,156,158,160}\text{Gd}$ ,  $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations.  $^{146}\text{Ba}$ ,  $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009NE11 ATOMIC MASSES  $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323
- $^{138}\text{Cs}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+\text{p}$ ]; measured E $\beta$ , I $\beta$ , E $\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- $^{138}\text{Ba}$  2007TOZX NUCLEAR REACTIONS  $^{138}\text{Ba}(\gamma, \gamma)$ , E = 5.5-8.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced E1 and M1 excitations. Comparison with theoretical predictions. REPT TUNL-XLVI,P102.Tonchev
- 2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+\text{p}$ ]; measured E $\beta$ , I $\beta$ , E $\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009BE20 RADIOACTIVITY  $^{136,138}\text{Ce}(2\beta^+)$ , (2EC); measured E $\gamma$ , I $\gamma$ ; deduced T $_{1/2}$  lower limits. CeCl $_3$  scintillator. JOUR NUPAB 824 101
- 2009EN03 NUCLEAR REACTIONS  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}(\alpha, \alpha'\gamma)$ , E=136 MeV; measured E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin,  $\sigma$ , angular correlations.  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}$ ; deduced levels, J,  $\pi$  and E1 strength distributions for pygmy dipole resonances. JOUR PRVCA 80 034302
- 2009G009 NUCLEAR MOMENTS  $^{140,142}\text{Xe}$ ,  $^{146}\text{Ba}$ ,  $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method.  $^{130,132,134,136,138,140,142}\text{Xe}$ ,  $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ ,  $^{140,142,146,148}\text{Ce}$ ,  $^{148,150}\text{Nd}$ ,  $^{152,154}\text{Sm}$ ,  $^{154,156,158,160}\text{Gd}$ ,  $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations.  $^{146}\text{Ba}$ ,  $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- $^{138}\text{Ce}$  2009BE20 RADIOACTIVITY  $^{136,138}\text{Ce}(2\beta^+)$ , (2EC); measured E $\gamma$ , I $\gamma$ ; deduced T $_{1/2}$  lower limits. CeCl $_3$  scintillator. JOUR NUPAB 824 101
- 2009BH04 NUCLEAR REACTIONS  $^{130}\text{Te}(^{12}\text{C}, 4n)$ , E=65 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.  $^{138}\text{Ce}$ ; deduced levels, J,  $\pi$ , band configurations. Comparison with shell model and Total Routhian Surface calculations. JOUR NUPAB 825 16

## A=139

- $^{139}\text{Xe}$  2009NE11 ATOMIC MASSES  $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation.  $Z=50-78$ ,  $N=78-112$ ; systematics of  $S(2n)$  values.  $N=74-92$ ,  $Z=52-58$ , even  $Z$ ;  $N=119-141$ , odd  $N$ ,  $Z=84-90$ , odd  $Z$ ;  $Z=50-82$ ,  $N=82-126$ ; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323
- $^{139}\text{Cs}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+p$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009LI42 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{137}\text{I}$ ,  $^{139}\text{Cs}$ ; deduced levels,  $J$ ,  $\pi$ , bands, multipolarities and mixing ratios.  $^{108,109,110}\text{Tc}$ ,  $^{111,113}\text{Rh}$ ; measured  $E\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations.  $A=133-141$ (odd),  $Z=55$ ;  $N=84$ ,  $\text{Sb}$ ,  $\text{I}$ ,  $\text{Cs}$ ,  $\text{La}$ ;  $A=132-140$ (even),  $Z=52$ ,  $54$ ,  $56$ ; systematics of low-lying states. JOUR PRVCA 80 044314
- 2009TA03 NUCLEAR REACTIONS  $\text{Xe}(\alpha, X)^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ ,  $E < 45$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- $^{139}\text{Ba}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+p$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009TA03 NUCLEAR REACTIONS  $\text{Xe}(\alpha, X)^{129}\text{Ba} / ^{131}\text{Ba} / ^{133}\text{Ba} / ^{135}\text{Ba} / ^{137}\text{Ba} / ^{139}\text{Ba} / ^{129}\text{Cs} / ^{130}\text{Cs} / ^{132}\text{Cs} / ^{134}\text{Cs} / ^{135}\text{Cs} / ^{136}\text{Cs} / ^{139}\text{Cs}$ ,  $E < 45$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation functions using the activation technique. Compared results to model calculations. JOUR NIMBE 267 742
- $^{139}\text{La}$  2008SHZT RADIOACTIVITY  $^{88,89}\text{Rb}$ ,  $^{92,93,94,95}\text{Y}$ ,  $^{138,139}\text{Cs}$ ,  $^{139}\text{Ba}$ ,  $^{142,143}\text{La}(\beta^-)$ [from  $^{238}\text{U}+p$ ]; measured  $E\beta$ ,  $I\beta$ ,  $E\gamma$ ,  $\beta\gamma$ -coin.; deduced  $\beta$  decay energies. REPT JAEA-Review 2008-054,P42,Shibata
- 2009GAZY RADIOACTIVITY  $^{139}\text{Ce}(\text{EC})$ ; measured  $I\gamma$ ,  $I(\text{X-ray})$ ,  $E(\text{X-rays})$ ,  $\gamma\text{-X-rays-coin.}$ ,  $\text{X-rays-e-coin.}$ ; deduced  $K$ -capture probability. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P59,Ganbaatar
- 2009MAZT NUCLEAR REACTIONS  $^{139}\text{La}(\gamma, \gamma')$ ,  $E\approx 5.5-13$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\theta(\gamma)$ ; deduced  $\sigma$ . CONF Tokai (Perspective in Nuc Phys), Proc.P289,Makinaga
- $^{139}\text{Ce}$  2008XXZZ NUCLEAR REACTIONS  $^{138}\text{Ba}$ ,  $^{140}\text{Ce}$ ,  $^{142}\text{Nd}$ ,  $^{144}\text{Sm}(\gamma, n)$ ,  $E=11-16$  MeV; measured  $E\gamma$ ,  $I\gamma$  using  $\text{HI}\gamma\text{S}$ ; deduced transitions and isomers. REPT TUNL-XLII,P108,Tonchev
- 2009CH26 NUCLEAR REACTIONS  $^{130}\text{Te}(^{12}\text{C}, 3n)$ ,  $E=65$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ ,  $\gamma\gamma(\theta)$ ,  $\gamma(\text{lin pol})$ .  $^{139}\text{Ce}$ ; deduced levels,  $J$ ,  $\pi$ , configurations, multipolarities, bands.  $^{139,140}\text{Ce}$ ; level systematics. Comparison with large-basis shell-model and cranked Nilsson-Strutinsky (CNS) calculations. JOUR PRVCA 79 054332

KEYNUMBERS AND KEYWORDS

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**A=139 (continued)**

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| 2009GAZY          |          | RADIOACTIVITY $^{139}\text{Ce}(\text{EC})$ ; measured $I_\gamma$ , $I(\text{X-ray})$ , $E(\text{X-rays})$ , $\gamma$ - $\text{X-rays-coin.}$ , $\text{X-rays-e-coin}$ ; deduced K-capture probability. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P59,Ganbaatar   |
| 2009HE03          |          | NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , $E < 40 \text{ MeV}$ ; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , $E < 40 \text{ MeV}$ ; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |
| $^{139}\text{Nd}$ | 2009HE03 | NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , $E < 40 \text{ MeV}$ ; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , $E < 40 \text{ MeV}$ ; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |
| $^{139}\text{Pm}$ | 2009DH01 | NUCLEAR REACTIONS $^{116}\text{Cd}(^{27}\text{Al}, 4\text{n})$ , $E=120 \text{ MeV}$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , DCO. $^{139}\text{Pm}$ ; deduced levels, $J$ , $\pi$ , bands, magnetic rotational bands, $B(\text{M}1)$ and $B(\text{E}2)$ . Comparison with tilted axis cranking calculations. JOUR PRVCA 80 014320   |
| $^{139}\text{Sm}$ | 2008PA36 | NUCLEAR REACTIONS $^{99}\text{Ru}(^{48}\text{Ti}, 2\text{n}2\text{p}\alpha)$ , $E=240 \text{ MeV}$ ; $^{114}\text{Sn}(^{32}\text{S}, \text{n}2\text{p}\alpha)$ , $E=160\text{MeV}$ ; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (proton) $\gamma$ -coin, DSA using Euroball III and IV arrays. $^{139}\text{Sm}$ deduced $J$ , $\pi$ , $B(\text{M}1)$ , $B(\text{E}2)$ , $T_{1/2}$ . Comparison with self-consistent TAC (Tilted Axis Cranking) and semi-classical SPAC (Shears mechanism with Principal Axis Cranking) models. JOUR ZAANE 37 279 |

**A=140**

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| $^{140}\text{Xe}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E_\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, $J$ , g factors. JOUR PRVCA 79 034316   |
|                   | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. $Z=50-78$ , $N=78-112$ ; systematics of $S(2\text{n})$ values. $N=74-92$ , $Z=52-58$ , even $Z$ ; $N=119-141$ , odd $N$ , $Z=84-90$ , odd $Z$ ; $Z=50-82$ , $N=82-126$ ; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323  |

KEYNUMBERS AND KEYWORDS

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A=140 (*continued*)

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| $^{140}\text{Ba}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
| $^{140}\text{Ce}$ | 2009CH26 | NUCLEAR REACTIONS $^{130}\text{Te}(^{12}\text{C}, 3n)$ , E=65 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ , $\gamma\gamma(\theta)$ , $\gamma(\text{lin pol})$ . $^{139}\text{Ce}$ ; deduced levels, J, $\pi$ , configurations, multiplicities, bands. $^{139,140}\text{Ce}$ ; level systematics. Comparison with large-basis shell-model and cranked Nilsson-Strutinsky (CNS) calculations. JOUR PRVCA 79 054332   |
|                   | 2009EN03 | NUCLEAR REACTIONS $^{138}\text{Ba}$ , $^{140}\text{Ce}(\alpha, \alpha'\gamma)$ , E=136 MeV; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin, $\sigma$ , angular correlations. $^{138}\text{Ba}$ , $^{140}\text{Ce}$ ; deduced levels, J, $\pi$ and E1 strength distributions for pygmy dipole resonances. JOUR PRVCA 80 034302  |
|                   | 2009GL02 | NUCLEAR REACTIONS $^{143}\text{Nd}(n, \alpha)^{140}\text{Ce}$ , E=4.0, 5.0, 6.0 MeV; $^{147}\text{Sm}(n, \alpha)^{144}\text{Nd}$ , E=5.0, 6.0 MeV; measured $\alpha$ spectra, $\sigma$ , forward and backward $\alpha$ rates. $^{143}\text{Nd}$ , $^{147}\text{Sm}(n, \alpha)$ , E=0.5 keV-20 MeV; compared present and previous measured cross sections with several evaluations, and calculations from TALYS code. JOUR PRVCA 80 044602   |
|                   | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
| $^{140}\text{Nd}$ | 2009HE03 | NUCLEAR REACTIONS $^{141}\text{Pr}(d, X)^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ , E < 40 MeV; $^{169}\text{Tm}(d, X)^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ , E < 40 MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |
|                   | 2009IV02 | RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , ( $\beta^+$ ); measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502   |
| $^{140}\text{Pm}$ | 2009IV02 | RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , ( $\beta^+$ ); measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502   |
| $^{140}\text{Eu}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |
| $^{140}\text{Tb}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |

KEYNUMBERS AND KEYWORDS

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**A=141**

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| $^{141}\text{Xe}$ | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323 |
| $^{141}\text{Nd}$ | 2007ANZX | NUCLEAR REACTIONS $^{142,150}\text{Nd}(\gamma, n)$ , E = 7.4-13.3 MeV; measured In; deduced $\sigma$ . REPT TUNL-XLVI,P42,Angell   |
|                   | 2008XXZZ | NUCLEAR REACTIONS $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, n)$ , E=11-16 MeV; measured $E\gamma$ , $I\gamma$ using HI $\gamma$ S; deduced transitions and isomers. REPT TUNL-XLII,P108,Tonchev   |
|                   | 2009HE03 | NUCLEAR REACTIONS $^{141}\text{Pr}(d, X)^{135}\text{Ce}$ / $^{135}\text{La}$ / $^{137}\text{Ce}$ / $^{139}\text{Ce}$ / $^{139}\text{Nd}$ / $^{140}\text{Nd}$ / $^{141}\text{Nd}$ / $^{142}\text{Pr}$ , E < 40 MeV; $^{169}\text{Tm}(d, X)^{166}\text{Yb}$ / $^{167}\text{Tm}$ / $^{169}\text{Tm}$ / $^{169}\text{Yb}$ , E < 40 MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727                  |
|                   | 2009PAZZ | NUCLEAR REACTIONS $^{110}\text{Pd}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, n)$ , E=27, 28, 29, 30 MeV; measured $E\gamma$ , $I\gamma$ . $^{109}\text{Pd}$ ; deduced isomeric yield ratios depending on $E\gamma$ . Activation technique. CONF Cheboksary,P146,Palvanov   |

**A=142**

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| $^{142}\text{Xe}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |
|                   | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323  |

KEYNUMBERS AND KEYWORDS

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A=142 (*continued*)

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| $^{142}\text{Ba}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |
|                   | 2009UR03 | RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{103}\text{Zr}$ ; deduced levels, J, $\pi$ , bands. $^{100,102,104}\text{Zr}$ , $^{142,143,144}\text{Ba}$ ; measured $E\gamma$ . $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of $^{248}\text{Cm}$ . $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of $^{103}\text{Zr}$ levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301  |
| $^{142}\text{La}$ | 2008SHZT | RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+\text{p}$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
| $^{142}\text{Ce}$ | 2008SHZT | RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+\text{p}$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
|                   | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009WI09 | RADIOACTIVITY $^{142}\text{Pr}(\text{EC})$ , ( $\beta^+$ ) [from $^9\text{Be}(^{152}\text{Sm}, \text{X})$ , $E=607.4$ MeV / nucleon]; measured Schottky frequency spectra of ions in a storage ring; deduced $T_{1/2}$ . JOUR PYLBB 679 36  |
| $^{142}\text{Pr}$ | 2009HE03 | NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce}$ / $^{135}\text{La}$ / $^{137}\text{Ce}$ / $^{139}\text{Ce}$ / $^{139}\text{Nd}$ / $^{140}\text{Nd}$ / $^{141}\text{Nd}$ / $^{142}\text{Pr}$ , $E < 40$ MeV; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb}$ / $^{167}\text{Tm}$ / $^{169}\text{Tm}$ / $^{169}\text{Yb}$ , $E < 40$ MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727   |
|                   | 2009WI09 | RADIOACTIVITY $^{142}\text{Pr}(\text{EC})$ , ( $\beta^+$ ) [from $^9\text{Be}(^{152}\text{Sm}, \text{X})$ , $E=607.4$ MeV / nucleon]; measured Schottky frequency spectra of ions in a storage ring; deduced $T_{1/2}$ . JOUR PYLBB 679 36  |
| $^{142}\text{Nd}$ | 2008ANZY | NUCLEAR REACTIONS $^{142}\text{Nd}(\gamma, \gamma')$ , $E=3.4-9.7$ MeV; $^{150}\text{Nd}(\gamma, \gamma')$ , $E=5.6-7.2$ MeV; measured $I\gamma$ , $E\gamma$ using nuclear resonance fluorescence; deduced $\sigma$ , $\gamma$ dipole strength function. REPT TUNL-XLII,P110,Angell   |
|                   | 2009IV02 | RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , ( $\beta^+$ ); measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502   |

KEYNUMBERS AND KEYWORDS

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**A=142 (continued)**

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| 2009SH19          | NUCLEAR REACTIONS $^{58}\text{Ni}$ , $^{89}\text{Y}$ , $^{90}\text{Zr}$ , $^{120}\text{Sn}$ , $^{142}\text{Nd}$ , $^{166}\text{Er}$ , $^{208}\text{Pb}(p, p')$ , $E=200$ MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305 |
| $^{142}\text{Pm}$ | 2009IV02 RADIOACTIVITY $^{140,142}\text{Pm}$ , $^{122}\text{I}(\text{EC})$ , $(\beta^+)$ ; measured number of daughter ions, time modulation; deduced interference of two massive neutrino eigenstates. JOUR PRLTA 103 062502   |
| $^{142}\text{Tb}$ | 2009MA06 NUCLEAR REACTIONS $^{92}\text{Mo}(^{54}\text{Fe}, n3p)$ , $E=245, 252, 256$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , half-lives. $^{142}\text{Tb}$ ; deduced J, $\pi$ , multipolarity, isomers, bands, configurations. Prompt and delayed $\gamma$ -ray spectroscopy using recoil isomer-tagging technique. Comparison with predictions of cranked shell-model calculations. JOUR PRVCA 79 024318  |

**A=143**

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| $^{143}\text{Xe}$ | 2009NE11 ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. $Z=50-78$ , $N=78-112$ ; systematics of $S(2n)$ values. $N=74-92$ , $Z=52-58$ , even $Z$ ; $N=119-141$ , odd $N$ , $Z=84-90$ , odd $Z$ ; $Z=50-82$ , $N=82-126$ ; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323                                  |
| $^{143}\text{Ba}$ | 2009UR03 RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{103}\text{Zr}$ ; deduced levels, J, $\pi$ , bands. $^{100,102,104}\text{Zr}$ , $^{142,143,144}\text{Ba}$ ; measured $E\gamma$ . $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of $^{248}\text{Cm}$ . $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of $^{103}\text{Zr}$ levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301 |
| $^{143}\text{La}$ | 2008SHZT RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+p$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
|                   | 2009LU04 RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin and fission yield ratios of $^{103,104,105}\text{Nb}$ , $^{143,144}\text{La}$ using Gammasphere. $^{143,144}\text{La}$ deduced levels, J, $\pi$ , band configurations, branching ratios, $B(E1) / B(E2)$ ratios. Cranked-shell model calculations. JOUR NUPAB 818 121   |
| $^{143}\text{Ce}$ | 2008SHZT RADIOACTIVITY $^{88,89}\text{Rb}$ , $^{92,93,94,95}\text{Y}$ , $^{138,139}\text{Cs}$ , $^{139}\text{Ba}$ , $^{142,143}\text{La}(\beta^-)$ [from $^{238}\text{U}+p$ ]; measured $E\beta$ , $I\beta$ , $E\gamma$ , $\beta\gamma$ -coin.; deduced $\beta$ decay energies. REPT JAEA-Review 2008-054,P42,Shibata   |
| $^{143}\text{Nd}$ | 2009K015 RADIOACTIVITY $^{147}\text{Sm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Direct counting method. JOUR ARISE 67 1702   |



KEYNUMBERS AND KEYWORDS

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**A=143 (continued)**

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| $^{143}\text{Sm}$ | 2008PAZT | NUCLEAR REACTIONS $^{144}\text{Sm}(\gamma, n)$ , $E = 10\text{-}35$ MeV; measured $E\gamma$ , $I\gamma$ ; $^{143}\text{Sm}$ ; deduced isomeric yield ratios. Betatron, activation method, Ge(Li) detector. CONF Moscow,P155,Palvanov   |
|                   | 2008XXZZ | NUCLEAR REACTIONS $^{138}\text{Ba}$ , $^{140}\text{Ce}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, n)$ , $E=11\text{-}16$ MeV; measured $E\gamma$ , $I\gamma$ using HI $\gamma$ S; deduced transitions and isomers. REPT TUNL-XLII,P108,Tonchev                              |
|                   | 2009PAZZ | NUCLEAR REACTIONS $^{110}\text{Pd}$ , $^{142}\text{Nd}$ , $^{144}\text{Sm}(\gamma, n)$ , $E=27, 28, 29, 30$ MeV; measured $E\gamma$ , $I\gamma$ . $^{109}\text{Pd}$ ; deduced isomeric yield ratios depending on $E\gamma$ . Activation technique. CONF Cheboksary,P146,Palvanov |

**A=144**

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| $^{144}\text{Xe}$ | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. $Z=50\text{-}78$ , $N=78\text{-}112$ ; systematics of $S(2n)$ values. $N=74\text{-}92$ , $Z=52\text{-}58$ , even $Z$ ; $N=119\text{-}141$ , odd $N$ , $Z=84\text{-}90$ , odd $Z$ ; $Z=50\text{-}82$ , $N=82\text{-}126$ ; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323   |
| $^{144}\text{Ba}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured $g$ factors of first $2+$ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical $g$ factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009UR03 | RADIOACTIVITY $^{248}\text{Cm}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{103}\text{Zr}$ ; deduced levels, $J$ , $\pi$ , bands. $^{100,102,104}\text{Zr}$ , $^{142,143,144}\text{Ba}$ ; measured $E\gamma$ . $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of $^{248}\text{Cm}$ . $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of $^{103}\text{Zr}$ levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301   |
| $^{144}\text{La}$ | 2009LU04 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin and fission yield ratios of $^{103,104,105}\text{Nb}$ , $^{143,144}\text{La}$ using Gammasphere. $^{143,144}\text{La}$ deduced levels, $J$ , $\pi$ , band configurations, branching ratios, $B(E1) / B(E2)$ ratios. Cranked-shell model calculations. JOUR NUPAB 818 121   |
| $^{144}\text{Nd}$ | 2009GL02 | NUCLEAR REACTIONS $^{143}\text{Nd}(n, \alpha)^{140}\text{Ce}$ , $E=4.0, 5.0, 6.0$ MeV; $^{147}\text{Sm}(n, \alpha)^{144}\text{Nd}$ , $E=5.0, 6.0$ MeV; measured $\alpha$ spectra, $\sigma$ , forward and backward $\alpha$ rates. $^{143}\text{Nd}$ , $^{147}\text{Sm}(n, \alpha)$ , $E=0.5$ keV-20 MeV; compared present and previous measured cross sections with several evaluations, and calculations from TALYS code. JOUR PRVCA 80 044602   |

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**A=144 (continued)**

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| $^{144}\text{Sm}$ | 2009CAZY | NUCLEAR REACTIONS $^{144}\text{Sm}(^6\text{Li}, ^6\text{Li}')$ , E=14-35 MeV; $^{144}\text{Sm}(^7\text{Li}, ^7\text{Li}')$ , E=12-32 MeV; measured E(particle), I(particle), $\theta$ (particle), Z(particle); deduced $\sigma$ , $d\sigma$ , barrier distributions; calculated barrier distributions using simplified CC. CONF Brazil (Nuclear Physics 2008) Proc. P111, Capurro   |
|                   | 2009M003 | NUCLEAR REACTIONS $^{144}\text{Sm}(^6\text{Li}, ^6\text{Li})$ , E=14-35 MeV; measured excitation functions. Comparison with coupled-channel calculations. JOUR PRVCA 79 014601  |
| $^{144}\text{Dy}$ | 2009SU09 | NUCLEAR REACTIONS $^{92}\text{Mo}(^{56}\text{Fe}, 2n2p)$ , E=280 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ . $^{144}\text{Dy}$ ; deduced levels, J, $\pi$ , multipolarity, B(M1), B(E2), configurations, magnetic and antimagnetic rotational bands. A=136-146, even-A Ce, Nd, Sm, Gd, Tb, Dy; level systematics. $^{110}\text{Cd}$ , $^{144}\text{Dy}$ ; discussed comparison of magnetic and antimagnetic rotors. JOUR PRVCA 79 064321 |

**A=145**

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|-------------------|----------|--|
| $^{145}\text{Xe}$ | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323 |
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**A=146**

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| $^{146}\text{Xe}$ | 2009NE11 | ATOMIC MASSES $^{136,137,138,139,140,141,142,143,144,145,146}\text{Xe}$ ; measured masses using the ISOLTRAP double Penning-trap mass spectrometer at ISOLDE-CERN facility. Comparison with earlier measurements and AME-2003 evaluation. Z=50-78, N=78-112; systematics of S(2n) values. N=74-92, Z=52-58, even Z; N=119-141, odd N, Z=84-90, odd Z; Z=50-82, N=82-126; systematics of proton-neutron interaction strengths. JOUR PRVCA 80 044323  |
| $^{146}\text{Ba}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |

KEYNUMBERS AND KEYWORDS

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**A=146 (continued)**

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| $^{146}\text{Ce}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |

**A=147**

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| $^{147}\text{Pm}$ | 2008VI09 | RADIOACTIVITY $^{109}\text{Ag}$ , $^{123}\text{Te}$ , $^{147}\text{Pm}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ , X-ray spectra, $e\gamma$ -, $e\text{X-ray-coin}$ . Deduced hypersatellite energy shift. JOUR BRSP 72 1559   |
| $^{147}\text{Sm}$ | 2009K015 | RADIOACTIVITY $^{147}\text{Sm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Direct counting method. JOUR ARISE 67 1702  |
| $^{147}\text{Tb}$ | 2009RA08 | NUCLEAR REACTIONS $^{144}\text{Sm}({}^6\text{Li}, 2n)$ , $({}^6\text{Li}, 3n)$ , $E=20\text{-}40\text{ MeV}$ ; measured $E\gamma$ , $I\gamma$ , cross sections. $^{159}\text{Tb}$ , $^{165}\text{Ho}({}^7\text{Li}, \text{X})$ , $^{162}\text{Dy}(\alpha, \text{X})$ , $^{160}\text{Gd}({}^{12}\text{C}, \text{X})$ , E not given; discussed systematics of reactions. Comparison with coupled channel calculations. JOUR PRVCA 79 051601 |

**A=148**

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| $^{148}\text{La}$ | 2009LU11 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{100}\text{Nb}$ , $^{148}\text{La}$ ; deduced ICCs, high-spin levels, J, $\pi$ , rotational bands, multipolarities, shape coexistence and configurations. JOUR NUPAB 825 1  |
| $^{148}\text{Ce}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |
| $^{148}\text{Nd}$ | 2009BA21 | RADIOACTIVITY $^{148,150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . $^{148,150}\text{Nd}$ ; measured half-lives, partial half-lives. JOUR PRVCA 79 045501  |

KEYNUMBERS AND KEYWORDS

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**A=148 (continued)**

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| 2009G009                   | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
| $^{148}\text{Pm}$ 2009ZIZZ | NUCLEAR REACTIONS $^{150}\text{Sm}(\mu^-, n\nu)$ , E not given; measured $E\gamma$ , $I\gamma$ , $\mu$ capture rates. $^{150,149m,149,148m,148}\text{Pm}$ , $^{149}\text{Nd}$ ; deduced yields. CONF Cheboksary,P81,Zinatulina  |
| $^{148}\text{Sm}$ 2009BA21 | RADIOACTIVITY $^{148,150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . $^{148,150}\text{Nd}$ ; measured half-lives, partial half-lives. JOUR PRVCA 79 045501  |
| $^{148}\text{Tb}$ 2007ESZX | NUCLEAR REACTIONS $^{96}\text{Ru}(^{58}\text{Ni}, 2p)^{152}\text{Tm} / ^{148}\text{Tb} / ^{152}\text{Yb}$ , E=4.53 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , X-ray $\gamma$ -coin. Total absorption spectroscopy. REPT ATOMKI 2007 Annual,P31,Estevez   |
| 2009RA08                   | NUCLEAR REACTIONS $^{144}\text{Sm}(^6\text{Li}, 2n)$ , $(^6\text{Li}, 3n)$ , E=20-40 MeV; measured $E\gamma$ , $I\gamma$ , cross sections. $^{159}\text{Tb}$ , $^{165}\text{Ho}(^7\text{Li}, X)$ , $^{162}\text{Dy}(\alpha, X)$ , $^{160}\text{Gd}(^{12}\text{C}, X)$ , E not given; discussed systematics of reactions. Comparison with coupled channel calculations. JOUR PRVCA 79 051601   |

**A=149**

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| $^{149}\text{Nd}$ 2007ANZX | NUCLEAR REACTIONS $^{142,150}\text{Nd}(\gamma, n)$ , E = 7.4-13.3 MeV; measured $I_n$ ; deduced $\sigma$ . REPT TUNL-XLVI,P42,Angell  |
| 2009ZIZZ                   | NUCLEAR REACTIONS $^{150}\text{Sm}(\mu^-, n\nu)$ , E not given; measured $E\gamma$ , $I\gamma$ , $\mu$ capture rates. $^{150,149m,149,148m,148}\text{Pm}$ , $^{149}\text{Nd}$ ; deduced yields. CONF Cheboksary,P81,Zinatulina                            |
| $^{149}\text{Pm}$ 2009ZIZZ | NUCLEAR REACTIONS $^{150}\text{Sm}(\mu^-, n\nu)$ , E not given; measured $E\gamma$ , $I\gamma$ , $\mu$ capture rates. $^{150,149m,149,148m,148}\text{Pm}$ , $^{149}\text{Nd}$ ; deduced yields. CONF Cheboksary,P81,Zinatulina                            |
| $^{149}\text{Eu}$ 2009VI01 | NUCLEAR REACTIONS $^{150,150m,152m}\text{Eu}$ , $^{190m}\text{Ir}(\gamma, n)$ , E=12, 12.5, 16 MeV; measured $E\gamma$ , $I\gamma$ , half-lives, isomeric yield ratios; deduced levels. Comparison with TALYS and MCEM calculations. JOUR PRVCA 79 014615 |

**A=150**

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| $^{150}\text{Nd}$ 2007KIZW | RADIOACTIVITY $^{150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . REPT TUNL-XLVI,P22,Kidd  |
| 2008ANZY                   | NUCLEAR REACTIONS $^{142}\text{Nd}(\gamma, \gamma')$ , E=3.4-9.7 MeV; $^{150}\text{Nd}(\gamma, \gamma')$ , E=5.6-7.2 MeV; measured $I\gamma$ , $E\gamma$ using nuclear resonance fluorescence; deduced $\sigma$ , $\gamma$ dipole strength function. REPT TUNL-XLII,P110,Angell |

KEYNUMBERS AND KEYWORDS

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**A=150 (continued)**

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|                   | 2008KOZV | 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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limits, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Moscow,P203,Kochetov   |
|                   | 2009AR10 | RADIOACTIVITY $^{150}\text{Nd}(2\beta^-)$ ; measured $E(e)$ , $E\gamma$ , $I\gamma$ , angle between two electrons; deduced half-lives for $2\nu\beta\beta$ and $0\nu\beta\beta$ decay modes. NEMO-3 detector. JOUR PRVCA 80 032501  |
|                   | 2009BA21 | RADIOACTIVITY $^{148,150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . $^{148,150}\text{Nd}$ ; measured half-lives, partial half-lives. JOUR PRVCA 79 045501  |
|                   | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009KOZY | 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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limit, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Cheboksary,P84,Kochetov   |
| $^{150}\text{Pm}$ | 2009ZIZZ | NUCLEAR REACTIONS $^{150}\text{Sm}(\mu^-, n\nu)$ , E not given; measured $E\gamma$ , $I\gamma$ , $\mu$ capture rates. $^{150,149m,149,148m,148}\text{Pm}$ , $^{149}\text{Nd}$ ; deduced yields. CONF Cheboksary,P81,Zinatulina  |
| $^{150}\text{Sm}$ | 2007KIZW | RADIOACTIVITY $^{150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . REPT TUNL-XLVI,P22,Kidd  |
|                   | 2008KOZV | 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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limits, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Moscow,P203,Kochetov   |
|                   | 2009AR10 | RADIOACTIVITY $^{150}\text{Nd}(2\beta^-)$ ; measured $E(e)$ , $E\gamma$ , $I\gamma$ , angle between two electrons; deduced half-lives for $2\nu\beta\beta$ and $0\nu\beta\beta$ decay modes. NEMO-3 detector. JOUR PRVCA 80 032501  |
|                   | 2009BA21 | RADIOACTIVITY $^{148,150}\text{Nd}(2\beta^-)$ ; measured $E\gamma$ , $I\gamma$ . $^{148,150}\text{Nd}$ ; measured half-lives, partial half-lives. JOUR PRVCA 79 045501  |
|                   | 2009KOZY | 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 $0\nu 2\beta^-$ -decay $T_{1/2}$ lower limit, $2\nu 2\beta^-$ -decay $T_{1/2}$ . CONF Cheboksary,P84,Kochetov   |

**A=151**

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| $^{151}\text{Eu}$ | 2009VI01 | NUCLEAR REACTIONS $^{150,150m,152m}\text{Eu}$ , $^{190m}\text{Ir}(\gamma, n)$ , $E=12, 12.5, 16$ MeV; measured $E\gamma$ , $I\gamma$ , half-lives, isomeric yield ratios; deduced levels. Comparison with TALYS and MCEM calculations. JOUR PRVCA 79 014615 |
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KEYNUMBERS AND KEYWORDS

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**A=151 (continued)**

- <sup>151</sup>Tb      2009LE18      NUCLEAR REACTIONS <sup>130</sup>Te(<sup>27</sup>Al, 6n)<sup>151</sup>Tb, E=155 MeV; <sup>170</sup>Er(<sup>30</sup>Si, 4n)<sup>196</sup>Pb, E=148 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma$  multiplicity, quasicontinuum  $\gamma$ -ray spectra; deduced Monte Carlo simulation of  $\gamma$  decay based on microscopically calculated levels, E2 decay probabilities, potential barriers between normal and superdeformed wells and collective mass parameters. <sup>151</sup>Tb, <sup>196</sup>Pb; deduced normal and superdeformed bands, and E1 strength functions. Comparison with cranked shell-model calculations. JOUR PRVCA 79 064306
- <sup>151</sup>Er      2009FU05      NUCLEAR REACTIONS <sup>116</sup>Sn(<sup>40</sup>Ar, 5n), E=197 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>151</sup>Er deduced high-spin levels, J,  $\pi$ , multipolarities, configurations. Comparison with deformed independent particle model calculations. JOUR ZAANE 39 49

**A=152**

- <sup>152</sup>Sm      2009GA21      NUCLEAR REACTIONS <sup>152</sup>Sm(n, n $\gamma$ ), E=1.2-3.0 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced negative-parity band structures, J,  $\pi$ , B(E1), B(E2). Comparison with interacting boson model. JOUR PRLTA 103 062501
- 2009G009      NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009INZX      RADIOACTIVITY <sup>152,154</sup>Eu( $\beta^-$ ), (EC), <sup>155</sup>Eu( $\beta^-$ ); measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic  $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov
- 2009LI23      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=36-80 MeV; measured particle spectra,  $\sigma$  as a function of beam energy; deduced diffuseness parameters using single-channel and coupled-channels calculations. JOUR PRVCA 79 064603
- <sup>152</sup>Eu      2009AGZY      NUCLEAR REACTIONS <sup>95</sup>Mo(n,  $\gamma$ ), <sup>151,153</sup>Eu(n,  $\gamma$ ), <sup>155,157</sup>Gd(n,  $\gamma$ ), E=10 meV-100 keV; measured E $\gamma$ , I $\gamma$ ,  $\gamma$  multiplicity using DANCE BaF<sub>2</sub> array, In, En using TOF method; deduced J,  $\pi$  of n-resonances using DICEBOX code. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P11,Agvaanluvsan
- 2009INZX      RADIOACTIVITY <sup>152,154</sup>Eu( $\beta^-$ ), (EC), <sup>155</sup>Eu( $\beta^-$ ); measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic  $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov

KEYNUMBERS AND KEYWORDS

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**A=152 (continued)**

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|                   | 2009TR01 | NUCLEAR REACTIONS $^{116}\text{Cd}$ , $^{138}\text{Ce}$ , $^{153}\text{Eu}(\gamma, n)$ , E=10-25 MeV; $^{96}\text{Mo}$ , $^{118}\text{Sn}(\gamma, p)$ , E=10-25 MeV; $^{89}\text{Y}(\gamma, 2n)$ , E=10-25 MeV; $^{106}\text{Cd}$ , $^{112}\text{Sn}(\gamma, np)$ , E=10-25 MeV; measured $E\gamma$ , $I\gamma$ , isomeric ratios. JOUR PPNLA 6 126  |
| $^{152}\text{Gd}$ | 2009INZX | RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov  |
|                   | 2009PA17 | NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, 6n)$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{156}\text{Er}$ ; deduced levels, J, $\pi$ , angular distribution coefficients, bands, multipolarities, B(M1), B(M1) / B(E2), configurations, alignments as a function of rotational frequency. Nilsson-Strutinsky calculations. Potential energy surface calculations. $^{152}\text{Gd}$ , $^{154}\text{Dy}$ , $^{156}\text{Er}$ , $^{158}\text{Yb}$ , $^{160}\text{Hf}$ ; level and configuration systematics. JOUR PRVCA 79 044324 |
| $^{152}\text{Tm}$ | 2007ESZX | NUCLEAR REACTIONS $^{96}\text{Ru}(^{58}\text{Ni}, 2p)^{152}\text{Tm} / ^{148}\text{Tb} / ^{152}\text{Yb}$ , E=4.53 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , X-ray $\gamma$ -coin. Total absorption spectroscopy. REPT ATOMKI 2007 Annual,P31,Estevez  |
| $^{152}\text{Yb}$ | 2007ESZX | NUCLEAR REACTIONS $^{96}\text{Ru}(^{58}\text{Ni}, 2p)^{152}\text{Tm} / ^{148}\text{Tb} / ^{152}\text{Yb}$ , E=4.53 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , X-ray $\gamma$ -coin. Total absorption spectroscopy. REPT ATOMKI 2007 Annual,P31,Estevez  |

**A=153**

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| $^{153}\text{Sm}$ | 2009FR09 | RADIOACTIVITY $^{153}\text{Sm}(\beta^-)$ [from $^{152}\text{Sm}(n, \gamma)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with ENSDF data. JOUR JRNCD 282 369   |
| $^{153}\text{Eu}$ | 2009FR09 | RADIOACTIVITY $^{153}\text{Sm}(\beta^-)$ [from $^{152}\text{Sm}(n, \gamma)$ ]; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . Comparison with ENSDF data. JOUR JRNCD 282 369   |
| $^{153}\text{Gd}$ | 2009DAZV | NUCLEAR REACTIONS $^{152}\text{Gd}(n, \gamma)$ , E = low; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin., $\gamma$ multiplicities; deduced photon strength functions. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P48,Dashdorj  |
|                   | 2009LU16 | NUCLEAR REACTIONS $^{158}\text{Dy}(n, p)$ , $^{156}\text{Dy}(n, \alpha)$ , $^{160}\text{Dy}(n, p)$ , E = 14.7 MeV; measured $E\gamma$ , $I\gamma$ from neutron activation; deduced $\sigma$ and their uncertainties. Comparison with nuclear model calculations. JOUR ARISE 67 1892  |
| $^{153}\text{Dy}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+ \text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1 |
| $^{153}\text{Er}$ | 2008XU09 | RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+ \text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1 |

## A=154

$^{154}\text{Nd}$	2009SI21	NUCLEAR REACTIONS $^{239}\text{Pu}(n, X)^{154}\text{Nd}$ , E=thermal; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, half-lives. $^{154}\text{Nd}$ ; deduced levels, J, $\pi$ , isomer, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304
$^{154}\text{Sm}$	2008WIZX	NUCLEAR REACTIONS $^{154}\text{Sm}$ , $^{166}\text{Er}(\gamma, \gamma')$ , E not given; measured $I\gamma$ , $E\gamma$ , I(ce), E(ce) populated via Coulomb excitation; deduced monopole transition strength, B(E2), deformation. REPT MLL 2007 Annual,P16,Wimmer
	2009G009	NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
	2009INZX	RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov
	2009LI23	NUCLEAR REACTIONS $^{152,154}\text{Sm}$ , $^{184}\text{W}$ , $^{196}\text{Pt}$ , $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O})$ , E=36-80 MeV; measured particle spectra, $\sigma$ as a function of beam energy; deduced diffuseness parameters using single-channel and coupled-channels calculations. JOUR PRVCA 79 064603
$^{154}\text{Eu}$	2009AGZY	NUCLEAR REACTIONS $^{95}\text{Mo}(n, \gamma)$ , $^{151,153}\text{Eu}(n, \gamma)$ , $^{155,157}\text{Gd}(n, \gamma)$ , E=10 meV-100 keV; measured $E\gamma$ , $I\gamma$ , $\gamma$ multiplicity using DANCE $\text{BaF}_2$ array, In, En using TOF method; deduced J, $\pi$ of n-resonances using DICEBOX code. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P11,Agvaanluvsan
	2009INZX	RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov
$^{154}\text{Gd}$	2009G009	NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
	2009GY01	RADIOACTIVITY $^{154}\text{Tb}(\text{IT})$ , ( $\beta^+$ ), (EC) [from $^{151}\text{Eu}(\alpha, n)$ , E=13.5, 14.5, 15, 15.5, 17 MeV]; measured $E\gamma$ , $I\gamma$ using HPGe detector; deduced $T_{1/2}$ of 1st isomeric state. JOUR NUPAB 828 1



KEYNUMBERS AND KEYWORDS

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**A=154 (continued)**

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|                   | 2009INZX | RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov  |
| $^{154}\text{Tb}$ | 2009GY01 | RADIOACTIVITY $^{154}\text{Tb}(\text{IT})$ , ( $\beta^+$ ), (EC) [from $^{151}\text{Eu}(\alpha, n)$ , E=13.5, 14.5, 15, 15.5, 17 MeV]; measured $E\gamma$ , $I\gamma$ using HPGe detector; deduced $T_{1/2}$ of 1st isomeric state. JOUR NUPAB 828 1   |
| $^{154}\text{Dy}$ | 2009IJ01 | NUCLEAR REACTIONS $^{122}\text{Sn}(^{36}\text{S}, 4n)$ , E=165 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{154}\text{Dy}$ ; deduced levels, J, $\pi$ , superdeformed bands, dynamic moments of inertia, neutron single particle energies. Comparison with the cranked relativistic mean field calculations. JOUR PRVCA 80 034322  |
|                   | 2009PA17 | NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, 6n)$ , E=215 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{156}\text{Er}$ ; deduced levels, J, $\pi$ , angular distribution coefficients, bands, multipolarities, B(M1), B(M1) / B(E2), configurations, alignments as a function of rotational frequency. Nilsson-Strutinsky calculations. Potential energy surface calculations. $^{152}\text{Gd}$ , $^{154}\text{Dy}$ , $^{156}\text{Er}$ , $^{158}\text{Yb}$ , $^{160}\text{Hf}$ ; level and configuration systematics. JOUR PRVCA 79 044324 |

**A=155**

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| $^{155}\text{Pm}$ | 2009HW03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{91,92,93}\text{Rb}$ , $^{155,156}\text{Pm}$ ; deduced levels, J, $\pi$ , bands. Comparison with level systematics of $^{89}\text{Rb}$ , $^{90}\text{Kr}$ and $^{92}\text{Kr}$ . JOUR PRVCA 80 037304 |
| $^{155}\text{Eu}$ | 2009INZX | RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov                                 |
| $^{155}\text{Gd}$ | 2009INZX | RADIOACTIVITY $^{152,154}\text{Eu}(\beta^-)$ , (EC), $^{155}\text{Eu}(\beta^-)$ ; measured Auger spectrum. Sm, Gd; deduced Auger groups. Analyzed effect "Atomic Structure" on line energies. Electrostatic $\beta$ -spectrometer, comparison with semiempirical data. CONF Cheboksary,P72,Inoyatov                                 |

**A=156**

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| $^{156}\text{Nd}$ | 2009SI21 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, half-lives. $^{156}\text{Nd}$ , $^{156,158,160}\text{Sm}$ ; deduced levels, J, $\pi$ , isomers, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304   |
| $^{156}\text{Pm}$ | 2009HW03 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{91,92,93}\text{Rb}$ , $^{155,156}\text{Pm}$ ; deduced levels, J, $\pi$ , bands. Comparison with level systematics of $^{89}\text{Rb}$ , $^{90}\text{Kr}$ and $^{92}\text{Kr}$ . JOUR PRVCA 80 037304 |

KEYNUMBERS AND KEYWORDS

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**A=156 (continued)**

$^{156}\text{Sm}$	2009SI21	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, half-lives. $^{156}\text{Nd}$ , $^{156,158,160}\text{Sm}$ ; deduced levels, J, $\pi$ , isomers, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304
$^{156}\text{Gd}$	2009AGZY	NUCLEAR REACTIONS $^{95}\text{Mo}(\text{n}, \gamma)$ , $^{151,153}\text{Eu}(\text{n}, \gamma)$ , $^{155,157}\text{Gd}(\text{n}, \gamma)$ , $E=10$ meV-100 keV; measured $E\gamma$ , $I\gamma$ , $\gamma$ multiplicity using DANCE $\text{BaF}_2$ array, In, En using TOF method; deduced J, $\pi$ of n-resonances using DICEBOX code. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P11,Agvaanluvsan
	2009D008	NUCLEAR REACTIONS $^{154}\text{Sm}(\alpha, 2\text{n})$ , $E=27$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $B(E2) / B(E1)$ . JOUR APOBB 40 725
	2009G009	NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
$^{156}\text{Dy}$	2008VAZU	RADIOACTIVITY $^{156,158,160}\text{Ho}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, ce, ICC; $^{156,158,160}\text{Dy}$ ; deduced levels with $J\pi=0^+$ , $\rho^2$ , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
$^{156}\text{Ho}$	2008VAZU	RADIOACTIVITY $^{156,158,160}\text{Ho}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, ce, ICC; $^{156,158,160}\text{Dy}$ ; deduced levels with $J\pi=0^+$ , $\rho^2$ , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
$^{156}\text{Er}$	2008SIZW	NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, \text{X})^{156}\text{Er} / ^{157}\text{Er} / ^{158}\text{Er}$ , $E=215$ MeV; $^{116}\text{Cd}(^{48}\text{Ca}, \text{X})^{159}\text{Er} / ^{160}\text{Er}$ , $E=215$ MeV; measured $E\gamma$ , $I\gamma$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P136,Simpson
	2009PA17	NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, 6\text{n})$ , $E=215$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, angular distributions. $^{156}\text{Er}$ ; deduced levels, J, $\pi$ , angular distribution coefficients, bands, multipolarities, $B(M1)$ , $B(M1) / B(E2)$ , configurations, alignments as a function of rotational frequency. Nilsson-Strutinsky calculations. Potential energy surface calculations. $^{152}\text{Gd}$ , $^{154}\text{Dy}$ , $^{156}\text{Er}$ , $^{158}\text{Yb}$ , $^{160}\text{Hf}$ ; level and configuration systematics. JOUR PRVCA 79 044324

**A=157**

$^{157}\text{Er}$	2008SIZW	NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, \text{X})^{156}\text{Er} / ^{157}\text{Er} / ^{158}\text{Er}$ , $E=215$ MeV; $^{116}\text{Cd}(^{48}\text{Ca}, \text{X})^{159}\text{Er} / ^{160}\text{Er}$ , $E=215$ MeV; measured $E\gamma$ , $I\gamma$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P136,Simpson
	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $E\gamma$ , $I\gamma$ , $x\gamma$ -coin., $x\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
$^{157}\text{Tm}$	2008VAZU	RADIOACTIVITY $^{157}\text{Yb}(\text{EC})$ [from $W(\text{p}, \text{X})$ , $E$ not given]; measured $E\gamma$ , $I\gamma$ , ce, ICC, $E\alpha$ , $I\alpha$ ; $^{157}\text{Tm}$ , $^{157}\text{Yb}$ ; deduced levels, $J\pi$ , Q-value. CONF Moscow,P87,Vaganov

KEYNUMBERS AND KEYWORDS

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**A=157 (continued)**

$^{157}\text{Yb}$	2008VAZV	RADIOACTIVITY $^{157}\text{Yb}(\text{EC})$ [from $\text{W}(\text{p}, \text{X})$ , E not given]; measured $\text{E}\gamma$ , $\text{I}\gamma$ , ce, ICC, $\text{E}\alpha$ , $\text{I}\alpha$ ; $^{157}\text{Tm}$ , $^{157}\text{Yb}$ ; deduced levels, $\text{J}\pi$ , Q-value. CONF Moscow,P87,Vaganov
	2008XU09	RADIOACTIVITY $^{153}\text{Er}$ , $^{157}\text{Yb}$ , $^{209}\text{Fr}$ , $^{128}\text{Ce}$ , $^{130}\text{Ce}$ , $^{128}\text{Pr}$ , $^{130}\text{Pm}$ , $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays, $\text{E}\gamma$ , $\text{I}\gamma$ , $\text{x}\gamma\text{-coin.}$ , $\text{x}\gamma\gamma\text{-coin.}$ ; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1
$^{157}\text{W}$	2008PAZV	NUCLEAR REACTIONS $^{106}\text{Cd}(^{58}\text{Ni}, 3\text{N})$ , E=290, 300, 310 MeV; $^{161}\text{Os}$ , $^{157}\text{W}$ ; measured $\text{E}\alpha$ , $\text{I}\alpha$ , $\text{E}\gamma$ , $\text{I}\gamma$ ; deduced $\text{T}_{1/2}$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P172,Page

**A=158**

$^{158}\text{Sm}$	2009SI21	RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma\text{-coin}$ , half-lives. $^{156}\text{Nd}$ , $^{156,158,160}\text{Sm}$ ; deduced levels, J, $\pi$ , isomers, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304
$^{158}\text{Gd}$	2009AGZY	NUCLEAR REACTIONS $^{95}\text{Mo}(\text{n}, \gamma)$ , $^{151,153}\text{Eu}(\text{n}, \gamma)$ , $^{155,157}\text{Gd}(\text{n}, \gamma)$ , E=10 meV-100 keV; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma$ multiplicity using DANCE $\text{BaF}_2$ array, In, En using TOF method; deduced J, $\pi$ of n-resonances using DICEBOX code. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P11,Agvaanluvsan
	2009G009	NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
$^{158}\text{Tb}$	2009LU16	NUCLEAR REACTIONS $^{158}\text{Dy}(\text{n}, \text{p})$ , $^{156}\text{Dy}(\text{n}, \alpha)$ , $^{160}\text{Dy}(\text{n}, \text{p})$ , E = 14.7 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ from neutron activation; deduced $\sigma$ and their uncertainties. Comparison with nuclear model calculations. JOUR ARISE 67 1892
$^{158}\text{Dy}$	2008VAZU	RADIOACTIVITY $^{156,158,160}\text{Ho}(\text{EC})$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma\text{-coin}$ , ce, ICC; $^{156,158,160}\text{Dy}$ ; deduced levels with $\text{J}\pi=0^+$ , $\rho^2$ , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
$^{158}\text{Ho}$	2008VAZU	RADIOACTIVITY $^{156,158,160}\text{Ho}(\text{EC})$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma\text{-coin}$ , ce, ICC; $^{156,158,160}\text{Dy}$ ; deduced levels with $\text{J}\pi=0^+$ , $\rho^2$ , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
$^{158}\text{Er}$	2008SIZW	NUCLEAR REACTIONS $^{114}\text{Cd}(^{48}\text{Ca}, \text{X})^{156}\text{Er} / ^{157}\text{Er} / ^{158}\text{Er}$ , E=215 MeV; $^{116}\text{Cd}(^{48}\text{Ca}, \text{X})^{159}\text{Er} / ^{160}\text{Er}$ , E=215 MeV; measured $\text{E}\gamma$ , $\text{I}\gamma$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P136,Simpson

KEYNUMBERS AND KEYWORDS

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**A=158 (continued)**

- <sup>158</sup>Yb    2009PA17    NUCLEAR REACTIONS <sup>114</sup>Cd(<sup>48</sup>Ca, 6n), E=215 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, angular distributions. <sup>156</sup>Er; deduced levels, J,  $\pi$ , angular distribution coefficients, bands, multipolarities, B(M1), B(M1) / B(E2), configurations, alignments as a function of rotational frequency. Nilsson-Strutinsky calculations. Potential energy surface calculations. <sup>152</sup>Gd, <sup>154</sup>Dy, <sup>156</sup>Er, <sup>158</sup>Yb, <sup>160</sup>Hf; level and configuration systematics. JOUR PRVCA 79 044324
- <sup>158</sup>Hf    2009OD02    RADIOACTIVITY <sup>162,163,164</sup>W, <sup>167,168</sup>Os, <sup>168,169</sup>Ir, <sup>168,169,170</sup>Pt( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 064309

**A=159**

- <sup>159</sup>Sm    2009UR04    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array. <sup>159</sup>Sm; deduced levels, J,  $\pi$  and half-lives. Systematics of 11 / 2[505] band in N=87-97 Sm, Gd and Dy nuclei. Comparison with quasiparticle rotor model calculations. JOUR PRVCA 80 037301
- <sup>159</sup>Ho    2008IBZZ    RADIOACTIVITY <sup>159,161</sup>Er(EC); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, ce; <sup>159,161</sup>Ho; deduced levels, rotational band. HPGe-detectors, mini-orange magnetic spectrometer. CONF Moscow,P91,Ibraheem
- <sup>159</sup>Er    2008IBZZ    RADIOACTIVITY <sup>159,161</sup>Er(EC); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, ce; <sup>159,161</sup>Ho; deduced levels, rotational band. HPGe-detectors, mini-orange magnetic spectrometer. CONF Moscow,P91,Ibraheem
- 2008SIZW    NUCLEAR REACTIONS <sup>114</sup>Cd(<sup>48</sup>Ca, X)<sup>156</sup>Er / <sup>157</sup>Er / <sup>158</sup>Er, E=215 MeV; <sup>116</sup>Cd(<sup>48</sup>Ca, X)<sup>159</sup>Er / <sup>160</sup>Er, E=215 MeV; measured E $\gamma$ , I $\gamma$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P136,Simpson
- <sup>159</sup>Hf    2009OD02    RADIOACTIVITY <sup>162,163,164</sup>W, <sup>167,168</sup>Os, <sup>168,169</sup>Ir, <sup>168,169,170</sup>Pt( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 064309

**A=160**

- <sup>160</sup>Sm    2009SI21    RADIOACTIVITY <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, half-lives. <sup>156</sup>Nd, <sup>156,158,160</sup>Sm; deduced levels, J,  $\pi$ , isomers, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304
- <sup>160</sup>Gd    2009G009    NUCLEAR MOMENTS <sup>140,142</sup>Xe, <sup>146</sup>Ba, <sup>146,148</sup>Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup>Xe, <sup>130,132,134,136,138,140,142,144,146</sup>Ba, <sup>140,142,146,148</sup>Ce, <sup>148,150</sup>Nd, <sup>152,154</sup>Sm, <sup>154,156,158,160</sup>Gd, <sup>160,162,164</sup>Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup>Ba, <sup>146,148</sup>Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
- 2009G033    NUCLEAR REACTIONS <sup>160</sup>Gd(n, n' $\gamma$ ), E=fast; measured E $\gamma$ , I $\gamma$ ; deduced level scheme, rotational bands,  $\sigma(\theta)$  of gamma rays. Comparison with quasiparticle-phonon model. JOUR PANUE 72 1799

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**A=160 (continued)**

<sup>160</sup> Tb	2009LU16	NUCLEAR REACTIONS <sup>158</sup> Dy(n, p), <sup>156</sup> Dy(n, α), <sup>160</sup> Dy(n, p), E = 14.7 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> from neutron activation; deduced σ and their uncertainties. Comparison with nuclear model calculations. JOUR ARISE 67 1892
<sup>160</sup> Dy	2008VAZU	RADIOACTIVITY <sup>156,158,160</sup> Ho(EC); measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin, ce, ICC; <sup>156,158,160</sup> Dy; deduced levels with Jπ=0 <sup>+</sup> , ρ <sup>2</sup> , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
	2009G009	NUCLEAR MOMENTS <sup>140,142</sup> Xe, <sup>146</sup> Ba, <sup>146,148</sup> Ce; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. <sup>130,132,134,136,138,140,142</sup> Xe, <sup>130,132,134,136,138,140,142,144,146</sup> Ba, <sup>140,142,146,148</sup> Ce, <sup>148,150</sup> Nd, <sup>152,154</sup> Sm, <sup>154,156,158,160</sup> Gd, <sup>160,162,164</sup> Dy; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. <sup>146</sup> Ba, <sup>146,148</sup> Ce; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
	2009KAZY	RADIOACTIVITY <sup>160</sup> Ho(EC) [from <sup>165</sup> Ho(p, 6n), E=95 MeV]; measured E <sub>γ</sub> , I <sub>γ</sub> . <sup>160</sup> Dy; deduced levels. Synchrocyclotron, ion-exchanged separation. CONF Cheboksary,P74,Kalinnikov
<sup>160</sup> Ho	2008VAZU	RADIOACTIVITY <sup>156,158,160</sup> Ho(EC); measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin, ce, ICC; <sup>156,158,160</sup> Dy; deduced levels with Jπ=0 <sup>+</sup> , ρ <sup>2</sup> , Rasmussen parameters. ISOL-YaSNAPP-2 facility. CONF Moscow,P88,Vaganov
	2009KAZY	RADIOACTIVITY <sup>160</sup> Ho(EC) [from <sup>165</sup> Ho(p, 6n), E=95 MeV]; measured E <sub>γ</sub> , I <sub>γ</sub> . <sup>160</sup> Dy; deduced levels. Synchrocyclotron, ion-exchanged separation. CONF Cheboksary,P74,Kalinnikov
<sup>160</sup> Er	2008SIZW	NUCLEAR REACTIONS <sup>114</sup> Cd( <sup>48</sup> Ca, X) <sup>156</sup> Er / <sup>157</sup> Er / <sup>158</sup> Er, E=215 MeV; <sup>116</sup> Cd( <sup>48</sup> Ca, X) <sup>159</sup> Er / <sup>160</sup> Er, E=215 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> . CONF Cappadocia (Nuclear Physics and Astrophysics),P136,Simpson
<sup>160</sup> Tm	2008LU17	NUCLEAR REACTIONS <sup>146</sup> Nd( <sup>19</sup> F, 5n), E=102 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin.; deduced J, π, high-spin states, level scheme. JOUR IMPEE 17 S01 21
<sup>160</sup> Hf	2009OD02	RADIOACTIVITY <sup>162,163,164</sup> W, <sup>167,168</sup> Os, <sup>168,169</sup> Ir, <sup>168,169,170</sup> Pt(α); measured E <sub>α</sub> , I <sub>α</sub> . JOUR PRVCA 79 064309
	2009PA17	NUCLEAR REACTIONS <sup>114</sup> Cd( <sup>48</sup> Ca, 6n), E=215 MeV; measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin, angular distributions. <sup>156</sup> Er; deduced levels, J, π, angular distribution coefficients, bands, multipolarities, B(M1), B(M1) / B(E2), configurations, alignments as a function of rotational frequency. Nilsson-Strutinsky calculations. Potential energy surface calculations. <sup>152</sup> Gd, <sup>154</sup> Dy, <sup>156</sup> Er, <sup>158</sup> Yb, <sup>160</sup> Hf; level and configuration systematics. JOUR PRVCA 79 044324

**A=161**

<sup>161</sup> Ho	2008IBZZ	RADIOACTIVITY <sup>159,161</sup> Er(EC); measured E <sub>γ</sub> , I <sub>γ</sub> , γγ-coin, ce; <sup>159,161</sup> Ho; deduced levels, rotational band. HPGe-detectors, mini-orange magnetic spectrometer. CONF Moscow,P91,Ibraheem
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**A=161 (continued)**

$^{161}\text{Er}$	2008IBZZ	RADIOACTIVITY $^{159,161}\text{Er}(\text{EC})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, ce; $^{159,161}\text{Ho}$ ; deduced levels, rotational band. HPGe-detectors, mini-orange magnetic spectrometer. CONF Moscow,P91,Ibraheem
$^{161}\text{Os}$	2008PAZV	NUCLEAR REACTIONS $^{106}\text{Cd}(^{58}\text{Ni}, 3\text{N})$ , $E=290, 300, 310$ MeV; $^{161}\text{Os}$ , $^{157}\text{W}$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ . CONF Cappadocia (Nuclear Physics and Astrophysics),P172,Page

**A=162**

$^{162}\text{Dy}$	2009G009	NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316
	2009NY01	NUCLEAR REACTIONS $^{163,164}\text{Dy}(^3\text{He}, \alpha)$ , $(^3\text{He}, ^3\text{He}')$ , E not given; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced level densities, $\gamma$ -ray strength functions, pygmy resonance. JOUR APOBB 40 593
$^{162}\text{W}$	2009OD02	RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309

**A=163**

$^{163}\text{Dy}$	2009NY01	NUCLEAR REACTIONS $^{163,164}\text{Dy}(^3\text{He}, \alpha)$ , $(^3\text{He}, ^3\text{He}')$ , E not given; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced level densities, $\gamma$ -ray strength functions, pygmy resonance. JOUR APOBB 40 593
$^{163}\text{W}$	2008J0ZX	NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ , $E=270$ MeV; $^{163}\text{Re}$ , $^{163}\text{W}$ ; measured $E\gamma$ , $I\gamma$ ; deduced yrast bands. CONF Cappadocia (Nuclear Physics and Astrophysics),P154,Joss
	2009G016	RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314
	2009OD02	RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309
$^{163}\text{Re}$	2008J0ZX	NUCLEAR REACTIONS $^{106}\text{Cd}(^{60}\text{Ni}, \text{X})$ , $E=270$ MeV; $^{163}\text{Re}$ , $^{163}\text{W}$ ; measured $E\gamma$ , $I\gamma$ ; deduced yrast bands. CONF Cappadocia (Nuclear Physics and Astrophysics),P154,Joss
	2009G016	RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314

KEYNUMBERS AND KEYWORDS

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**A=164**

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| $^{164}\text{Dy}$ | 2009G009 | NUCLEAR MOMENTS $^{140,142}\text{Xe}$ , $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; measured g factors of first 2+ states by integral perturbed angular correlation (IPAC) method. $^{130,132,134,136,138,140,142}\text{Xe}$ , $^{130,132,134,136,138,140,142,144,146}\text{Ba}$ , $^{140,142,146,148}\text{Ce}$ , $^{148,150}\text{Nd}$ , $^{152,154}\text{Sm}$ , $^{154,156,158,160}\text{Gd}$ , $^{160,162,164}\text{Dy}$ ; systematics of experimental and theoretical g factors and ratio of proton to neutron holes outside the nearest closed shell. Comparison with interacting boson model-2 and rotation-vibration model calculations. $^{146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced ratio of neutron to proton deformation. JOUR PRVCA 79 034316 |
|                   | 2009NY01 | NUCLEAR REACTIONS $^{163,164}\text{Dy}(^3\text{He}, \alpha)$ , $(^3\text{He}, ^3\text{He}')$ , E not given; measured $E\gamma$ , $I\gamma$ , $E\alpha$ , $I\alpha$ ; deduced level densities, $\gamma$ -ray strength functions, pygmy resonance. JOUR APOBB 40 593  |
| $^{164}\text{Ho}$ | 2009FA03 | NUCLEAR REACTIONS $^{165}\text{Ho}$ , $^{180}\text{W}(n, 2n)$ , $E=14$ MeV; measured $E\gamma$ , $I\gamma$ , cross sections using the activation technique. JOUR RMEAE 44 68  |
| $^{164}\text{W}$  | 2009G016 | RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314   |
|                   | 2009D02  | RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309  |
| $^{164}\text{Re}$ | 2009G016 | RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314   |
|                   | 2009D02  | RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309  |
| $^{164}\text{Os}$ | 2009G016 | RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314   |
|                   | 2009D02  | RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309  |

**A=165**

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| $^{165}\text{Tm}$ | 2009TA01 | NUCLEAR REACTIONS $\text{Er}(p, xn)^{165}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ , excitation function using the stacked foil activation technique. Compared results to model calculations. JOUR ARISE 67 243  |
|                   | 2009TA16 | NUCLEAR REACTIONS $\text{Y}(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ , $\text{Y}(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ , $\text{Y}(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789 |
| $^{165}\text{Re}$ | 2009G016 | RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314  |
|                   | 2009D02  | RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309   |
| $^{165}\text{Os}$ | 2009G016 | RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314  |
|                   | 2009D02  | RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309   |

## A=166

$^{166}\text{Eu}$	2007SAZO	NUCLEAR REACTIONS $^{238}\text{U}(\text{p}, \text{f})^{166}\text{Eu}$ , E=33 MeV; measured $E_\gamma$ , $\beta\gamma$ -coin., $\gamma\gamma$ -coin., particle- $\gamma$ -coin., x-rays, time; deduced J, $\pi$ of $^{166}\text{Eu}$ , $^{166}\text{Gd}$ . REPT JAEA-Review 2007-046,P32,Sato
	2007SAZO	RADIOACTIVITY $^{166}\text{Eu}$ [from $^{238}\text{U}(\text{p}, \text{f})$ , E=33 MeV]; measured $E_\gamma$ , $\beta\gamma$ -coin., $\gamma\gamma$ -coin., particle- $\gamma$ -coin., x-rays, time; deduced half-life. REPT JAEA-Review 2007-046,P32,Sato
$^{166}\text{Ho}$	2009RA01	NUCLEAR REACTIONS $^{165}\text{Ho}(\text{n}, \gamma)$ , E=thermal; measured $E_\gamma$ , $I_\gamma$ , cross section; deduced resonance integral. Compared results to existing data and evaluated databases. JOUR RAACA 97 63
$^{166}\text{Er}$	2008WIZX	NUCLEAR REACTIONS $^{154}\text{Sm}$ , $^{166}\text{Er}(\gamma, \gamma')$ , E not given; measured $I_\gamma$ , $E_\gamma$ , $I(\text{ce})$ , $E(\text{ce})$ populated via Coulomb excitation; deduced monopole transition strength, $B(E2)$ , deformation. REPT MLL 2007 Annual,P16,Wimmer
	2009SH19	NUCLEAR REACTIONS $^{58}\text{Ni}$ , $^{89}\text{Y}$ , $^{90}\text{Zr}$ , $^{120}\text{Sn}$ , $^{142}\text{Nd}$ , $^{166}\text{Er}$ , $^{208}\text{Pb}(\text{p}, \text{p}')$ , E=200 MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305
$^{166}\text{Tm}$	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}({}^{20}\text{Ne}, 2\text{np})$ , $({}^{20}\text{Ne}, 3\text{np})$ , $({}^{20}\text{Ne}, \alpha)$ , $({}^{20}\text{Ne}, 2\text{n}\alpha)$ , $({}^{20}\text{Ne}, 3\text{np}\alpha)$ , $({}^{20}\text{Ne}, 4\text{np}\alpha)$ , $({}^{20}\text{Ne}, 6\text{np}\alpha)$ , $({}^{20}\text{Ne}, \text{n}2\text{p}\alpha)$ , $({}^{20}\text{Ne}, 2\alpha)$ , $({}^{20}\text{Ne}, \text{n}2\alpha)$ , $({}^{20}\text{Ne}, 2\text{n}2\alpha)$ , $({}^{20}\text{Ne}, 3\text{n}2\alpha)$ , $({}^{20}\text{Ne}, 4\text{n}2\alpha)$ , $({}^{20}\text{Ne}, 3\text{np}2\alpha)$ , $({}^{20}\text{Ne}, 3\text{n}4\alpha)$ , E=164 MeV; measured $E_\gamma$ , $I_\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
	2009TA16	NUCLEAR REACTIONS $\text{Y}(\text{p}, \text{xn})^{167}\text{Lu} / {}^{170}\text{Lu} / {}^{171}\text{Lu} / {}^{172}\text{Lu} / {}^{173}\text{Lu}$ , $\text{Y}(\text{p}, \text{X})^{166}\text{Yb} / {}^{175}\text{Yb}$ , $\text{Y}(\text{p}, \text{X})^{165}\text{Tm} / {}^{166}\text{Tm} / {}^{167}\text{Tm} / {}^{168}\text{Tm} / {}^{172}\text{Tm} / {}^{173}\text{Tm}$ , E<70 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma(\text{E})$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
$^{166}\text{Yb}$	2009HE03	NUCLEAR REACTIONS $^{141}\text{Pr}(\text{d}, \text{X})^{135}\text{Ce} / {}^{135}\text{La} / {}^{137}\text{Ce} / {}^{139}\text{Ce} / {}^{139}\text{Nd} / {}^{140}\text{Nd} / {}^{141}\text{Nd} / {}^{142}\text{Pr}$ , E < 40 MeV; $^{169}\text{Tm}(\text{d}, \text{X})^{166}\text{Yb} / {}^{167}\text{Tm} / {}^{169}\text{Tm} / {}^{169}\text{Yb}$ , E < 40 MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727
	2009TA16	NUCLEAR REACTIONS $\text{Y}(\text{p}, \text{xn})^{167}\text{Lu} / {}^{170}\text{Lu} / {}^{171}\text{Lu} / {}^{172}\text{Lu} / {}^{173}\text{Lu}$ , $\text{Y}(\text{p}, \text{X})^{166}\text{Yb} / {}^{175}\text{Yb}$ , $\text{Y}(\text{p}, \text{X})^{165}\text{Tm} / {}^{166}\text{Tm} / {}^{167}\text{Tm} / {}^{168}\text{Tm} / {}^{172}\text{Tm} / {}^{173}\text{Tm}$ , E<70 MeV; measured $E_\gamma$ , $I_\gamma$ ; deduced $\sigma(\text{E})$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
	2009TI09	NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(\text{n}, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(\text{n}, \text{n}')$ , $\text{Pb}(\text{p}, \text{xn})^{203}\text{Bi} / {}^{204}\text{Bi} / {}^{205}\text{Bi} / {}^{206}\text{Bi}$ , $\text{In}(\text{p}, \text{xn})^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(\text{p}, 3\text{n})$ , $^{63}\text{Cu}(\text{p}, 2\text{n})$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(\text{p}, 4\text{n})$ , E=0.8 GeV; measured $E_\gamma$ , $I_\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
$^{166}\text{Os}$	2009G016	RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E_\alpha$ . JOUR PRVCA 79 064314



KEYNUMBERS AND KEYWORDS

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**A=166** (*continued*)

20090D02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309

**A=167**

$^{167}\text{Tm}$  2009HE03 NUCLEAR REACTIONS  $^{141}\text{Pr}(d, X)^{135}\text{Ce}$  /  $^{135}\text{La}$  /  $^{137}\text{Ce}$  /  $^{139}\text{Ce}$  /  $^{139}\text{Nd}$  /  $^{140}\text{Nd}$  /  $^{141}\text{Nd}$  /  $^{142}\text{Pr}$ ,  $E < 40$  MeV;  $^{169}\text{Tm}(d, X)^{166}\text{Yb}$  /  $^{167}\text{Tm}$  /  $^{169}\text{Tm}$  /  $^{169}\text{Yb}$ ,  $E < 40$  MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727

2009TA16 NUCLEAR REACTIONS  $Y(p, xn)^{167}\text{Lu}$  /  $^{170}\text{Lu}$  /  $^{171}\text{Lu}$  /  $^{172}\text{Lu}$  /  $^{173}\text{Lu}$ ,  $Y(p, X)^{166}\text{Yb}$  /  $^{175}\text{Yb}$ ,  $Y(p, X)^{165}\text{Tm}$  /  $^{166}\text{Tm}$  /  $^{167}\text{Tm}$  /  $^{168}\text{Tm}$  /  $^{172}\text{Tm}$  /  $^{173}\text{Tm}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789

$^{167}\text{Lu}$  2009TA16 NUCLEAR REACTIONS  $Y(p, xn)^{167}\text{Lu}$  /  $^{170}\text{Lu}$  /  $^{171}\text{Lu}$  /  $^{172}\text{Lu}$  /  $^{173}\text{Lu}$ ,  $Y(p, X)^{166}\text{Yb}$  /  $^{175}\text{Yb}$ ,  $Y(p, X)^{165}\text{Tm}$  /  $^{166}\text{Tm}$  /  $^{167}\text{Tm}$  /  $^{168}\text{Tm}$  /  $^{172}\text{Tm}$  /  $^{173}\text{Tm}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789

$^{167}\text{Ta}$  2009HA33 NUCLEAR REACTIONS  $^{120}\text{Sn}(^{51}\text{V}, 4n)$ ,  $E=235$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin and  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{167}\text{Ta}$ ; deduced levels,  $J$ ,  $\pi$ , triaxial superdeformed bands, normal deformed bands, dynamic moments of inertia, alignments and rotational frequency. Comparison with ultimate cranked (UC) calculations. JOUR PRVCA 80 041304

$^{167}\text{Os}$  2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314

20090D02 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{78}\text{Kr}, n2p)$ ,  $E=335, 357, 365$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , and half-lives by recoil-distance method.  $^{167}\text{Os}$ ; deduced levels,  $J$ ,  $\pi$ , bands, and multipolarity.  $^{168}\text{Os}$ ; deduced levels. Recoil-decay tagging technique.  $A=161-173$ , odd- $A$  Yb, Hf, W and Os; systematics of experimental aligned momentum as a function of rotational frequency.  $Z=64-78$ ,  $N=91$ ; systematics of yrast states. Comparison with cranked shell-model calculations. JOUR PRVCA 79 064309

20090D02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309

2009SA27 RADIOACTIVITY  $^{172}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}$ ,  $^{173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064315

$^{167}\text{Ir}$  2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314

**A=168**

$^{168}\text{Dy}$  2008SOZZ NUCLEAR REACTIONS  $^{170}\text{Er}(^{82}\text{Se}, X)$ ,  $E=460$  MeV;  $^{168}\text{Dy}$ ; measured  $I\gamma$ ,  $E\gamma$ ,  $\gamma\gamma$ -coin; deduced  $J$ ,  $\pi$ , rotational bands. REPT arXiv:0903.3819v1 [nucl-ex]

A=168 (*continued*)

- $^{168}\text{Tm}$  2009TA16 NUCLEAR REACTIONS  $Y(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ ,  $Y(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ ,  $Y(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
- $^{168}\text{Hf}$  2009C003 NUCLEAR REACTIONS  $^{124}\text{Sn}(^{48}\text{Ti}, 4n)$ ,  $E = 190$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives of g.s. band members using recoil-distance Doppler-shift method.  $^{168}\text{Hf}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(E2)$ . Comparison with predictions of geometrical confined  $\beta$  soft rotor model involving centrifugal stretching. JOUR PRVCA 79 024307
- $^{168}\text{Ta}$  2008QIZZ NUCLEAR REACTIONS  $^{145}\text{Nd}(^{27}\text{Al}, 4n)$ ,  $E = 140$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $J$ ,  $\pi$ , rotational bands,  $B(M1) / B(E2)$ . REPT JAEA-Review 2008-054,P31,Qiang
- $^{168}\text{Os}$  2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314
- 2009D01 RADIOACTIVITY  $^{175}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{172,174,175}\text{Pt}$ ,  $^{174,175}\text{Au}$ ,  $^{175,176}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 051304
- 2009D02 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{78}\text{Kr}, n2p)$ ,  $E = 335, 357, 365$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ , and half-lives by recoil-distance method.  $^{167}\text{Os}$ ; deduced levels,  $J$ ,  $\pi$ , bands, and multipolarity.  $^{168}\text{Os}$ ; deduced levels. Recoil-decay tagging technique.  $A = 161-173$ , odd- $A$  Yb, Hf, W and Os; systematics of experimental aligned momentum as a function of rotational frequency.  $Z = 64-78$ ,  $N = 91$ ; systematics of yrast states. Comparison with cranked shell-model calculations. JOUR PRVCA 79 064309
- 2009D02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309
- 2009G03 NUCLEAR REACTIONS  $^{136}\text{Xe}(^{136}\text{Xe}, xn)^{269}\text{Hs} / ^{270}\text{Hs} / ^{271}\text{Hs}$ ,  $E = 750$  MeV; measured  $E\alpha$ ,  $I\alpha$ , upper limit of production  $\sigma$  for  $Z = 108$  element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels.  $\text{Ti}(^{136}\text{Xe}, xn)^{168}\text{Os} / ^{169}\text{Os} / ^{170}\text{Os} / ^{171}\text{Os} / ^{172}\text{Os} /$ ,  $E = 750$  MeV; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 024608
- 2009SA27 RADIOACTIVITY  $^{172}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}$ ,  $^{173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064315
- $^{168}\text{Ir}$  2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314
- 2009D02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309
- 2009SA27 RADIOACTIVITY  $^{172}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}$ ,  $^{173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064315
- $^{168}\text{Pt}$  2009G016 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{78}\text{Kr}, 2n)$ ,  $E = 335$  MeV;  $^{94}\text{Mo}(^{78}\text{Kr}, 3n)$ ,  $E = 348$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{168,169}\text{Pt}$ ; deduced levels,  $J$ ,  $\pi$ , bands. Recoil-decay tagging technique. Comparison with interacting boson model calculations.  $A = 168-202$ ,  $Z = 78$ ; systematics of  $E(4+) / E(2+)$ . JOUR PRVCA 79 064314
- 2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314
- 2009D02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309

KEYNUMBERS AND KEYWORDS

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**A=168 (continued)**

2009SA27 RADIOACTIVITY  $^{172}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}$ ,  $^{173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064315

**A=169**

$^{169}\text{Tm}$  2009HE03 NUCLEAR REACTIONS  $^{141}\text{Pr}(d, X)^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ ,  $E < 40$  MeV;  $^{169}\text{Tm}(d, X)^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ ,  $E < 40$  MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727

$^{169}\text{Yb}$  2009HE03 NUCLEAR REACTIONS  $^{141}\text{Pr}(d, X)^{135}\text{Ce} / ^{135}\text{La} / ^{137}\text{Ce} / ^{139}\text{Ce} / ^{139}\text{Nd} / ^{140}\text{Nd} / ^{141}\text{Nd} / ^{142}\text{Pr}$ ,  $E < 40$  MeV;  $^{169}\text{Tm}(d, X)^{166}\text{Yb} / ^{167}\text{Tm} / ^{169}\text{Tm} / ^{169}\text{Yb}$ ,  $E < 40$  MeV; measured excitation functions using the stacked foil activation technique. JOUR NIMBE 267 727

$^{169}\text{Lu}$  2009TA17 NUCLEAR REACTIONS  $Y(p, xn)^{169}\text{Lu}$ ,  $E < 70$  MeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2802

$^{169}\text{Os}$  2009OG03 NUCLEAR REACTIONS  $^{136}\text{Xe}(^{136}\text{Xe}, xn)^{269}\text{Hs} / ^{270}\text{Hs} / ^{271}\text{Hs}$ ,  $E=750$  MeV; measured  $E\alpha$ ,  $I\alpha$ , upper limit of production  $\sigma$  for  $Z=108$  element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels.  $Ti(^{136}\text{Xe}, xn)^{168}\text{Os} / ^{169}\text{Os} / ^{170}\text{Os} / ^{171}\text{Os} / ^{172}\text{Os} /$ ,  $E=750$  MeV; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 024608

$^{169}\text{Ir}$  2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314

2009OD02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309

$^{169}\text{Pt}$  2009G016 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{78}\text{Kr}, 2n)$ ,  $E=335$  MeV;  $^{94}\text{Mo}(^{78}\text{Kr}, 3n)$ ,  $E=348$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{168,169}\text{Pt}$ ; deduced levels,  $J$ ,  $\pi$ , bands. Recoil-decay tagging technique. Comparison with interacting boson model calculations.  $A=168-202$ ,  $Z=78$ ; systematics of  $E(4+) / E(2+)$ . JOUR PRVCA 79 064314

2009G016 RADIOACTIVITY  $^{167,168}\text{Os}$ ,  $^{167,168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064314

2009OD02 RADIOACTIVITY  $^{162,163,164}\text{W}$ ,  $^{167,168}\text{Os}$ ,  $^{168,169}\text{Ir}$ ,  $^{168,169,170}\text{Pt}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 064309

2009SA27 RADIOACTIVITY  $^{172}\text{Hg}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life.  $^{171,172}\text{Pt}$ ,  $^{172}\text{Au}$ ,  $^{173}\text{Hg}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064315

**A=170**

$^{170}\text{Yb}$  2009BE37 NUCLEAR REACTIONS  $^{172}\text{Yb}(p, t)$ ,  $E=25$  MeV; measured triton spectra,  $\sigma$ ,  $\sigma(\theta)$ .  $^{170}\text{Yb}$ ; deduced levels,  $J$ ,  $\pi$ . Comparison with sd- and sdpf-interacting boson model (IBM) calculations. JOUR PRVCA 80 044333

KEYNUMBERS AND KEYWORDS

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**A=170 (continued)**

$^{170}\text{Lu}$	2009TA16	NUCLEAR REACTIONS $Y(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ , $Y(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ , $Y(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
$^{170}\text{Os}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304
	2009OG03	NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, xn)^{269}\text{Hs} / ^{270}\text{Hs} / ^{271}\text{Hs}$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z = 108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, xn)^{168}\text{Os} / ^{169}\text{Os} / ^{170}\text{Os} / ^{171}\text{Os} / ^{172}\text{Os} /$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608
$^{170}\text{Ir}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304
$^{170}\text{Pt}$	2009G016	RADIOACTIVITY $^{167,168}\text{Os}$ , $^{167,168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064314
	2009OD02	RADIOACTIVITY $^{162,163,164}\text{W}$ , $^{167,168}\text{Os}$ , $^{168,169}\text{Ir}$ , $^{168,169,170}\text{Pt}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 064309

**A=171**

$^{171}\text{Tm}$	2009WA06	NUCLEAR REACTIONS $^{170}\text{Er}(^7\text{Li}, 2n\alpha)$ , $E = 42$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, conversion electron spectra, half-lives. $^{171}\text{Tm}$ ; deduced levels, $J$ , $\pi$ , multipolarities, conversion coefficients, bands, configurations, K-mixing matrix elements. JOUR PRVCA 79 044321
$^{171}\text{Lu}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , $E = 76, 81$ MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613
	2009TA16	NUCLEAR REACTIONS $Y(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ , $Y(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ , $Y(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
$^{171}\text{Hf}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , $E = 76, 81$ MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613
$^{171}\text{Os}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304
	2009OG03	NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, xn)^{269}\text{Hs} / ^{270}\text{Hs} / ^{271}\text{Hs}$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z = 108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, xn)^{168}\text{Os} / ^{169}\text{Os} / ^{170}\text{Os} / ^{171}\text{Os} / ^{172}\text{Os} /$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608
$^{171}\text{Ir}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304

KEYNUMBERS AND KEYWORDS

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**A=171 (continued)**

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| $^{171}\text{Pt}$ | 2009D01  | RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304 |
|                   | 2009SA27 | RADIOACTIVITY $^{172}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{171,172}\text{Pt}$ , $^{172}\text{Au}$ , $^{173}\text{Hg}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064315                         |

**A=172**

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|-------------------|----------|--|
| $^{172}\text{Tm}$ | 2009TA16 | NUCLEAR REACTIONS $Y(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ , $Y(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ , $Y(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789  |
| $^{172}\text{Lu}$ | 2009GU24 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , $E = 76, 81$ MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613  |
|                   | 2009TA16 | NUCLEAR REACTIONS $Y(p, xn)^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}$ , $Y(p, X)^{166}\text{Yb} / ^{175}\text{Yb}$ , $Y(p, X)^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}$ , $E < 70$ MeV; measured $E\gamma$ , $I\gamma$ ; deduced $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789  |
| $^{172}\text{Hf}$ | 2009CA20 | NUCLEAR REACTIONS $^{172,178}\text{Hf}(\gamma, \gamma')$ , $E = 9.5352-9.5851$ keV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced integral $\sigma$ and that induced depletion of 2nd metastable state not seen. JOUR PYLBB 679 203   |
| $^{172}\text{Os}$ | 2009G03  | NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, xn)^{269}\text{Hs} / ^{270}\text{Hs} / ^{271}\text{Hs}$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z = 108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, xn)^{168}\text{Os} / ^{169}\text{Os} / ^{170}\text{Os} / ^{171}\text{Os} / ^{172}\text{Os} /$ , $E = 750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608 |
| $^{172}\text{Pt}$ | 2009D01  | RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{172,174,175}\text{Pt}$ , $^{174,175}\text{Au}$ , $^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 051304  |
|                   | 2009SA27 | RADIOACTIVITY $^{172}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{171,172}\text{Pt}$ , $^{172}\text{Au}$ , $^{173}\text{Hg}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064315  |
| $^{172}\text{Au}$ | 2009SA27 | RADIOACTIVITY $^{172}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{171,172}\text{Pt}$ , $^{172}\text{Au}$ , $^{173}\text{Hg}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064315  |
| $^{172}\text{Hg}$ | 2009SA27 | NUCLEAR REACTIONS $^{96}\text{Ru}(^{78}\text{Kr}, 2n)$ , $E = 337-355$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{172}\text{Hg}$ ; deduced levels, $J$ , $\pi$ . Recoil-decay tagging technique. $^{172,173,174}\text{Hg}$ ; calculated total Routhian surfaces. $A = 168-206$ , $Z = 78, 80$ ; systematics of $2+$ , $4+$ and $6+$ states. Comparison with quasiparticle random phase approximation calculations. JOUR PRVCA 79 064315  |
|                   | 2009SA27 | RADIOACTIVITY $^{172}\text{Hg}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. $^{171,172}\text{Pt}$ , $^{172}\text{Au}$ , $^{173}\text{Hg}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064315  |

**A=173**

- <sup>173</sup>Tm 2009TA16 NUCLEAR REACTIONS Y(p, xn)<sup>167</sup>Lu / <sup>170</sup>Lu / <sup>171</sup>Lu / <sup>172</sup>Lu / <sup>173</sup>Lu, Y(p, X)<sup>166</sup>Yb / <sup>175</sup>Yb, Y(p, X)<sup>165</sup>Tm / <sup>166</sup>Tm / <sup>167</sup>Tm / <sup>168</sup>Tm / <sup>172</sup>Tm / <sup>173</sup>Tm, E<70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
- <sup>173</sup>Lu 2009TA16 NUCLEAR REACTIONS Y(p, xn)<sup>167</sup>Lu / <sup>170</sup>Lu / <sup>171</sup>Lu / <sup>172</sup>Lu / <sup>173</sup>Lu, Y(p, X)<sup>166</sup>Yb / <sup>175</sup>Yb, Y(p, X)<sup>165</sup>Tm / <sup>166</sup>Tm / <sup>167</sup>Tm / <sup>168</sup>Tm / <sup>172</sup>Tm / <sup>173</sup>Tm, E<70 MeV; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma(E)$ . Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789
- <sup>173</sup>Hf 2009SI10 NUCLEAR REACTIONS <sup>165</sup>Ho(<sup>20</sup>Ne, 2np), (<sup>20</sup>Ne, 3np), (<sup>20</sup>Ne,  $\alpha$ ), (<sup>20</sup>Ne, 2n $\alpha$ ), (<sup>20</sup>Ne, 3np $\alpha$ ), (<sup>20</sup>Ne, 4np $\alpha$ ), (<sup>20</sup>Ne, 6np $\alpha$ ), (<sup>20</sup>Ne, n2p $\alpha$ ), (<sup>20</sup>Ne, 2 $\alpha$ ), (<sup>20</sup>Ne, n2 $\alpha$ ), (<sup>20</sup>Ne, 2n2 $\alpha$ ), (<sup>20</sup>Ne, 3n2 $\alpha$ ), (<sup>20</sup>Ne, 4n2 $\alpha$ ), (<sup>20</sup>Ne, 3np2 $\alpha$ ), (<sup>20</sup>Ne, 3n4 $\alpha$ ), E=164 MeV; measured E $\gamma$ , I $\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
- <sup>173</sup>Ta 2009SI10 NUCLEAR REACTIONS <sup>165</sup>Ho(<sup>20</sup>Ne, 2np), (<sup>20</sup>Ne, 3np), (<sup>20</sup>Ne,  $\alpha$ ), (<sup>20</sup>Ne, 2n $\alpha$ ), (<sup>20</sup>Ne, 3np $\alpha$ ), (<sup>20</sup>Ne, 4np $\alpha$ ), (<sup>20</sup>Ne, 6np $\alpha$ ), (<sup>20</sup>Ne, n2p $\alpha$ ), (<sup>20</sup>Ne, 2 $\alpha$ ), (<sup>20</sup>Ne, n2 $\alpha$ ), (<sup>20</sup>Ne, 2n2 $\alpha$ ), (<sup>20</sup>Ne, 3n2 $\alpha$ ), (<sup>20</sup>Ne, 4n2 $\alpha$ ), (<sup>20</sup>Ne, 3np2 $\alpha$ ), (<sup>20</sup>Ne, 3n4 $\alpha$ ), E=164 MeV; measured E $\gamma$ , I $\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
- <sup>173</sup>Ir 2009AN14 RADIOACTIVITY <sup>181</sup>Tl, <sup>177</sup>Au( $\alpha$ ) [from <sup>144</sup>Sm(<sup>40</sup>Ca, 2np)]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\alpha\gamma$ -coin,  $\alpha$ - $\alpha$  correlations and half-lives; deduced branching ratios and hindrance factors. <sup>173</sup>Ir, <sup>177</sup>Au, <sup>181</sup>Tl; deduced levels, J,  $\pi$ , isomers. <sup>173</sup>Ir, <sup>173m</sup>Ir, <sup>177</sup>Au, <sup>177m</sup>Au, <sup>181</sup>Tl, <sup>181m</sup>Tl, <sup>185</sup>Bi; deduced mass excesses. Level energy systematics of odd-A Tl isotopes. JOUR PRVCA 80 024302
- <sup>173</sup>Hg 2009SA27 NUCLEAR REACTIONS <sup>96</sup>Ru(<sup>78</sup>Kr, 2n), E=337-355 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>172</sup>Hg; deduced levels, J,  $\pi$ . Recoil-decay tagging technique. <sup>172,173,174</sup>Hg; calculated total Routhian surfaces. A=168-206, Z=78, 80; systematics of 2+, 4+ and 6+ states. Comparison with quasiparticle random phase approximation calculations. JOUR PRVCA 79 064315
- 2009SA27 RADIOACTIVITY <sup>172</sup>Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. <sup>171,172</sup>Pt, <sup>172</sup>Au, <sup>173</sup>Hg( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 79 064315

**A=174**

- <sup>174</sup>Er 2009DR06 NUCLEAR REACTIONS <sup>176</sup>Yb(<sup>136</sup>Xe, X), E=840 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, isomer half-life. <sup>174</sup>Er; deduced levels, J,  $\pi$ , E1 hindrance factors, configurations. Discussed systematics of E1 hindrance factors and E(4+) / E(2+) for even-even Er, Yb, Hf, W, Os, Pt, Hg and Pb nuclides. K-mixing calculations in the framework of particle-rotor model. JOUR PRVCA 79 061303
- <sup>174</sup>Lu 2009K019 NUCLEAR REACTIONS Lu, <sup>176</sup>Lu(<sup>136</sup>Xe, X), E not given; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin and half-lives. <sup>174</sup>Lu; deduced levels, J,  $\pi$ , isomers, conversion coefficients, multipolarity, transition probabilities, configurations, hindrance factors, rotational bands, band alignments and multi-quasiparticle intrinsic states. JOUR PRVCA 80 014304

KEYNUMBERS AND KEYWORDS

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**A=174 (continued)**

$^{174}\text{Ta}$	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2\text{np}), (^{20}\text{Ne}, 3\text{np}), (^{20}\text{Ne}, \alpha), (^{20}\text{Ne}, 2\text{n}\alpha), (^{20}\text{Ne}, 3\text{np}\alpha), (^{20}\text{Ne}, 4\text{np}\alpha), (^{20}\text{Ne}, 6\text{np}\alpha), (^{20}\text{Ne}, \text{n}2\text{p}\alpha), (^{20}\text{Ne}, 2\alpha), (^{20}\text{Ne}, \text{n}2\alpha), (^{20}\text{Ne}, 2\text{n}2\alpha), (^{20}\text{Ne}, 3\text{n}2\alpha), (^{20}\text{Ne}, 4\text{n}2\alpha), (^{20}\text{Ne}, 3\text{np}2\alpha), (^{20}\text{Ne}, 3\text{n}4\alpha), E=164 \text{ MeV}; measured E\gamma, I\gamma, yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601$
$^{174}\text{W}$	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2\text{np}), (^{20}\text{Ne}, 3\text{np}), (^{20}\text{Ne}, \alpha), (^{20}\text{Ne}, 2\text{n}\alpha), (^{20}\text{Ne}, 3\text{np}\alpha), (^{20}\text{Ne}, 4\text{np}\alpha), (^{20}\text{Ne}, 6\text{np}\alpha), (^{20}\text{Ne}, \text{n}2\text{p}\alpha), (^{20}\text{Ne}, 2\alpha), (^{20}\text{Ne}, \text{n}2\alpha), (^{20}\text{Ne}, 2\text{n}2\alpha), (^{20}\text{Ne}, 3\text{n}2\alpha), (^{20}\text{Ne}, 4\text{n}2\alpha), (^{20}\text{Ne}, 3\text{np}2\alpha), (^{20}\text{Ne}, 3\text{n}4\alpha), E=164 \text{ MeV}; measured E\gamma, I\gamma, yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601$
$^{174}\text{Re}$	2007ZHZV	NUCLEAR REACTIONS $^{152}\text{Sm}(^{27}\text{Al}, 5\text{n}), E=125, 132, 140 \text{ MeV}; measured E\gamma, I\gamma, \gamma\gamma-coin.; deduced J, \pi, high-spin states, bands, signature splittings. REPT JAEA-Review 2007-046,P34,Zhang$
$^{174}\text{Pt}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha, I\alpha$ , half-life. $^{172,174,175}\text{Pt}, ^{174,175}\text{Au}, ^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha, I\alpha$ . JOUR PRVCA 79 051304
$^{174}\text{Au}$	2009OD01	RADIOACTIVITY $^{175}\text{Hg}(\alpha)$ ; measured $E\alpha, I\alpha$ , half-life. $^{172,174,175}\text{Pt}, ^{174,175}\text{Au}, ^{175,176}\text{Hg}(\alpha)$ ; measured $E\alpha, I\alpha$ . JOUR PRVCA 79 051304
$^{174}\text{Hg}$	2009OD01	NUCLEAR REACTIONS $^{92}\text{Mo}(^{86}\text{Sr}, 3\text{n}), E=403 \text{ MeV}; measured E\gamma, I\gamma, \text{ce}, E\alpha, I\alpha, (\text{recoil})\alpha-, \gamma\alpha-, (\text{ce})\alpha-coin, half-life. ^{175}\text{Hg}; deduced levels, J, \pi, isomer, bands and moments of inertia. Recoil-decay tagging technique. ^{174,175,176,177,178,179}\text{Hg}; level systematics. JOUR PRVCA 79 051304$
	2009SA27	NUCLEAR REACTIONS $^{96}\text{Ru}(^{78}\text{Kr}, 2\text{n}), E=337-355 \text{ MeV}; measured E\gamma, I\gamma, \gamma\gamma-coin. ^{172}\text{Hg}; deduced levels, J, \pi. Recoil-decay tagging technique. ^{172,173,174}\text{Hg}; calculated total Routhian surfaces. A=168-206, Z=78, 80; systematics of 2+, 4+ and 6+ states. Comparison with quasiparticle random phase approximation calculations. JOUR PRVCA 79 064315$

**A=175**

$^{175}\text{Yb}$	2009TA16	NUCLEAR REACTIONS $Y(\text{p}, \text{xn})^{167}\text{Lu} / ^{170}\text{Lu} / ^{171}\text{Lu} / ^{172}\text{Lu} / ^{173}\text{Lu}, Y(\text{p}, \text{X})^{166}\text{Yb} / ^{175}\text{Yb}, Y(\text{p}, \text{X})^{165}\text{Tm} / ^{166}\text{Tm} / ^{167}\text{Tm} / ^{168}\text{Tm} / ^{172}\text{Tm} / ^{173}\text{Tm}, E<70 \text{ MeV}; measured E\gamma, I\gamma; deduced \sigma(E). Comparison with ALICE-IPPE model code. JOUR NIMBE 267 2789$
$^{175}\text{Hf}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, \text{X})^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}, E=76, 81 \text{ MeV}; measured \sigma, angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613$
$^{175}\text{Ta}$	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2\text{np}), (^{20}\text{Ne}, 3\text{np}), (^{20}\text{Ne}, \alpha), (^{20}\text{Ne}, 2\text{n}\alpha), (^{20}\text{Ne}, 3\text{np}\alpha), (^{20}\text{Ne}, 4\text{np}\alpha), (^{20}\text{Ne}, 6\text{np}\alpha), (^{20}\text{Ne}, \text{n}2\text{p}\alpha), (^{20}\text{Ne}, 2\alpha), (^{20}\text{Ne}, \text{n}2\alpha), (^{20}\text{Ne}, 2\text{n}2\alpha), (^{20}\text{Ne}, 3\text{n}2\alpha), (^{20}\text{Ne}, 4\text{n}2\alpha), (^{20}\text{Ne}, 3\text{np}2\alpha), (^{20}\text{Ne}, 3\text{n}4\alpha), E=164 \text{ MeV}; measured E\gamma, I\gamma, yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601$

KEYNUMBERS AND KEYWORDS

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**A=175 (continued)**

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|                   | 2009SI25 | NUCLEAR REACTIONS Hf(p, X) <sup>177</sup> Lu / <sup>175</sup> Ta / <sup>176</sup> Ta / <sup>177</sup> Ta / <sup>178</sup> Ta, E=5.66-16.58 MeV; measured E $\gamma$ , Ig; deduced production $\sigma$ . Comparison with EMPIRE nuclear model code. JOUR NIMBE 267 3500   |
| <sup>175</sup> Pt | 2009OD01 | RADIOACTIVITY <sup>175</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. <sup>172,174,175</sup> Pt, <sup>174,175</sup> Au, <sup>175,176</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 051304  |
| <sup>175</sup> Au | 2009OD01 | RADIOACTIVITY <sup>175</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. <sup>172,174,175</sup> Pt, <sup>174,175</sup> Au, <sup>175,176</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 051304  |
| <sup>175</sup> Hg | 2009OD01 | NUCLEAR REACTIONS <sup>92</sup> Mo( <sup>86</sup> Sr, 3n), E=403 MeV; measured E $\gamma$ , I $\gamma$ , ce, E $\alpha$ , I $\alpha$ , (recoil) $\alpha$ -, $\gamma\alpha$ -, (ce) $\alpha$ -coin, half-life. <sup>175</sup> Hg; deduced levels, J, $\pi$ , isomer, bands and moments of inertia. Recoil-decay tagging technique. <sup>174,175,176,177,178,179</sup> Hg; level systematics. JOUR PRVCA 79 051304 |
|                   | 2009OD01 | RADIOACTIVITY <sup>175</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. <sup>172,174,175</sup> Pt, <sup>174,175</sup> Au, <sup>175,176</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 051304  |

**A=176**

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|-------------------|----------|--|
| <sup>176</sup> Lu | 2008HE17 | NUCLEAR REACTIONS <sup>175</sup> Lu(n, $\gamma$ ), E=spectrum; measured E $\gamma$ , I $\gamma$ , cross sections, isomeric ratio. JOUR ASJOA 673 434   |
| <sup>176</sup> Ta | 2009SI10 | NUCLEAR REACTIONS <sup>165</sup> Ho( <sup>20</sup> Ne, 2np), ( <sup>20</sup> Ne, 3np), ( <sup>20</sup> Ne, $\alpha$ ), ( <sup>20</sup> Ne, 2n $\alpha$ ), ( <sup>20</sup> Ne, 3np $\alpha$ ), ( <sup>20</sup> Ne, 4np $\alpha$ ), ( <sup>20</sup> Ne, 6np $\alpha$ ), ( <sup>20</sup> Ne, n2p $\alpha$ ), ( <sup>20</sup> Ne, 2 $\alpha$ ), ( <sup>20</sup> Ne, n2 $\alpha$ ), ( <sup>20</sup> Ne, 2n2 $\alpha$ ), ( <sup>20</sup> Ne, 3n2 $\alpha$ ), ( <sup>20</sup> Ne, 4n2 $\alpha$ ), ( <sup>20</sup> Ne, 3np2 $\alpha$ ), ( <sup>20</sup> Ne, 3n4 $\alpha$ ), E=164 MeV; measured E $\gamma$ , I $\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601 |
|                   | 2009SI25 | NUCLEAR REACTIONS Hf(p, X) <sup>177</sup> Lu / <sup>175</sup> Ta / <sup>176</sup> Ta / <sup>177</sup> Ta / <sup>178</sup> Ta, E=5.66-16.58 MeV; measured E $\gamma$ , Ig; deduced production $\sigma$ . Comparison with EMPIRE nuclear model code. JOUR NIMBE 267 3500   |
| <sup>176</sup> W  | 2009SI10 | NUCLEAR REACTIONS <sup>165</sup> Ho( <sup>20</sup> Ne, 2np), ( <sup>20</sup> Ne, 3np), ( <sup>20</sup> Ne, $\alpha$ ), ( <sup>20</sup> Ne, 2n $\alpha$ ), ( <sup>20</sup> Ne, 3np $\alpha$ ), ( <sup>20</sup> Ne, 4np $\alpha$ ), ( <sup>20</sup> Ne, 6np $\alpha$ ), ( <sup>20</sup> Ne, n2p $\alpha$ ), ( <sup>20</sup> Ne, 2 $\alpha$ ), ( <sup>20</sup> Ne, n2 $\alpha$ ), ( <sup>20</sup> Ne, 2n2 $\alpha$ ), ( <sup>20</sup> Ne, 3n2 $\alpha$ ), ( <sup>20</sup> Ne, 4n2 $\alpha$ ), ( <sup>20</sup> Ne, 3np2 $\alpha$ ), ( <sup>20</sup> Ne, 3n4 $\alpha$ ), E=164 MeV; measured E $\gamma$ , I $\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601 |
| <sup>176</sup> Hg | 2009OD01 | NUCLEAR REACTIONS <sup>92</sup> Mo( <sup>86</sup> Sr, 3n), E=403 MeV; measured E $\gamma$ , I $\gamma$ , ce, E $\alpha$ , I $\alpha$ , (recoil) $\alpha$ -, $\gamma\alpha$ -, (ce) $\alpha$ -coin, half-life. <sup>175</sup> Hg; deduced levels, J, $\pi$ , isomer, bands and moments of inertia. Recoil-decay tagging technique. <sup>174,175,176,177,178,179</sup> Hg; level systematics. JOUR PRVCA 79 051304   |
|                   | 2009OD01 | RADIOACTIVITY <sup>175</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. <sup>172,174,175</sup> Pt, <sup>174,175</sup> Au, <sup>175,176</sup> Hg( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 051304  |



## A=177

- $^{177}\text{Lu}$  2009LIZZ NUCLEAR REACTIONS Au, Nb, Ta(p, X), E=160, 247, 325 MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{87}\text{Y}$ ,  $^{177}\text{Lu}$ ,  $^{193,195}\text{Hg}$ ,  $^{194}\text{Ir}$ ,  $^{196}\text{Au}$ ; deduced isomeric yield ratios depending on Ep. Activation Method. CONF  
Cheboksary,P142,Libanova
- 2009LU09 NUCLEAR REACTIONS  $^{181}\text{Ta}(n, n'\alpha)$ , (n, t), (n, d), (n,  $\alpha$ ), (n, p), (n, 2n) $^{177}\text{Lu}$  /  $^{179}\text{Hf}$  /  $^{180}\text{Hf}$  /  $^{178}\text{Lu}$  /  $^{181}\text{Hf}$  /  $^{180}\text{Ta}$ , E=13.5, 14.1, 14.5, 14.7 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ .  $^{27}\text{Al}(n, \alpha)^{24}\text{Na}$ , E=13.5, 14.1, 14.5, 14.7 MeV; measured  $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603
- 2009SI25 NUCLEAR REACTIONS Hf(p, X) $^{177}\text{Lu}$  /  $^{175}\text{Ta}$  /  $^{176}\text{Ta}$  /  $^{177}\text{Ta}$  /  $^{178}\text{Ta}$ , E=5.66-16.58 MeV; measured  $E\gamma$ , Ig; deduced production  $\sigma$ . Comparison with EMPIRE nuclear model code. JOUR NIMBE 267 3500
- $^{177}\text{Ta}$  2009SI10 NUCLEAR REACTIONS  $^{165}\text{Ho}(^{20}\text{Ne}, 2np)$ , ( $^{20}\text{Ne}, 3np$ ), ( $^{20}\text{Ne}, \alpha$ ), ( $^{20}\text{Ne}, 2n\alpha$ ), ( $^{20}\text{Ne}, 3np\alpha$ ), ( $^{20}\text{Ne}, 4np\alpha$ ), ( $^{20}\text{Ne}, 6np\alpha$ ), ( $^{20}\text{Ne}, n2p\alpha$ ), ( $^{20}\text{Ne}, 2\alpha$ ), ( $^{20}\text{Ne}, n2\alpha$ ), ( $^{20}\text{Ne}, 2n2\alpha$ ), ( $^{20}\text{Ne}, 3n2\alpha$ ), ( $^{20}\text{Ne}, 4n2\alpha$ ), ( $^{20}\text{Ne}, 3np2\alpha$ ), ( $^{20}\text{Ne}, 3n4\alpha$ ), E=164 MeV; measured  $E\gamma$ ,  $I\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
- 2009SI25 NUCLEAR REACTIONS Hf(p, X) $^{177}\text{Lu}$  /  $^{175}\text{Ta}$  /  $^{176}\text{Ta}$  /  $^{177}\text{Ta}$  /  $^{178}\text{Ta}$ , E=5.66-16.58 MeV; measured  $E\gamma$ , Ig; deduced production  $\sigma$ . Comparison with EMPIRE nuclear model code. JOUR NIMBE 267 3500
- $^{177}\text{W}$  2009SI10 NUCLEAR REACTIONS  $^{165}\text{Ho}(^{20}\text{Ne}, 2np)$ , ( $^{20}\text{Ne}, 3np$ ), ( $^{20}\text{Ne}, \alpha$ ), ( $^{20}\text{Ne}, 2n\alpha$ ), ( $^{20}\text{Ne}, 3np\alpha$ ), ( $^{20}\text{Ne}, 4np\alpha$ ), ( $^{20}\text{Ne}, 6np\alpha$ ), ( $^{20}\text{Ne}, n2p\alpha$ ), ( $^{20}\text{Ne}, 2\alpha$ ), ( $^{20}\text{Ne}, n2\alpha$ ), ( $^{20}\text{Ne}, 2n2\alpha$ ), ( $^{20}\text{Ne}, 3n2\alpha$ ), ( $^{20}\text{Ne}, 4n2\alpha$ ), ( $^{20}\text{Ne}, 3np2\alpha$ ), ( $^{20}\text{Ne}, 3n4\alpha$ ), E=164 MeV; measured  $E\gamma$ ,  $I\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
- $^{177}\text{Re}$  2009SI02 NUCLEAR REACTIONS  $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re}$  /  $^{178}\text{Re}$  /  $^{179}\text{Re}$  /  $^{180}\text{Os}$  /  $^{181}\text{Os}$  /  $^{182}\text{Os}$  /  $^{180}\text{Ir}$  /  $^{181}\text{Ir}$  /  $^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced  $\gamma$  cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
- $^{177}\text{Pt}$  2009PA33 RADIOACTIVITY  $^{181,182,183,184,185}\text{Hg}$ ,  $^{184,185,186}\text{Pb}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 031303
- $^{177}\text{Au}$  2009AN14 RADIOACTIVITY  $^{181}\text{Tl}$ ,  $^{177}\text{Au}(\alpha)$  [from  $^{144}\text{Sm}(^{40}\text{Ca}, 2np)$ ]; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\alpha\gamma$ -coin,  $\alpha$ - $\alpha$  correlations and half-lives; deduced branching ratios and hindrance factors.  $^{173}\text{Ir}$ ,  $^{177}\text{Au}$ ,  $^{181}\text{Tl}$ ; deduced levels, J,  $\pi$ , isomers.  $^{173}\text{Ir}$ ,  $^{173m}\text{Ir}$ ,  $^{177}\text{Au}$ ,  $^{177m}\text{Au}$ ,  $^{181}\text{Tl}$ ,  $^{181m}\text{Tl}$ ,  $^{185}\text{Bi}$ ; deduced mass excesses. Level energy systematics of odd-A Tl isotopes. JOUR PRVCA 80 024302
- $^{177}\text{Hg}$  2009OD01 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{86}\text{Sr}, 3n)$ , E=403 MeV; measured  $E\gamma$ ,  $I\gamma$ , ce,  $E\alpha$ ,  $I\alpha$ , (recoil) $\alpha$ -,  $\gamma\alpha$ -, (ce) $\alpha$ -coin, half-life.  $^{175}\text{Hg}$ ; deduced levels, J,  $\pi$ , isomer, bands and moments of inertia. Recoil-decay tagging technique.  $^{174,175,176,177,178,179}\text{Hg}$ ; level systematics. JOUR PRVCA 79 051304

KEYNUMBERS AND KEYWORDS

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**A=178**

<sup>178</sup> Lu	2009LU09	NUCLEAR REACTIONS <sup>181</sup> Ta(n, n'α), (n, t), (n, d), (n, α), (n, p), (n, 2n) <sup>177</sup> Lu / <sup>179</sup> Hf / <sup>180</sup> Hf / <sup>178</sup> Lu / <sup>181</sup> Hf / <sup>180</sup> Ta, E=13.5, 14.1, 14.5, 14.7 MeV; measured Eγ, Iγ, σ. <sup>27</sup> Al(n, α) <sup>24</sup> Na, E=13.5, 14.1, 14.5, 14.7 MeV; measured σ, used as monitor reaction. JOUR PRVCA 79 057603
<sup>178</sup> Hf	2008ZHZZ	RADIOACTIVITY <sup>178</sup> Hf(IT) [from <sup>181</sup> Ta(α, αp2n), E not given]; measured Eγ, Iγ, x-rays, conversion electrons. CONF Moscow,P81,Zheltonozhsky
	2009CA20	NUCLEAR REACTIONS <sup>172,178</sup> Hf(γ, γ'), E=9.5352-9.5851 keV; measured Eγ, Iγ, γγ-coin; deduced integral σ and that induced depletion of 2nd metastable state not seen. JOUR PYLBB 679 203
<sup>178</sup> Ta	2009HE15	NUCLEAR REACTIONS Ti(d, X) <sup>48</sup> V, <sup>181</sup> Ta(d, 2n), (d, p), (d, p2n), (d, 4np), (d, xn2p), E<45 MeV; <sup>179</sup> Hf, <sup>180</sup> Hf; measured X-ray, Eγ, Iγ; deduced σ. Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
	2009SI10	NUCLEAR REACTIONS <sup>165</sup> Ho( <sup>20</sup> Ne, 2np), ( <sup>20</sup> Ne, 3np), ( <sup>20</sup> Ne, α), ( <sup>20</sup> Ne, 2nα), ( <sup>20</sup> Ne, 3npα), ( <sup>20</sup> Ne, 4npα), ( <sup>20</sup> Ne, 6npα), ( <sup>20</sup> Ne, n2pα), ( <sup>20</sup> Ne, 2α), ( <sup>20</sup> Ne, n2α), ( <sup>20</sup> Ne, 2n2α), ( <sup>20</sup> Ne, 3n2α), ( <sup>20</sup> Ne, 4n2α), ( <sup>20</sup> Ne, 3np2α), ( <sup>20</sup> Ne, 3n4α), E=164 MeV; measured Eγ, Iγ, yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
	2009SI25	NUCLEAR REACTIONS Hf(p, X) <sup>177</sup> Lu / <sup>175</sup> Ta / <sup>176</sup> Ta / <sup>177</sup> Ta / <sup>178</sup> Ta, E=5.66-16.58 MeV; measured Eγ, Ig; deduced production σ. Comparison with EMPIRE nuclear model code. JOUR NIMBE 267 3500
<sup>178</sup> Re	2009SI02	NUCLEAR REACTIONS <sup>169</sup> Tm( <sup>16</sup> O, X) <sup>177</sup> Re / <sup>178</sup> Re / <sup>179</sup> Re / <sup>180</sup> Os / <sup>181</sup> Os / <sup>182</sup> Os / <sup>180</sup> Ir / <sup>181</sup> Ir / <sup>182</sup> Ir, E=5.6 MeV / nucleon; measured Eγ, Iγ, (charged-particle)γ-coin, yields, spin distributions; deduced γ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
<sup>178</sup> Pt	2009PA33	RADIOACTIVITY <sup>181,182,183,184,185</sup> Hg, <sup>184,185,186</sup> Pb(α); measured Eα. JOUR PRVCA 80 031303
<sup>178</sup> Hg	2009OD01	NUCLEAR REACTIONS <sup>92</sup> Mo( <sup>86</sup> Sr, 3n), E=403 MeV; measured Eγ, Iγ, ce, Eα, Iα, (recoil)α-, γα-, (ce)α-coin, half-life. <sup>175</sup> Hg; deduced levels, J, π, isomer, bands and moments of inertia. Recoil-decay tagging technique. <sup>174,175,176,177,178,179</sup> Hg; level systematics. JOUR PRVCA 79 051304

**A=179**

<sup>179</sup> Hf	2009HE15	NUCLEAR REACTIONS Ti(d, X) <sup>48</sup> V, <sup>181</sup> Ta(d, 2n), (d, p), (d, p2n), (d, 4np), (d, xn2p), E<45 MeV; <sup>179</sup> Hf, <sup>180</sup> Hf; measured X-ray, Eγ, Iγ; deduced σ. Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
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KEYNUMBERS AND KEYWORDS

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**A=179 (continued)**

- 2009LU09 NUCLEAR REACTIONS  $^{181}\text{Ta}(n, n'\alpha)$ ,  $(n, t)$ ,  $(n, d)$ ,  $(n, \alpha)$ ,  $(n, p)$ ,  $(n, 2n)$   $^{177}\text{Lu} / ^{179}\text{Hf} / ^{180}\text{Hf} / ^{178}\text{Lu} / ^{181}\text{Hf} / ^{180}\text{Ta}$ ,  $E=13.5, 14.1, 14.5, 14.7$  MeV; measured  $E\gamma, I\gamma, \sigma$ .  $^{27}\text{Al}(n, \alpha)^{24}\text{Na}$ ,  $E=13.5, 14.1, 14.5, 14.7$  MeV; measured  $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603
- $^{179}\text{W}$  2009FA03 NUCLEAR REACTIONS  $^{165}\text{Ho}, ^{180}\text{W}(n, 2n)$ ,  $E=14$  MeV; measured  $E\gamma, I\gamma$ , cross sections using the activation technique. JOUR RMEAE 44 68
- $^{179}\text{Re}$  2009SI02 NUCLEAR REACTIONS  $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ ,  $E=5.6$  MeV / nucleon; measured  $E\gamma, I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced  $\gamma$  cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
- 2009SI10 NUCLEAR REACTIONS  $^{165}\text{Ho}(^{20}\text{Ne}, 2np)$ ,  $(^{20}\text{Ne}, 3np)$ ,  $(^{20}\text{Ne}, \alpha)$ ,  $(^{20}\text{Ne}, 2n\alpha)$ ,  $(^{20}\text{Ne}, 3n\alpha)$ ,  $(^{20}\text{Ne}, 4n\alpha)$ ,  $(^{20}\text{Ne}, 6n\alpha)$ ,  $(^{20}\text{Ne}, n2p\alpha)$ ,  $(^{20}\text{Ne}, 2\alpha)$ ,  $(^{20}\text{Ne}, n2\alpha)$ ,  $(^{20}\text{Ne}, 2n2\alpha)$ ,  $(^{20}\text{Ne}, 3n2\alpha)$ ,  $(^{20}\text{Ne}, 4n2\alpha)$ ,  $(^{20}\text{Ne}, 3np2\alpha)$ ,  $(^{20}\text{Ne}, 3n4\alpha)$ ,  $E=164$  MeV; measured  $E\gamma, I\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
- $^{179}\text{Pt}$  2009PA33 RADIOACTIVITY  $^{181,182,183,184,185}\text{Hg}, ^{184,185,186}\text{Pb}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 80 031303
- $^{179}\text{Hg}$  2009OD01 NUCLEAR REACTIONS  $^{92}\text{Mo}(^{86}\text{Sr}, 3n)$ ,  $E=403$  MeV; measured  $E\gamma, I\gamma, ce, E\alpha, I\alpha$ , (recoil) $\alpha$ -,  $\gamma\alpha$ -, (ce) $\alpha$ -coin, half-life.  $^{175}\text{Hg}$ ; deduced levels,  $J, \pi$ , isomer, bands and moments of inertia. Recoil-decay tagging technique.  $^{174,175,176,177,178,179}\text{Hg}$ ; level systematics. JOUR PRVCA 79 051304

**A=180**

- $^{180}\text{Hf}$  2009BE27 RADIOACTIVITY  $^{64}\text{Zn}(2\text{EC}), (\beta^+\text{EC}); ^{70}\text{Zn}, ^{186}\text{W}(2\beta^-); ^{180}\text{W}(2\text{EC})$ ; measured  $E\gamma, I\gamma$ ; deduced  $T_{1/2}$  lower limits for various  $2\beta$ -decay modes.  $\text{ZnWO}_4$  crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
- 2009BU03 RADIOACTIVITY  $^{180}\text{Hf}(\text{IT}); ^{181}\text{Hf}(\beta^-)$ ; measured time differential perturbed angular correlation spectra. JOUR ZNASE 64a 103
- 2009BU03 NUCLEAR MOMENTS  $^{180,181}\text{Hf}$ ; deduced hyperfine parameters. JOUR ZNASE 64a 103
- 2009HE15 NUCLEAR REACTIONS  $\text{Ti}(d, X)^{48}\text{V}, ^{181}\text{Ta}(d, 2n)$ ,  $(d, p)$ ,  $(d, p2n)$ ,  $(d, 4np)$ ,  $(d, xn2p)$ ,  $E<45$  MeV;  $^{179}\text{Hf}, ^{180}\text{Hf}$ ; measured X-ray,  $E\gamma, I\gamma$ ; deduced  $\sigma$ . Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
- 2009LU09 NUCLEAR REACTIONS  $^{181}\text{Ta}(n, n'\alpha)$ ,  $(n, t)$ ,  $(n, d)$ ,  $(n, \alpha)$ ,  $(n, p)$ ,  $(n, 2n)$   $^{177}\text{Lu} / ^{179}\text{Hf} / ^{180}\text{Hf} / ^{178}\text{Lu} / ^{181}\text{Hf} / ^{180}\text{Ta}$ ,  $E=13.5, 14.1, 14.5, 14.7$  MeV; measured  $E\gamma, I\gamma, \sigma$ .  $^{27}\text{Al}(n, \alpha)^{24}\text{Na}$ ,  $E=13.5, 14.1, 14.5, 14.7$  MeV; measured  $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603

KEYNUMBERS AND KEYWORDS

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**A=180 (continued)**

$^{180}\text{Ta}$	2007SHZR	NUCLEAR REACTIONS $^{181}\text{Ta}(^{18}\text{O}, x)^{180}\text{Ta}$ , E=180 MeV; $^{181}\text{Ta}(^{18}\text{O}, x)^{181}\text{Ta}$ , E=180 MeV; $^{181}\text{Ta}(^{18}\text{O}, x)^{182}\text{Ta}$ , E=180 MeV; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin. Coulomb excitation, neutron transfer. REPT JAEA-Review 2007-046,P36,Shizuma
	2009HE15	NUCLEAR REACTIONS $\text{Ti}(d, X)^{48}\text{V}$ , $^{181}\text{Ta}(d, 2n)$ , $(d, p)$ , $(d, p2n)$ , $(d, 4np)$ , $(d, xn2p)$ , E<45 MeV; $^{179}\text{Hf}$ , $^{180}\text{Hf}$ ; measured X-ray, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
	2009LU09	NUCLEAR REACTIONS $^{181}\text{Ta}(n, n'\alpha)$ , $(n, t)$ , $(n, d)$ , $(n, \alpha)$ , $(n, p)$ , $(n, 2n)^{177}\text{Lu} / ^{179}\text{Hf} / ^{180}\text{Hf} / ^{178}\text{Lu} / ^{181}\text{Hf} / ^{180}\text{Ta}$ , E=13.5, 14.1, 14.5, 14.7 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ . $^{27}\text{Al}(n, \alpha)^{24}\text{Na}$ , E=13.5, 14.1, 14.5, 14.7 MeV; measured $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603
$^{180}\text{W}$	2009BE27	RADIOACTIVITY $^{64}\text{Zn}(2\text{EC})$ , $(\beta^+ \text{EC})$ ; $^{70}\text{Zn}$ , $^{186}\text{W}(2\beta^-)$ ; $^{180}\text{W}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ lower limits for various $2\beta$ -decay modes. $\text{ZnWO}_4$ crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256
	2009FA01	RADIOACTIVITY $^{180}\text{Re}(\text{EC})$ , $(\beta^+)$ [from $^{181}\text{Ta}(^3\text{He}, 4n)$ , E=33 MeV]; measured delayed $\gamma$ spectrum; deduced none oscillation of decay rate. JOUR PYLBB 672 227
$^{180}\text{Re}$	2009FA01	RADIOACTIVITY $^{180}\text{Re}(\text{EC})$ , $(\beta^+)$ [from $^{181}\text{Ta}(^3\text{He}, 4n)$ , E=33 MeV]; measured delayed $\gamma$ spectrum; deduced none oscillation of decay rate. JOUR PYLBB 672 227
$^{180}\text{Os}$	2009SI02	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
$^{180}\text{Ir}$	2009SI02	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
$^{180}\text{Pt}$	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303
$^{180}\text{Hg}$	2009GR09	NUCLEAR REACTIONS $^{94}\text{Mo}(^{88}\text{Sr}, 2n)$ , E=300 MeV; $^{96}\text{Mo}(^{88}\text{Sr}, 2n)$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -, $\gamma\gamma$ -coin, half-lives by recoil-distance Doppler shift method. $^{180,182}\text{Hg}$ ; deduced levels, J, $\pi$ , B(E2), quadrupole moments and deformation parameters. Recoil-decay tagging (RDT) method. Comparisons with systematics of even-even Hg nuclides from A=176-206 and A=186, 188 Pb nuclides. JOUR PRVCA 80 014324
	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303

## A=181

$^{181}\text{Hf}$	2009BU03	RADIOACTIVITY $^{180}\text{Hf(IT)}$ ; $^{181}\text{Hf}(\beta^-)$ ; measured time differential perturbed angular correlation spectra. JOUR ZNASE 64a 103
	2009BU03	NUCLEAR MOMENTS $^{180,181}\text{Hf}$ ; deduced hyperfine parameters. JOUR ZNASE 64a 103
	2009LA21	RADIOACTIVITY $^{181}\text{Hf}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced energy levels in $^{181}\text{Ta}$ . JOUR UKPJA 54 678
	2009LU09	NUCLEAR REACTIONS $^{181}\text{Ta}(n, n'\alpha)$ , $(n, t)$ , $(n, d)$ , $(n, \alpha)$ , $(n, p)$ , $(n, 2n)$ $^{177}\text{Lu} / ^{179}\text{Hf} / ^{180}\text{Hf} / ^{178}\text{Lu} / ^{181}\text{Hf} / ^{180}\text{Ta}$ , $E=13.5, 14.1, 14.5, 14.7$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\sigma$ . $^{27}\text{Al}(n, \alpha)^{24}\text{Na}$ , $E=13.5, 14.1, 14.5, 14.7$ MeV; measured $\sigma$ , used as monitor reaction. JOUR PRVCA 79 057603
$^{181}\text{Ta}$	2007SHZR	NUCLEAR REACTIONS $^{181}\text{Ta}(^{18}\text{O}, x)^{180}\text{Ta}$ , $E=180$ MeV; $^{181}\text{Ta}(^{18}\text{O}, x)^{181}\text{Ta}$ , $E=180$ MeV; $^{181}\text{Ta}(^{18}\text{O}, x)^{182}\text{Ta}$ , $E=180$ MeV; measured $E_\gamma$ , $I_\gamma$ , particle- $\gamma$ -coin. Coulomb excitation, neutron transfer. REPT JAEA-Review 2007-046,P36,Shizuma
	2009BU03	RADIOACTIVITY $^{180}\text{Hf(IT)}$ ; $^{181}\text{Hf}(\beta^-)$ ; measured time differential perturbed angular correlation spectra. JOUR ZNASE 64a 103
	2009LA20	NUCLEAR MOMENTS $^{181}\text{Ta}$ ; measured hfs spectra; deduced magnetic moment. JOUR UKPJA 54 337
	2009LA21	RADIOACTIVITY $^{181}\text{Hf}(\beta^-)$ ; measured $E_\gamma$ , $I_\gamma$ ; deduced energy levels in $^{181}\text{Ta}$ . JOUR UKPJA 54 678
	2009TI09	NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(n, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(n, n')$ , $\text{Pb}(p, xn)^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ , $\text{In}(p, xn)^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(p, 3n)$ , $^{63}\text{Cu}(p, 2n)$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(p, 4n)$ , $E=0.8$ GeV; measured $E_\gamma$ , $I_\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
	2009HE15	NUCLEAR REACTIONS $\text{Ti}(d, X)^{48}\text{V}$ , $^{181}\text{Ta}(d, 2n)$ , $(d, p)$ , $(d, p2n)$ , $(d, 4np)$ , $(d, xn2p)$ , $E<45$ MeV; $^{179}\text{Hf}$ , $^{180}\text{Hf}$ ; measured X-ray, $E_\gamma$ , $I_\gamma$ ; deduced $\sigma$ . Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293
$^{181}\text{Re}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , $E=76, 81$ MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613
	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2np)$ , $(^{20}\text{Ne}, 3np)$ , $(^{20}\text{Ne}, \alpha)$ , $(^{20}\text{Ne}, 2n\alpha)$ , $(^{20}\text{Ne}, 3np\alpha)$ , $(^{20}\text{Ne}, 4np\alpha)$ , $(^{20}\text{Ne}, 6np\alpha)$ , $(^{20}\text{Ne}, n2p\alpha)$ , $(^{20}\text{Ne}, 2\alpha)$ , $(^{20}\text{Ne}, n2\alpha)$ , $(^{20}\text{Ne}, 2n2\alpha)$ , $(^{20}\text{Ne}, 3n2\alpha)$ , $(^{20}\text{Ne}, 4n2\alpha)$ , $(^{20}\text{Ne}, 3np2\alpha)$ , $(^{20}\text{Ne}, 3n4\alpha)$ , $E=164$ MeV; measured $E_\gamma$ , $I_\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
$^{181}\text{Os}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , $E=76, 81$ MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613

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**A=181 (continued)**

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|                   | 2009SI02 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, \text{X})^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20   |
|                   | 2009SI10 | NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2\text{np})$ , $(^{20}\text{Ne}, 3\text{np})$ , $(^{20}\text{Ne}, \alpha)$ , $(^{20}\text{Ne}, 2n\alpha)$ , $(^{20}\text{Ne}, 3n\alpha)$ , $(^{20}\text{Ne}, 4n\alpha)$ , $(^{20}\text{Ne}, 6n\alpha)$ , $(^{20}\text{Ne}, n2p\alpha)$ , $(^{20}\text{Ne}, 2\alpha)$ , $(^{20}\text{Ne}, n2\alpha)$ , $(^{20}\text{Ne}, 2n2\alpha)$ , $(^{20}\text{Ne}, 3n2\alpha)$ , $(^{20}\text{Ne}, 4n2\alpha)$ , $(^{20}\text{Ne}, 3np2\alpha)$ , $(^{20}\text{Ne}, 3n4\alpha)$ , E=164 MeV; measured $E\gamma$ , $I\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601 |
| $^{181}\text{Ir}$ | 2009SI02 | NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, \text{X})^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20   |
| $^{181}\text{Pt}$ | 2009PA33 | RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303  |
| $^{181}\text{Hg}$ | 2009AN17 | NUCLEAR REACTIONS $^{144}\text{Sm}(^{40}\text{Ca}, n2\text{p})$ , E=177-229 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, delayed $\gamma$ , and half-lives. $^{181}\text{Hg}$ ; deduced levels, J, $\pi$ , multipolarities, isomer. Comparison with earlier experimental data. JOUR PRVCA 80 044334   |
|                   | 2009PA33 | RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303  |
| $^{181}\text{Tl}$ | 2009AN14 | RADIOACTIVITY $^{181}\text{Tl}$ , $^{177}\text{Au}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, 2\text{np})$ ]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations and half-lives; deduced branching ratios and hindrance factors. $^{173}\text{Ir}$ , $^{177}\text{Au}$ , $^{181}\text{Tl}$ ; deduced levels, J, $\pi$ , isomers. $^{173}\text{Ir}$ , $^{173m}\text{Ir}$ , $^{177}\text{Au}$ , $^{177m}\text{Au}$ , $^{181}\text{Tl}$ , $^{181m}\text{Tl}$ , $^{185}\text{Bi}$ ; deduced mass excesses. Level energy systematics of odd-A Tl isotopes. JOUR PRVCA 80 024302   |

**A=182**

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| $^{182}\text{Ta}$ | 2007SHZR | NUCLEAR REACTIONS $^{181}\text{Ta}(^{18}\text{O}, \text{x})^{180}\text{Ta}$ , E=180 MeV; $^{181}\text{Ta}(^{18}\text{O}, \text{x})^{181}\text{Ta}$ , E=180 MeV; $^{181}\text{Ta}(^{18}\text{O}, \text{x})^{182}\text{Ta}$ , E=180 MeV; measured $E\gamma$ , $I\gamma$ , particle- $\gamma$ -coin. Coulomb excitation, neutron transfer. REPT JAEA-Review 2007-046,P36,Shizuma   |
|                   | 2009HE15 | NUCLEAR REACTIONS $\text{Ti}(d, \text{X})^{48}\text{V}$ , $^{181}\text{Ta}(d, 2n)$ , $(d, p)$ , $(d, p2n)$ , $(d, 4np)$ , $(d, xn2p)$ , E<45 MeV; $^{179}\text{Hf}$ , $^{180}\text{Hf}$ ; measured X-ray, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with ALICE and EMPIRE codes. JOUR NIMBE 267 3293  |
|                   | 2009TI09 | NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(n, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(n, n')$ , $\text{Pb}(p, \text{xn})^{203}\text{Bi} / ^{204}\text{Bi} / ^{205}\text{Bi} / ^{206}\text{Bi}$ , $\text{In}(p, \text{xn})^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(p, 3n)$ , $^{63}\text{Cu}(p, 2n)$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(p, 4n)$ , E=0.8 GeV; measured $E\gamma$ , $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48 |

KEYNUMBERS AND KEYWORDS

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**A=182 (continued)**

$^{182}\text{W}$	2008LEZS	NUCLEAR REACTIONS $^{230,232,234}\text{Th}$ , $^{184,186}\text{W}(p, t)$ , E not given; measured Et, It; deduced Q-values. CONF Moscow,P78,Levon
$^{182}\text{Re}$	2009SI28	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{93}\text{Nb}(\alpha, n)$ , $^{197}\text{Au}$ , $^{181}\text{Ta}(\alpha, 2n)$ , $^{181}\text{Ta}(\alpha, 3n)$ , $^{197}\text{Au}(\alpha, 2pn)$ , $^{93}\text{Nb}(\alpha, 2p)$ , $^{197}\text{Au}$ , $^{93}\text{Nb}(\alpha, \alpha n)$ , $^{27}\text{Al}(\alpha, \alpha 2pn)$ , E=18-60 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
$^{182}\text{Os}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , E=76, 81 MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613
	2009M005	NUCLEAR REACTIONS $^{186}\text{W}(^7\text{Li}, 4np)$ , $(^7\text{Li}, 3nd)$ , $(^7\text{Li}, 2nt)$ , E=51, 53, 56, 59 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, DCO ratios, $\gamma(t)$ , half-life by decay curve method. $^{188}\text{Os}$ ; deduced levels, J, $\pi$ , isomers, configurations. $^{182,184,186,188}\text{Os}$ ; systematics. JOUR PRVCA 79 024310
	2009SI02	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
	2009SI10	NUCLEAR REACTIONS $^{165}\text{Ho}(^{20}\text{Ne}, 2np)$ , $(^{20}\text{Ne}, 3np)$ , $(^{20}\text{Ne}, \alpha)$ , $(^{20}\text{Ne}, 2n\alpha)$ , $(^{20}\text{Ne}, 3np\alpha)$ , $(^{20}\text{Ne}, 4np\alpha)$ , $(^{20}\text{Ne}, 6np\alpha)$ , $(^{20}\text{Ne}, n2p\alpha)$ , $(^{20}\text{Ne}, 2\alpha)$ , $(^{20}\text{Ne}, n2\alpha)$ , $(^{20}\text{Ne}, 2n2\alpha)$ , $(^{20}\text{Ne}, 3n2\alpha)$ , $(^{20}\text{Ne}, 4n2\alpha)$ , $(^{20}\text{Ne}, 3np2\alpha)$ , $(^{20}\text{Ne}, 3n4\alpha)$ , E=164 MeV; measured $E\gamma$ , $I\gamma$ , yields, forward recoil range distributions and relative contributions of complete and incomplete fusion channels. JOUR PRVCA 79 054601
$^{182}\text{Ir}$	2009GU24	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{171}\text{Lu} / ^{172}\text{Lu} / ^{171}\text{Hf} / ^{175}\text{Hf} / ^{181}\text{Re} / ^{181}\text{Os} / ^{182}\text{Os} / ^{182}\text{Ir}$ , E=76, 81 MeV; measured $\sigma$ , angular distributions, forward recoil ranges and most probable recoil ranges. JOUR PRVCA 80 024613
	2009SI02	NUCLEAR REACTIONS $^{169}\text{Tm}(^{16}\text{O}, X)^{177}\text{Re} / ^{178}\text{Re} / ^{179}\text{Re} / ^{180}\text{Os} / ^{181}\text{Os} / ^{182}\text{Os} / ^{180}\text{Ir} / ^{181}\text{Ir} / ^{182}\text{Ir}$ , E=5.6 MeV / nucleon; measured $E\gamma$ , $I\gamma$ , (charged-particle) $\gamma$ -coin, yields, spin distributions; deduced $\gamma$ cascade feeding intensities. Comparison with PACE4 calculations. JOUR PYLBB 671 20
$^{182}\text{Hg}$	2009GR09	NUCLEAR REACTIONS $^{94}\text{Mo}(^{88}\text{Sr}, 2n)$ , E=300 MeV; $^{96}\text{Mo}(^{88}\text{Sr}, 2n)$ , E=310 MeV; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -, $\gamma\gamma$ -coin, half-lives by recoil-distance Doppler shift method. $^{180,182}\text{Hg}$ ; deduced levels, J, $\pi$ , B(E2), quadrupole moments and deformation parameters. Recoil-decay tagging (RDT) method. Comparisons with systematics of even-even Hg nuclides from A=176-206 and A=186, 188 Pb nuclides. JOUR PRVCA 80 014324
	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303

KEYNUMBERS AND KEYWORDS

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**A=183**

$^{183}\text{Ta}$	2009SH17	NUCLEAR REACTIONS $^{181}\text{Ta}(^{18}\text{O}, ^{16}\text{O})$ , E=180 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, (particle) $\gamma$ -coin, time difference spectrum. $^{183}\text{Ta}$ ; deduced levels, J, $\pi$ and $T_{1/2}$ of new isomer. JOUR ZAANE 39 263
$^{183}\text{Re}$	2009SI28	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{93}\text{Nb}(\alpha, n)$ , $^{197}\text{Au}$ , $^{181}\text{Ta}(\alpha, 2n)$ , $^{181}\text{Ta}(\alpha, 3n)$ , $^{197}\text{Au}(\alpha, 2pn)$ , $^{93}\text{Nb}(\alpha, 2p)$ , $^{197}\text{Au}$ , $^{93}\text{Nb}(\alpha, \alpha n)$ , $^{27}\text{Al}(\alpha, \alpha 2pn)$ , E=18-60 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
$^{183}\text{Os}$	2009LU03	NUCLEAR REACTIONS $^{86}\text{Sr}$ , $^{184}\text{Os}(n, 2n)$ , $^{190}\text{Os}(n, p)$ , E=13.5-14.8 MeV; measured $E\gamma$ , $I\gamma$ , cross sections using the activation technique. Compared results to model calculations, existing data, and evaluated databases. JOUR JRNC D 279 443
$^{183}\text{Hg}$	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303
$^{183}\text{Pb}$	2009SE13	NUCLEAR MOMENTS $^{183,185,187,189}\text{Pb}$ [from $^{238}\text{U}(p, X)$ , E=1, 4 GeV online mass separator using the in-source resonance ionization spectroscopy technique]; measured hfs spectra; deduced $\mu$ , hyperfine coupling constants, charge radii. Comparison with other data. JOUR ZAANE 41 315

**A=184**

$^{184}\text{W}$	2008LEZS	NUCLEAR REACTIONS $^{230,232,234}\text{Th}$ , $^{184,186}\text{W}(p, t)$ , E not given; measured $E_t$ , $I_t$ ; deduced Q-values. CONF Moscow,P78,Levon
	2009LI23	NUCLEAR REACTIONS $^{152,154}\text{Sm}$ , $^{184}\text{W}$ , $^{196}\text{Pt}$ , $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O})$ , E=36-80 MeV; measured particle spectra, $\sigma$ as a function of beam energy; deduced diffuseness parameters using single-channel and coupled-channels calculations. JOUR PRVCA 79 064603
$^{184}\text{Re}$	2009SI28	NUCLEAR REACTIONS $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{93}\text{Nb}(\alpha, n)$ , $^{197}\text{Au}$ , $^{181}\text{Ta}(\alpha, 2n)$ , $^{181}\text{Ta}(\alpha, 3n)$ , $^{197}\text{Au}(\alpha, 2pn)$ , $^{93}\text{Nb}(\alpha, 2p)$ , $^{197}\text{Au}$ , $^{93}\text{Nb}(\alpha, \alpha n)$ , $^{27}\text{Al}(\alpha, \alpha 2pn)$ , E=18-60 MeV; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
$^{184}\text{Os}$	2009M005	NUCLEAR REACTIONS $^{186}\text{W}(^7\text{Li}, 4np)$ , $(^7\text{Li}, 3nd)$ , $(^7\text{Li}, 2nt)$ , E=51, 53, 56, 59 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, DCO ratios, $\gamma(t)$ , half-life by decay curve method. $^{188}\text{Os}$ ; deduced levels, J, $\pi$ , isomers, configurations. $^{182,184,186,188}\text{Os}$ ; systematics. JOUR PRVCA 79 024310
$^{184}\text{Hg}$	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303
$^{184}\text{Pb}$	2009PA33	RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303



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**A=185**

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| $^{185}\text{Ta}$ | 2009LA17 | NUCLEAR REACTIONS $^{186}\text{W}(^{136}\text{Xe}, \text{X})^{185}\text{Ta}$ , E=840 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin and half-lives. $^{185}\text{Ta}$ ; deduced levels, J, $\pi$ , isomer, mixing ratios, bands and configurations, transition rates and other rotational-model characteristics, K-allowed E1 and K-forbidden transitions. JOUR PRVCA 80 024321   |
| $^{185}\text{W}$  | 2009MA48 | NUCLEAR REACTIONS $^{184,186}\text{W}(\text{n}, \gamma)$ , E=thermal; measured $E\gamma$ , $I\gamma$ ; $\sigma$ by activation technique. Comparisons with previous measurements and theoretical predictions. Discussed astrophysical implications. JOUR PRVCA 80 025804   |
| $^{185}\text{Re}$ | 2009GA04 | NUCLEAR REACTIONS $^{185}\text{Re}(^3\text{He}, ^3\text{He})$ , ( $^3\text{He}, ^3\text{He}'$ ), E=30 MeV; measured $\sigma(\theta)$ . Comparison with results of ECISO3 calculations. JOUR PRVCA 79 017601   |
| $^{185}\text{Hg}$ | 2009PA33 | RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303   |
| $^{185}\text{Pb}$ | 2009PA33 | NUCLEAR REACTIONS $^{106}\text{Pd}(^{82}\text{Kr}, \text{X})^{185}\text{Pb}$ , E=367 MeV; $^{104}\text{Pd}(^{83}\text{Kr}, \text{X})^{185}\text{Pb}$ , E=362 MeV; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma\gamma$ -, (particle) $\gamma$ -coin, recoil-decay tagging method. $^{185}\text{Pb}$ ; deduced levels, J, $\pi$ , bands, configurations. Comparison with level structure of $^{181}\text{Pt}$ . Level systematics of A=182-197 Pb isotopes. JOUR PRVCA 80 031303  |
|                   | 2009PA33 | RADIOACTIVITY $^{181,182,183,184,185}\text{Hg}$ , $^{184,185,186}\text{Pb}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 80 031303   |
|                   | 2009SE13 | NUCLEAR MOMENTS $^{183,185,187,189}\text{Pb}$ [from $^{238}\text{U}(\text{p}, \text{X})$ , E=1, 4 GeV online mass separator using the in-source resonance ionization spectroscopy technique]; measured hfs spectra; deduced $\mu$ , hyperfine coupling constants, charge radii. Comparison with other data. JOUR ZAANE 41 315   |
| $^{185}\text{Bi}$ | 2009AN14 | RADIOACTIVITY $^{181}\text{Tl}$ , $^{177}\text{Au}(\alpha)$ [from $^{144}\text{Sm}(^{40}\text{Ca}, 2\text{np})$ ]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, $\alpha$ - $\alpha$ correlations and half-lives; deduced branching ratios and hindrance factors. $^{173}\text{Ir}$ , $^{177}\text{Au}$ , $^{181}\text{Tl}$ ; deduced levels, J, $\pi$ , isomers. $^{173}\text{Ir}$ , $^{173\text{m}}\text{Ir}$ , $^{177}\text{Au}$ , $^{177\text{m}}\text{Au}$ , $^{181}\text{Tl}$ , $^{181\text{m}}\text{Tl}$ , $^{185}\text{Bi}$ ; deduced mass excesses. Level energy systematics of odd-A Tl isotopes. JOUR PRVCA 80 024302 |

**A=186**

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| $^{186}\text{W}$  | 2009BE27 | RADIOACTIVITY $^{64}\text{Zn}(2\text{EC})$ , ( $\beta^+\text{EC}$ ); $^{70}\text{Zn}$ , $^{186}\text{W}(2\beta^-)$ ; $^{180}\text{W}(2\text{EC})$ ; measured $E\gamma$ , $I\gamma$ ; deduced $T_{1/2}$ lower limits for various $2\beta$ -decay modes. $\text{ZnWO}_4$ crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256  |
| $^{186}\text{Re}$ | 2007MAYZ | NUCLEAR REACTIONS $^{187}\text{Re}(\text{n}, 2\text{n}\gamma)$ , E=12 MeV; measured $E\gamma$ , $I\gamma$ . REPT TUNL-XLVI,P40,Masters   |
|                   | 2009SZ03 | NUCLEAR REACTIONS $^{192}\text{Os}(\text{p}, \alpha 3\text{n})$ , $^{186}\text{W}(\text{p}, \text{n})$ , ( $\text{d}, 2\text{n}$ ), $\text{Cu}(\text{p}, \text{X})^{65}\text{Zn}$ , $\text{Al}(\text{p}, \text{X})^{24}\text{Na}$ , E<66.7 MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ , uncertainties. JOUR JRNCD 282 261 |
|                   | 2009WH01 | NUCLEAR REACTIONS $^{187}\text{Re}(\text{p}, \text{d})$ , E=21 MeV; measured $E\text{d}$ , $I\text{d}$ ; deduced energy levels, J, $\pi$ . Comparison with calculations, Q3D magnetic spectrograph. JOUR JPGPE 36 095102   |

KEYNUMBERS AND KEYWORDS

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**A=186 (continued)**

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| <sup>186</sup> Os | 2008PHZY | NUCLEAR REACTIONS <sup>185,187</sup> Re( <sup>3</sup> He, d), E=30 MeV; measured Id, Ed; deduced $\sigma(\theta, J, \pi)$ ; calculated $\sigma(\theta, J, \pi)$ using DWBA code DWUCK4; extracted structure of $4_3^+$ states in <sup>186,188</sup> Os. REPT MLL 2007 Annual,P17,Phillips  |
|                   | 2009BE27 | RADIOACTIVITY <sup>64</sup> Zn(2EC), ( $\beta^+$ EC); <sup>70</sup> Zn, <sup>186</sup> W( $2\beta^-$ ); <sup>180</sup> W(2EC); measured E $\gamma$ , I $\gamma$ ; deduced T <sub>1/2</sub> lower limits for various $2\beta$ -decay modes. ZnWO <sub>4</sub> crystal scintillator at the Gran Sasso National Laboratories. JOUR NUPAB 826 256  |
|                   | 2009M005 | NUCLEAR REACTIONS <sup>186</sup> W( <sup>7</sup> Li, 4np), ( <sup>7</sup> Li, 3nd), ( <sup>7</sup> Li, 2nt), E=51, 53, 56, 59 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, DCO ratios, $\gamma(t)$ , half-life by decay curve method. <sup>188</sup> Os; deduced levels, J, $\pi$ , isomers, configurations. <sup>182,184,186,188</sup> Os; systematics. JOUR PRVCA 79 024310   |
|                   | 2009PHZZ | NUCLEAR REACTIONS <sup>185,187</sup> Re( <sup>3</sup> He, d), E=30 MeV; measured E(particle), I(particle); deduced $\sigma(\theta)$ ; calculated $\sigma(\theta)$ ; deduced K $\pi=1^+$ bands. REPT MLL 2008 Annual,P13,Phillips   |
|                   | 2009P002 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X), E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. <sup>198</sup> Os; deduced levels, J, $\pi$ , configuration. <sup>198</sup> Os; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of <sup>198</sup> Os and <sup>202</sup> Pt level schemes. <sup>186,188,190,192,194,196,198</sup> Os, <sup>188,190,192,194,196,198,200,202</sup> Pt; level systematics. JOUR PRVCA 79 031305 |
| <sup>186</sup> Tl | 2009AN11 | RADIOACTIVITY <sup>194,194m</sup> At( $\alpha$ ), <sup>190,190m</sup> Bi( $\alpha$ )[from <sup>141</sup> Pr( <sup>56</sup> Fe, 3n), E=259 MeV]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$ correlations. <sup>190</sup> Bi, <sup>194</sup> At; deduced levels, J, $\pi$ , multipolarity, hindrance factors, configurations. <sup>193</sup> Po, <sup>193,195</sup> At( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 79 064320                            |
| <sup>186</sup> Pb | 2009PA33 | RADIOACTIVITY <sup>181,182,183,184,185</sup> Hg, <sup>184,185,186</sup> Pb( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 80 031303   |

**A=187**

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| <sup>187</sup> W  | 2009KIZY | NUCLEAR REACTIONS Mo(n, $\gamma$ ), E=0.01-200 eV; measured In; deduced $\sigma$ ; <sup>186</sup> W(n, $\gamma$ ), E=thermal; <sup>98</sup> Mo(n, $\gamma$ ), E=thermal; measured In relative to <sup>197</sup> Au(n, $\gamma$ ); deduced $\sigma$ , resonance integral; <sup>45</sup> Sc( $\gamma$ , n), E=65 MeV; Ti( $\gamma$ , x) <sup>44</sup> Sc, E=65 MeV; <sup>103</sup> Rh( $\gamma$ , 4n), E=65 MeV; Fe( $\gamma$ , x) <sup>52</sup> Mn, E=65 MeV; measured E $\gamma$ , I $\gamma$ ; deduced $\sigma$ , isomeric transition. Compared to other data. CONF Ulaanbaatar (Nucl Phys and Appls) Proc.,P72,Kim |
|                   | 2009MA48 | NUCLEAR REACTIONS <sup>184,186</sup> W(n, $\gamma$ ), E=thermal; measured E $\gamma$ , I $\gamma$ ; $\sigma$ by activation technique. Comparisons with previous measurements and theoretical predictions. Discussed astrophysical implications. JOUR PRVCA 80 025804   |
| <sup>187</sup> Pt | 2007ZHZZ | NUCLEAR REACTIONS <sup>173</sup> Yb( <sup>18</sup> O, 4n), E=78, 85 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin.; deduced <sup>187</sup> Pt J, $\pi$ , B(M1), B(E2), bands; B(M1) / B(E2) compared to theoretical predictions. REPT JAEA-Review 2007-046,P38,Zhou   |

KEYNUMBERS AND KEYWORDS

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**A=187 (continued)**

<sup>187</sup>Pb      2009SE13      NUCLEAR MOMENTS <sup>183,185,187,189</sup>Pb [from <sup>238</sup>U(p, X), E=1, 4 GeV online mass separator using the in-source resonance ionization spectroscopy technique]; measured hfs spectra; deduced  $\mu$ , hyperfine coupling constants, charge radii. Comparison with other data. JOUR ZAANE 41 315

**A=188**

<sup>188</sup>Ta      2008STZY      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir / <sup>198</sup>Ir / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>203</sup>Ir / <sup>197</sup>Pt / <sup>198</sup>Pt / <sup>199</sup>Pt / <sup>200</sup>Pt / <sup>201</sup>Pt / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>201</sup>Au / <sup>202</sup>Au / <sup>203</sup>Au / <sup>204</sup>Au / <sup>205</sup>Au / <sup>193</sup>Os / <sup>195</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>190</sup>W / <sup>191</sup>W / <sup>203</sup>Hg / <sup>204</sup>Hg / <sup>205</sup>Hg / <sup>206</sup>Hg / <sup>191</sup>Re / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>196</sup>Re / <sup>188</sup>Ta / <sup>189</sup>Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey

2009AL16      RADIOACTIVITY <sup>188</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re, <sup>189</sup>Ta(IT), <sup>188</sup>Ta( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875

<sup>188</sup>W      2009AL16      RADIOACTIVITY <sup>188</sup>Ta, <sup>190,191</sup>W, <sup>192,193</sup>Re, <sup>189</sup>Ta(IT), <sup>188</sup>Ta( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875

<sup>188</sup>Re      2009LU08      NUCLEAR REACTIONS <sup>188</sup>Os(n, p), <sup>190</sup>Os(n, p), (n, n'), E=13.5-14.8 MeV; measured E $\gamma$ , I $\gamma$ , cross sections using the activation technique. Comparison with model calculations and evaluated databases. JOUR NIMBE 267 1051

2009SH28      RADIOACTIVITY <sup>188</sup>Re( $\beta^-$ ); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin.; deduced quadrupole deformation and triaxiality parameters. Comparison with Hartree-Fock-Bogoliubov, total Routhian surface calculations. JOUR IMPEE 18 1603

<sup>188</sup>Os      2008PHZY      NUCLEAR REACTIONS <sup>185,187</sup>Re(<sup>3</sup>He, d), E=30 MeV; measured Id, Ed; deduced  $\sigma(\theta, J, \pi)$ ; calculated  $\sigma(\theta, J, \pi)$  using DWBA code DWUCK4; extracted structure of  $4_3^+$  states in <sup>186,188</sup>Os. REPT MLL 2007 Annual,P17,Phillips

2009MA24      NUCLEAR REACTIONS <sup>12</sup>C(<sup>180</sup>Hf, X), E=65 MeV; measured E $\gamma$ , I $\gamma$ ; <sup>188</sup>Os, <sup>192</sup>Pt; deduced giant dipole resonance strength distributions. JOUR APOBB 40 545

2009M005      NUCLEAR REACTIONS <sup>186</sup>W(<sup>7</sup>Li, 4np), (<sup>7</sup>Li, 3nd), (<sup>7</sup>Li, 2nt), E=51, 53, 56, 59 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin, DCO ratios,  $\gamma(t)$ , half-life by decay curve method. <sup>188</sup>Os; deduced levels, J,  $\pi$ , isomers, configurations. <sup>182,184,186,188</sup>Os; systematics. JOUR PRVCA 79 024310

2009PHZZ      NUCLEAR REACTIONS <sup>185,187</sup>Re(<sup>3</sup>He, d), E=30 MeV; measured E(particle), I(particle); deduced  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$ ; deduced  $K^\pi=1^+$  bands. REPT MLL 2008 Annual,P13,Phillips

2009P002      NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma(t)$ , half-lives. <sup>198</sup>Os; deduced levels, J,  $\pi$ , configuration. <sup>198</sup>Os; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of <sup>198</sup>Os and <sup>202</sup>Pt level schemes. <sup>186,188,190,192,194,196,198</sup>Os, <sup>188,190,192,194,196,198,200,202</sup>Pt; level systematics. JOUR PRVCA 79 031305

KEYNUMBERS AND KEYWORDS

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**A=188 (continued)**

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| 2009SH28          | RADIOACTIVITY $^{188}\text{Re}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced quadrupole deformation and triaxiality parameters. Comparison with Hartree-Fock-Bogoliubov, total Routhian surface calculations. JOUR IMPEE 18 1603  |
| $^{188}\text{Pt}$ | 2008ZHZX NUCLEAR REACTIONS $^{176}\text{Yb}(^{18}\text{O}, 6n)$ , $E=88, 95$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced $J$ , $\pi$ , rotational bands, shape-coexistence; calculated energy levels using projected shell model. REPT JAEA-Review 2008-054,P34,Zhou   |
| 2009P002          | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. $^{198}\text{Os}$ ; deduced levels, $J$ , $\pi$ , configuration. $^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of $^{198}\text{Os}$ and $^{202}\text{Pt}$ level schemes. $^{186,188,190,192,194,196,198}\text{Os}$ , $^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305 |

**A=189**

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| $^{189}\text{Ta}$ | 2008STZY NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, $J$ , $\pi$ . THESIS S J Steer, University of Surrey  |
| 2009AL16          | RADIOACTIVITY $^{188}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ , $^{189}\text{Ta}(\text{IT})$ , $^{188}\text{Ta}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875   |
| 2009ST16          | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{189}\text{Ta}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{191}\text{W}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{193}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{198}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{196}\text{Re}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{200}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Hg}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Hg}$ , $E=1$ GeV / nucleon; measured delayed $I\gamma$ , $E\gamma$ , isomer decay. JOUR IMPEE 18 1002 |
| $^{189}\text{Ir}$ | 2009VI01 NUCLEAR REACTIONS $^{150,150m,152m}\text{Eu}$ , $^{190m}\text{Ir}(\gamma, n)$ , $E=12, 12.5, 16$ MeV; measured $E\gamma$ , $I\gamma$ , half-lives, isomeric yield ratios; deduced levels. Comparison with TALYS and MCEM calculations. JOUR PRVCA 79 014615   |
| $^{189}\text{Pt}$ | 2009HU12 NUCLEAR REACTIONS $^{176}\text{Yb}(^{18}\text{O}, 5n)$ , $E=88, 95$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ . $^{189}\text{Pt}$ ; deduced levels, $J$ , $\pi$ , rotational bands, configurations. Comparisons with predictions of triaxial particle-rotor model. JOUR PRVCA 80 034303  |
| $^{189}\text{Tl}$ | 2009SA09 RADIOACTIVITY $^{189}\text{Pb}(\beta^+)$ , (EC) [from $^{238}\text{U}(\text{p}, X)$ , $E=1.4$ GeV]; measured prompt and delayed $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft; calculated nuclear deformation. $^{189}\text{Tl}$ deduced levels, $J$ , $\pi$ . In-source laser spectroscopy. JOUR ZAANE 39 33  |

KEYNUMBERS AND KEYWORDS

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**A=189 (continued)**

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| $^{189}\text{Pb}$ | 2009AN11 | RADIOACTIVITY $^{194,194m}\text{At}(\alpha)$ , $^{190,190m}\text{Bi}(\alpha)$ [from $^{141}\text{Pr}(^{56}\text{Fe}, 3n)$ , E=259 MeV]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$ correlations. $^{190}\text{Bi}$ , $^{194}\text{At}$ ; deduced levels, J, $\pi$ , multipolarity, hindrance factors, configurations. $^{193}\text{Po}$ , $^{193,195}\text{At}(\alpha)$ ; measured $E\alpha$ .<br>JOUR PRVCA 79 064320 |
|                   | 2009DR03 | NUCLEAR REACTIONS $^{164}\text{Er}(^{29}\text{Si}, 4n)$ , E=20 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients. $^{189}\text{Pb}$ ; deduced levels, J, $\pi$ , multipolarity, configuration, shear band. $^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302                          |
|                   | 2009SA09 | RADIOACTIVITY $^{189}\text{Pb}(\beta^+)$ , (EC) [from $^{238}\text{U}(p, X)$ , E=1.4 GeV]; measured prompt and delayed $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin; deduced $T_{1/2}$ , log ft; calculated nuclear deformation. $^{189}\text{Tl}$ deduced levels, J, $\pi$ . In-source laser spectroscopy. JOUR ZAANE 39 33  |
|                   | 2009SE13 | NUCLEAR MOMENTS $^{183,185,187,189}\text{Pb}$ [from $^{238}\text{U}(p, X)$ , E=1, 4 GeV online mass separator using the in-source resonance ionization spectroscopy technique]; measured hfs spectra; deduced $\mu$ , hyperfine coupling constants, charge radii. Comparison with other data. JOUR ZAANE 41 315   |
| $^{189}\text{Bi}$ | 2009AN11 | RADIOACTIVITY $^{194,194m}\text{At}(\alpha)$ , $^{190,190m}\text{Bi}(\alpha)$ [from $^{141}\text{Pr}(^{56}\text{Fe}, 3n)$ , E=259 MeV]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$ correlations. $^{190}\text{Bi}$ , $^{194}\text{At}$ ; deduced levels, J, $\pi$ , multipolarity, hindrance factors, configurations. $^{193}\text{Po}$ , $^{193,195}\text{At}(\alpha)$ ; measured $E\alpha$ .<br>JOUR PRVCA 79 064320 |

**A=190**

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| $^{190}\text{W}$  | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey |
|                   | 2009AL16 | RADIOACTIVITY $^{188}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ , $^{189}\text{Ta}(\text{IT})$ , $^{188}\text{Ta}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875  |
|                   | 2009FA06 | NUCLEAR REACTIONS $\text{Be}(^{208}\text{Pb}, X)$ , E=1 GeV / nucleon; $^{190}\text{W}$ ; measured $I\gamma$ , $E\gamma$ , $\gamma\gamma$ -coin; deduced J, $\pi$ , $T_{1/2}$ . Blocked BCS calculations. JOUR APOBB 40 885   |
| $^{190}\text{Re}$ | 2009LU03 | NUCLEAR REACTIONS $^{86}\text{Sr}$ , $^{184}\text{Os}(n, 2n)$ , $^{190}\text{Os}(n, p)$ , E=13.5-14.8 MeV; measured $E\gamma$ , $I\gamma$ , cross sections using the activation technique. Compared results to model calculations, existing data, and evaluated databases. JOUR JRNCD 279 443   |
|                   | 2009LU08 | NUCLEAR REACTIONS $^{188}\text{Os}(n, p)$ , $^{190}\text{Os}(n, p)$ , $(n, n')$ , E=13.5-14.8 MeV; measured $E\gamma$ , $I\gamma$ , cross sections using the activation technique. Comparison with model calculations and evaluated databases. JOUR NIMBE 267 1051  |

KEYNUMBERS AND KEYWORDS

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**A=190 (continued)**

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| $^{190}\text{Os}$ | 2009LU08 | NUCLEAR REACTIONS $^{188}\text{Os}(n, p)$ , $^{190}\text{Os}(n, p)$ , $(n, n')$ , $E=13.5\text{-}14.8$ MeV; measured $E_\gamma$ , $I_\gamma$ , cross sections using the activation technique. Comparison with model calculations and evaluated databases. JOUR NIMBE 267 1051  |
|                   | 2009P002 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. $^{198}\text{Os}$ ; deduced levels, $J$ , $\pi$ , configuration. $^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of $^{198}\text{Os}$ and $^{202}\text{Pt}$ level schemes. $^{186,188,190,192,194,196,198}\text{Os}$ , $^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305  |
| $^{190}\text{Ir}$ | 2008VI11 | NUCLEAR REACTIONS $^{191}\text{Ir}$ , $^{197}\text{Au}(\gamma, n)$ , $E=12.125$ MeV; $^{197}\text{Au}(d, p)$ , $E=4.5$ MeV; measured $E_\gamma$ , $I_\gamma$ , Isomeric ratios. JOUR BRSPE 72 1577   |
|                   | 2009HA13 | NUCLEAR REACTIONS $^{191,193}\text{Ir}$ , $^{192}\text{Os}(\gamma, n)^{190}\text{Ir}$ / $^{191}\text{Os}$ / $^{191m}\text{Os}$ / $^{192}\text{Ir}$ , $E=7600\text{-}9900$ keV; measured $E_\gamma$ , $I_\gamma$ from radioactive decays of $^{190}\text{Ir}$ , $^{191}\text{Os}$ , $^{191m}\text{Os}$ and $^{192}\text{Ir}$ ; deduced yields and $\sigma$ . Comparison with calculated using NON-SMOKER <sup>WEB</sup> and TALYS codes. JOUR PRVCA 79 055807   |
| $^{190}\text{Pt}$ | 2009P002 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. $^{198}\text{Os}$ ; deduced levels, $J$ , $\pi$ , configuration. $^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of $^{198}\text{Os}$ and $^{202}\text{Pt}$ level schemes. $^{186,188,190,192,194,196,198}\text{Os}$ , $^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305  |
| $^{190}\text{Au}$ | 2009SI16 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, 3n)$ , $(^{16}\text{O}, 4n)$ , $(^{16}\text{O}, 5n)$ , $(^{16}\text{O}, 3np)$ , $(^{16}\text{O}, 4np)$ , $(^{16}\text{O}, 5np)$ , $(^{16}\text{O}, n\alpha)$ , $(^{16}\text{O}, 2n\alpha)$ , $(^{16}\text{O}, 3n\alpha)^{190}\text{Au}$ / $^{191}\text{Au}$ / $^{192}\text{Au}$ / $^{191}\text{Hg}$ / $^{191m}\text{Hg}$ / $^{192}\text{Hg}$ / $^{193}\text{Hg}$ / $^{193m}\text{Hg}$ / $^{192}\text{Tl}$ / $^{192m}\text{Tl}$ / $^{193}\text{Tl}$ / $^{193m}\text{Tl}$ / $^{194}\text{Tl}$ / $^{194m}\text{Tl}$ , $E=76\text{-}100$ MeV; measured $E_\gamma$ , $I_\gamma$ , $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with $^{16}\text{O}$ and $^{12}\text{C}$ projectiles and with PACE4 predictions. JOUR PRVCA 80 014601 |
| $^{190}\text{Bi}$ | 2009AN11 | RADIOACTIVITY $^{194,194m}\text{At}(\alpha)$ , $^{190,190m}\text{Bi}(\alpha)$ [from $^{141}\text{Pr}(^{56}\text{Fe}, 3n)$ , $E=259$ MeV]; measured $E_\alpha$ , $I_\alpha$ , $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$ correlations. $^{190}\text{Bi}$ , $^{194}\text{At}$ ; deduced levels, $J$ , $\pi$ , multipolarity, hindrance factors, configurations. $^{193}\text{Po}$ , $^{193,195}\text{At}(\alpha)$ ; measured $E_\alpha$ . JOUR PRVCA 79 064320   |

**A=191**

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| $^{191}\text{W}$ | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$ / $^{198}\text{Ir}$ / $^{199}\text{Ir}$ / $^{200}\text{Ir}$ / $^{201}\text{Ir}$ / $^{202}\text{Ir}$ / $^{203}\text{Ir}$ / $^{197}\text{Pt}$ / $^{198}\text{Pt}$ / $^{199}\text{Pt}$ / $^{200}\text{Pt}$ / $^{201}\text{Pt}$ / $^{202}\text{Pt}$ / $^{203}\text{Pt}$ / $^{204}\text{Pt}$ / $^{201}\text{Au}$ / $^{202}\text{Au}$ / $^{203}\text{Au}$ / $^{204}\text{Au}$ / $^{205}\text{Au}$ / $^{193}\text{Os}$ / $^{195}\text{Os}$ / $^{197}\text{Os}$ / $^{198}\text{Os}$ / $^{199}\text{Os}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{203}\text{Hg}$ / $^{204}\text{Hg}$ / $^{205}\text{Hg}$ / $^{206}\text{Hg}$ / $^{191}\text{Re}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{196}\text{Re}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ ; measured $E_\gamma$ , $I_\gamma$ ; Deduced levels, $J$ , $\pi$ . THESIS S J Steer, University of Surrey |
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A=191 (*continued*)

- 2009AL16 RADIOACTIVITY  $^{188}\text{Ta}$ ,  $^{190,191}\text{W}$ ,  $^{192,193}\text{Re}$ ,  $^{189}\text{Ta}(\text{IT})$ ,  $^{188}\text{Ta}(\beta^-)$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875
- 2009ST16 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{189}\text{Ta}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{191}\text{W}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{193}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{197}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{198}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{196}\text{Re}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{200}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{201}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{202}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{203}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{197}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{203}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{201}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{202}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{205}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Hg}$ ;  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{205}\text{Hg}$ ,  $E=1$  GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- $^{191}\text{Re}$  2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir}$  /  $^{198}\text{Ir}$  /  $^{199}\text{Ir}$  /  $^{200}\text{Ir}$  /  $^{201}\text{Ir}$  /  $^{202}\text{Ir}$  /  $^{203}\text{Ir}$  /  $^{197}\text{Pt}$  /  $^{198}\text{Pt}$  /  $^{199}\text{Pt}$  /  $^{200}\text{Pt}$  /  $^{201}\text{Pt}$  /  $^{202}\text{Pt}$  /  $^{203}\text{Pt}$  /  $^{204}\text{Pt}$  /  $^{201}\text{Au}$  /  $^{202}\text{Au}$  /  $^{203}\text{Au}$  /  $^{204}\text{Au}$  /  $^{205}\text{Au}$  /  $^{193}\text{Os}$  /  $^{195}\text{Os}$  /  $^{197}\text{Os}$  /  $^{198}\text{Os}$  /  $^{199}\text{Os}$  /  $^{190}\text{W}$  /  $^{191}\text{W}$  /  $^{203}\text{Hg}$  /  $^{204}\text{Hg}$  /  $^{205}\text{Hg}$  /  $^{206}\text{Hg}$  /  $^{191}\text{Re}$  /  $^{192}\text{Re}$  /  $^{193}\text{Re}$  /  $^{194}\text{Re}$  /  $^{196}\text{Re}$  /  $^{188}\text{Ta}$  /  $^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- $^{191}\text{Os}$  2009HA13 NUCLEAR REACTIONS  $^{191,193}\text{Ir}$ ,  $^{192}\text{Os}(\gamma, n)^{190}\text{Ir}$  /  $^{191}\text{Os}$  /  $^{191m}\text{Os}$  /  $^{192}\text{Ir}$ ,  $E=7600$ - $9900$  keV; measured  $E\gamma$ ,  $I\gamma$  from radioactive decays of  $^{190}\text{Ir}$ ,  $^{191}\text{Os}$ ,  $^{191m}\text{Os}$  and  $^{192}\text{Ir}$ ; deduced yields and  $\sigma$ . Comparison with calculated using NON-SMOKER<sup>WEB</sup> and TALYS codes. JOUR PRVCA 79 055807
- $^{191}\text{Ir}$  2009F007 NUCLEAR REACTIONS  $^{191,193}\text{Ir}$ ,  $^{197}\text{Au}(n, n'\gamma)$ ,  $E<20$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , half-lives of 11 / 2- isomers using GEANIE array.  $^{191m,193m}\text{Ir}$ ,  $^{197m}\text{Au}$ ; deduced levels, J,  $\pi$ , multipolarities. Comparison of measured  $\sigma$  with predictions from FKK-GNASH reaction model. JOUR PRVCA 80 044612
- $^{191}\text{Pt}$  2009QA01 NUCLEAR REACTIONS  $^{192}\text{Os}(^3\text{He}, 4n)$ ,  $E < 36$  MeV; measured  $E\gamma$ ,  $I\gamma$ , excitation function using the stacked foil activation technique. JOUR ARISE 67 1074
- $^{191}\text{Au}$  2009SI16 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{16}\text{O}, 3n)$ ,  $(^{16}\text{O}, 4n)$ ,  $(^{16}\text{O}, 5n)$ ,  $(^{16}\text{O}, 3np)$ ,  $(^{16}\text{O}, 4np)$ ,  $(^{16}\text{O}, 5np)$ ,  $(^{16}\text{O}, n\alpha)$ ,  $(^{16}\text{O}, 2n\alpha)$ ,  $(^{16}\text{O}, 3n\alpha)^{190}\text{Au}$  /  $^{191}\text{Au}$  /  $^{192}\text{Au}$  /  $^{191}\text{Hg}$  /  $^{191m}\text{Hg}$  /  $^{192}\text{Hg}$  /  $^{193}\text{Hg}$  /  $^{193m}\text{Hg}$  /  $^{192}\text{Tl}$  /  $^{192m}\text{Tl}$  /  $^{193}\text{Tl}$  /  $^{193m}\text{Tl}$  /  $^{194}\text{Tl}$  /  $^{194m}\text{Tl}$ ,  $E=76$ - $100$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with  $^{16}\text{O}$  and  $^{12}\text{C}$  projectiles and with PACE4 predictions. JOUR PRVCA 80 014601
- $^{191}\text{Hg}$  2009SI16 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{16}\text{O}, 3n)$ ,  $(^{16}\text{O}, 4n)$ ,  $(^{16}\text{O}, 5n)$ ,  $(^{16}\text{O}, 3np)$ ,  $(^{16}\text{O}, 4np)$ ,  $(^{16}\text{O}, 5np)$ ,  $(^{16}\text{O}, n\alpha)$ ,  $(^{16}\text{O}, 2n\alpha)$ ,  $(^{16}\text{O}, 3n\alpha)^{190}\text{Au}$  /  $^{191}\text{Au}$  /  $^{192}\text{Au}$  /  $^{191}\text{Hg}$  /  $^{191m}\text{Hg}$  /  $^{192}\text{Hg}$  /  $^{193}\text{Hg}$  /  $^{193m}\text{Hg}$  /  $^{192}\text{Tl}$  /  $^{192m}\text{Tl}$  /  $^{193}\text{Tl}$  /  $^{193m}\text{Tl}$  /  $^{194}\text{Tl}$  /  $^{194m}\text{Tl}$ ,  $E=76$ - $100$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with  $^{16}\text{O}$  and  $^{12}\text{C}$  projectiles and with PACE4 predictions. JOUR PRVCA 80 014601

KEYNUMBERS AND KEYWORDS

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**A=191 (continued)**

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| $^{191}\text{Pb}$ | 2009DR03 | NUCLEAR REACTIONS $^{164}\text{Er}(^{29}\text{Si}, 4n)$ , $E=20$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients. $^{189}\text{Pb}$ ; deduced levels, $J$ , $\pi$ , multipolarity, configuration, shear band. $^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302                       |
| $^{191}\text{Bi}$ | 2009AN11 | RADIOACTIVITY $^{194,194m}\text{At}(\alpha)$ , $^{190,190m}\text{Bi}(\alpha)$ [from $^{141}\text{Pr}(^{56}\text{Fe}, 3n)$ , $E=259$ MeV]; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$ correlations. $^{190}\text{Bi}$ , $^{194}\text{At}$ ; deduced levels, $J$ , $\pi$ , multipolarity, hindrance factors, configurations. $^{193}\text{Po}$ , $^{193,195}\text{At}(\alpha)$ ; measured $E\alpha$ . JOUR PRVCA 79 064320 |

**A=192**

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| $^{192}\text{Re}$ | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, $J$ , $\pi$ . THESIS S J Steer, University of Surrey |
|                   | 2009AL16 | RADIOACTIVITY $^{188}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ , $^{189}\text{Ta}(\text{IT})$ , $^{188}\text{Ta}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875   |
| $^{192}\text{Os}$ | 2009P002 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. $^{198}\text{Os}$ ; deduced levels, $J$ , $\pi$ , configuration. $^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of $^{198}\text{Os}$ and $^{202}\text{Pt}$ level schemes. $^{186,188,190,192,194,196,198}\text{Os}$ , $^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305  |
| $^{192}\text{Ir}$ | 2009HA13 | NUCLEAR REACTIONS $^{191,193}\text{Ir}$ , $^{192}\text{Os}(\gamma, n)^{190}\text{Ir} / ^{191}\text{Os} / ^{191m}\text{Os} / ^{192}\text{Ir}$ , $E=7600-9900$ keV; measured $E\gamma$ , $I\gamma$ from radioactive decays of $^{190}\text{Ir}$ , $^{191}\text{Os}$ , $^{191m}\text{Os}$ and $^{192}\text{Ir}$ ; deduced yields and $\sigma$ . Comparison with calculated using NON-SMOKER <sup>WEB</sup> and TALYS codes. JOUR PRVCA 79 055807  |
| $^{192}\text{Pt}$ | 2009MA24 | NUCLEAR REACTIONS $^{12}\text{C}(^{180}\text{Hf}, X)$ , $E=65$ MeV; measured $E\gamma$ , $I\gamma$ ; $^{188}\text{Os}$ , $^{192}\text{Pt}$ ; deduced giant dipole resonance strength distributions. JOUR APOBB 40 545  |
|                   | 2009P002 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ , $E=1$ GeV / nucleon; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -, (particle) $\gamma$ -coin, $\gamma\gamma(t)$ , half-lives. $^{198}\text{Os}$ ; deduced levels, $J$ , $\pi$ , configuration. $^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of $^{198}\text{Os}$ and $^{202}\text{Pt}$ level schemes. $^{186,188,190,192,194,196,198}\text{Os}$ , $^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305  |



KEYNUMBERS AND KEYWORDS

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**A=192 (continued)**

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|-------------------|----------|--|
| $^{192}\text{Au}$ | 2009SI16 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, 3n)$ , $(^{16}\text{O}, 4n)$ , $(^{16}\text{O}, 5n)$ , $(^{16}\text{O}, 3np)$ , $(^{16}\text{O}, 4np)$ , $(^{16}\text{O}, 5np)$ , $(^{16}\text{O}, n\alpha)$ , $(^{16}\text{O}, 2n\alpha)$ , $(^{16}\text{O}, 3n\alpha)$ $^{190}\text{Au}$ / $^{191}\text{Au}$ / $^{192}\text{Au}$ / $^{191}\text{Hg}$ / $^{191m}\text{Hg}$ / $^{192}\text{Hg}$ / $^{193}\text{Hg}$ / $^{193m}\text{Hg}$ / $^{192}\text{Tl}$ / $^{192m}\text{Tl}$ / $^{193}\text{Tl}$ / $^{193m}\text{Tl}$ / $^{194}\text{Tl}$ / $^{194m}\text{Tl}$ , E=76-100 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with $^{16}\text{O}$ and $^{12}\text{C}$ projectiles and with PACE4 predictions. JOUR PRVCA 80 014601 |
| $^{192}\text{Hg}$ | 2009SI16 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, 3n)$ , $(^{16}\text{O}, 4n)$ , $(^{16}\text{O}, 5n)$ , $(^{16}\text{O}, 3np)$ , $(^{16}\text{O}, 4np)$ , $(^{16}\text{O}, 5np)$ , $(^{16}\text{O}, n\alpha)$ , $(^{16}\text{O}, 2n\alpha)$ , $(^{16}\text{O}, 3n\alpha)$ $^{190}\text{Au}$ / $^{191}\text{Au}$ / $^{192}\text{Au}$ / $^{191}\text{Hg}$ / $^{191m}\text{Hg}$ / $^{192}\text{Hg}$ / $^{193}\text{Hg}$ / $^{193m}\text{Hg}$ / $^{192}\text{Tl}$ / $^{192m}\text{Tl}$ / $^{193}\text{Tl}$ / $^{193m}\text{Tl}$ / $^{194}\text{Tl}$ / $^{194m}\text{Tl}$ , E=76-100 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with $^{16}\text{O}$ and $^{12}\text{C}$ projectiles and with PACE4 predictions. JOUR PRVCA 80 014601 |
| $^{192}\text{Tl}$ | 2009SI16 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{16}\text{O}, 3n)$ , $(^{16}\text{O}, 4n)$ , $(^{16}\text{O}, 5n)$ , $(^{16}\text{O}, 3np)$ , $(^{16}\text{O}, 4np)$ , $(^{16}\text{O}, 5np)$ , $(^{16}\text{O}, n\alpha)$ , $(^{16}\text{O}, 2n\alpha)$ , $(^{16}\text{O}, 3n\alpha)$ $^{190}\text{Au}$ / $^{191}\text{Au}$ / $^{192}\text{Au}$ / $^{191}\text{Hg}$ / $^{191m}\text{Hg}$ / $^{192}\text{Hg}$ / $^{193}\text{Hg}$ / $^{193m}\text{Hg}$ / $^{192}\text{Tl}$ / $^{192m}\text{Tl}$ / $^{193}\text{Tl}$ / $^{193m}\text{Tl}$ / $^{194}\text{Tl}$ / $^{194m}\text{Tl}$ , E=76-100 MeV; measured $E\gamma$ , $I\gamma$ , $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with $^{16}\text{O}$ and $^{12}\text{C}$ projectiles and with PACE4 predictions. JOUR PRVCA 80 014601 |

**A=193**

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| $^{193}\text{Re}$ | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ $^{195}\text{Ir}$ / $^{198}\text{Ir}$ / $^{199}\text{Ir}$ / $^{200}\text{Ir}$ / $^{201}\text{Ir}$ / $^{202}\text{Ir}$ / $^{203}\text{Ir}$ / $^{197}\text{Pt}$ / $^{198}\text{Pt}$ / $^{199}\text{Pt}$ / $^{200}\text{Pt}$ / $^{201}\text{Pt}$ / $^{202}\text{Pt}$ / $^{203}\text{Pt}$ / $^{204}\text{Pt}$ / $^{201}\text{Au}$ / $^{202}\text{Au}$ / $^{203}\text{Au}$ / $^{204}\text{Au}$ / $^{205}\text{Au}$ / $^{193}\text{Os}$ / $^{195}\text{Os}$ / $^{197}\text{Os}$ / $^{198}\text{Os}$ / $^{199}\text{Os}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{203}\text{Hg}$ / $^{204}\text{Hg}$ / $^{205}\text{Hg}$ / $^{206}\text{Hg}$ / $^{191}\text{Re}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{196}\text{Re}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey |
|                   | 2009AL16 | RADIOACTIVITY $^{188}\text{Ta}$ , $^{190,191}\text{W}$ , $^{192,193}\text{Re}$ , $^{189}\text{Ta}(\text{IT})$ , $^{188}\text{Ta}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , $\beta\gamma$ -coin., isomeric states. JOUR APOBB 40 875   |
| $^{193}\text{Os}$ | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)$ $^{195}\text{Ir}$ / $^{198}\text{Ir}$ / $^{199}\text{Ir}$ / $^{200}\text{Ir}$ / $^{201}\text{Ir}$ / $^{202}\text{Ir}$ / $^{203}\text{Ir}$ / $^{197}\text{Pt}$ / $^{198}\text{Pt}$ / $^{199}\text{Pt}$ / $^{200}\text{Pt}$ / $^{201}\text{Pt}$ / $^{202}\text{Pt}$ / $^{203}\text{Pt}$ / $^{204}\text{Pt}$ / $^{201}\text{Au}$ / $^{202}\text{Au}$ / $^{203}\text{Au}$ / $^{204}\text{Au}$ / $^{205}\text{Au}$ / $^{193}\text{Os}$ / $^{195}\text{Os}$ / $^{197}\text{Os}$ / $^{198}\text{Os}$ / $^{199}\text{Os}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{203}\text{Hg}$ / $^{204}\text{Hg}$ / $^{205}\text{Hg}$ / $^{206}\text{Hg}$ / $^{191}\text{Re}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{196}\text{Re}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey |

## A=193 (continued)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{193}\text{Ir}$  2009F007 NUCLEAR REACTIONS  ${}^{191,193}\text{Ir}$ ,  ${}^{197}\text{Au}(\text{n}, \text{n}'\gamma)$ , E<20 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\sigma$ , half-lives of 11 / 2- isomers using GEANIE array.  ${}^{191\text{m},193\text{m}}\text{Ir}$ ,  ${}^{197\text{m}}\text{Au}$ ; deduced levels, J,  $\pi$ , multiplicities. Comparison of measured  $\sigma$  with predictions from FKK-GNASH reaction model. JOUR PRVCA 80 044612
- ${}^{193}\text{Hg}$  2009LIZZ NUCLEAR REACTIONS Au, Nb, Ta(p, X), E=160, 247, 325 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ .  ${}^{87}\text{Y}$ ,  ${}^{177}\text{Lu}$ ,  ${}^{193,195}\text{Hg}$ ,  ${}^{194}\text{Ir}$ ,  ${}^{196}\text{Au}$ ; deduced isomeric yield ratios depending on Ep. Activation Method. CONF Cheboksary,P142,Libanova
- 2009SI16 NUCLEAR REACTIONS  ${}^{181}\text{Ta}({}^{16}\text{O}, 3\text{n})$ ,  $({}^{16}\text{O}, 4\text{n})$ ,  $({}^{16}\text{O}, 5\text{n})$ ,  $({}^{16}\text{O}, 3\text{np})$ ,  $({}^{16}\text{O}, 4\text{np})$ ,  $({}^{16}\text{O}, 5\text{np})$ ,  $({}^{16}\text{O}, \text{n}\alpha)$ ,  $({}^{16}\text{O}, 2\text{n}\alpha)$ ,  $({}^{16}\text{O}, 3\text{n}\alpha)$   ${}^{190}\text{Au}$  /  ${}^{191}\text{Au}$  /  ${}^{192}\text{Au}$  /  ${}^{191}\text{Hg}$  /  ${}^{191\text{m}}\text{Hg}$  /  ${}^{192}\text{Hg}$  /  ${}^{193}\text{Hg}$  /  ${}^{193\text{m}}\text{Hg}$  /  ${}^{192}\text{Tl}$  /  ${}^{192\text{m}}\text{Tl}$  /  ${}^{193}\text{Tl}$  /  ${}^{193\text{m}}\text{Tl}$  /  ${}^{194}\text{Tl}$  /  ${}^{194\text{m}}\text{Tl}$ , E=76-100 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with  ${}^{16}\text{O}$  and  ${}^{12}\text{C}$  projectiles and with PACE4 predictions. JOUR PRVCA 80 014601
- ${}^{193}\text{Tl}$  2009SI16 NUCLEAR REACTIONS  ${}^{181}\text{Ta}({}^{16}\text{O}, 3\text{n})$ ,  $({}^{16}\text{O}, 4\text{n})$ ,  $({}^{16}\text{O}, 5\text{n})$ ,  $({}^{16}\text{O}, 3\text{np})$ ,  $({}^{16}\text{O}, 4\text{np})$ ,  $({}^{16}\text{O}, 5\text{np})$ ,  $({}^{16}\text{O}, \text{n}\alpha)$ ,  $({}^{16}\text{O}, 2\text{n}\alpha)$ ,  $({}^{16}\text{O}, 3\text{n}\alpha)$   ${}^{190}\text{Au}$  /  ${}^{191}\text{Au}$  /  ${}^{192}\text{Au}$  /  ${}^{191}\text{Hg}$  /  ${}^{191\text{m}}\text{Hg}$  /  ${}^{192}\text{Hg}$  /  ${}^{193}\text{Hg}$  /  ${}^{193\text{m}}\text{Hg}$  /  ${}^{192}\text{Tl}$  /  ${}^{192\text{m}}\text{Tl}$  /  ${}^{193}\text{Tl}$  /  ${}^{193\text{m}}\text{Tl}$  /  ${}^{194}\text{Tl}$  /  ${}^{194\text{m}}\text{Tl}$ , E=76-100 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with  ${}^{16}\text{O}$  and  ${}^{12}\text{C}$  projectiles and with PACE4 predictions. JOUR PRVCA 80 014601
- ${}^{193}\text{Pb}$  2009DR03 NUCLEAR REACTIONS  ${}^{164}\text{Er}({}^{29}\text{Si}, 4\text{n})$ , E=20 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients.  ${}^{189}\text{Pb}$ ; deduced levels, J,  $\pi$ , multipolarity, configuration, shear band.  ${}^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302
- ${}^{193}\text{Po}$  2009AN11 NUCLEAR REACTIONS  ${}^{141}\text{Pr}({}^{56}\text{Fe}, \text{xn}){}^{193}\text{Po}$  /  ${}^{193\text{m}}\text{Po}$  /  ${}^{193}\text{At}$  /  ${}^{194}\text{At}$  /  ${}^{194\text{m}}\text{At}$  /  ${}^{195}\text{At}$ , E=259 MeV]; measured  $\text{E}\alpha$ ,  $\text{I}\alpha$ , recoil- $\alpha$ - $\alpha$  and  $\alpha$ - $\gamma$  correlations. JOUR PRVCA 79 064320
- 2009AN11 RADIOACTIVITY  ${}^{194,194\text{m}}\text{At}(\alpha)$ ,  ${}^{190,190\text{m}}\text{Bi}(\alpha)$ [from  ${}^{141}\text{Pr}({}^{56}\text{Fe}, 3\text{n})$ , E=259 MeV]; measured  $\text{E}\alpha$ ,  $\text{I}\alpha$ ,  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -,  $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$  correlations.  ${}^{190}\text{Bi}$ ,  ${}^{194}\text{At}$ ; deduced levels, J,  $\pi$ , multipolarity, hindrance factors, configurations.  ${}^{193}\text{Po}$ ,  ${}^{193,195}\text{At}(\alpha)$ ; measured  $\text{E}\alpha$ . JOUR PRVCA 79 064320

KEYNUMBERS AND KEYWORDS

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**A=193 (continued)**

- <sup>193</sup>At    2009AN11    NUCLEAR REACTIONS <sup>141</sup>Pr(<sup>56</sup>Fe, xn)<sup>193</sup>Po / <sup>193m</sup>Po / <sup>193</sup>At / <sup>194</sup>At / <sup>194m</sup>At / <sup>195</sup>At, E=259 MeV]; measured E $\alpha$ , I $\alpha$ , recoil- $\alpha$ - $\alpha$  and  $\alpha$ - $\gamma$  correlations. JOUR PRVCA 79 064320
- 2009AN11    RADIOACTIVITY <sup>194,194m</sup>At( $\alpha$ ), <sup>190,190m</sup>Bi( $\alpha$ )[from <sup>141</sup>Pr(<sup>56</sup>Fe, 3n), E=259 MeV]; measured E $\alpha$ , I $\alpha$ , E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -,  $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$  correlations. <sup>190</sup>Bi, <sup>194</sup>At; deduced levels, J,  $\pi$ , multipolarity, hindrance factors, configurations. <sup>193</sup>Po, <sup>193,195</sup>At( $\alpha$ ); measured E $\alpha$ . JOUR PRVCA 79 064320

**A=194**

- <sup>194</sup>Re    2008ST20    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re / <sup>196</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>205</sup>Au, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives, B(E2), B(E3). <sup>204</sup>Pt; deduced levels, J,  $\pi$ . Comparisons with <sup>206</sup>Hg and shell model calculations. JOUR PRVCA 78 061302
- 2008STZY    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir / <sup>198</sup>Ir / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>203</sup>Ir / <sup>197</sup>Pt / <sup>198</sup>Pt / <sup>199</sup>Pt / <sup>200</sup>Pt / <sup>201</sup>Pt / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>201</sup>Au / <sup>202</sup>Au / <sup>203</sup>Au / <sup>204</sup>Au / <sup>205</sup>Au / <sup>193</sup>Os / <sup>195</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>190</sup>W / <sup>191</sup>W / <sup>203</sup>Hg / <sup>204</sup>Hg / <sup>205</sup>Hg / <sup>206</sup>Hg / <sup>191</sup>Re / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>196</sup>Re / <sup>188</sup>Ta / <sup>189</sup>Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- <sup>194</sup>Os    2009P002    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives. <sup>198</sup>Os; deduced levels, J,  $\pi$ , configuration. <sup>198</sup>Os; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of <sup>198</sup>Os and <sup>202</sup>Pt level schemes. <sup>186,188,190,192,194,196,198</sup>Os, <sup>188,190,192,194,196,198,200,202</sup>Pt; level systematics. JOUR PRVCA 79 031305
- <sup>194</sup>Ir    2009LIZZ    NUCLEAR REACTIONS Au, Nb, Ta(p, X), E=160, 247, 325 MeV; measured E $\gamma$ , I $\gamma$ . <sup>87</sup>Y, <sup>177</sup>Lu, <sup>193,195</sup>Hg, <sup>194</sup>Ir, <sup>196</sup>Au; deduced isomeric yield ratios depending on Ep. Activation Method. CONF Cheboksary,P142,Libanova
- <sup>194</sup>Pt    2009P002    NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X), E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives. <sup>198</sup>Os; deduced levels, J,  $\pi$ , configuration. <sup>198</sup>Os; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of <sup>198</sup>Os and <sup>202</sup>Pt level schemes. <sup>186,188,190,192,194,196,198</sup>Os, <sup>188,190,192,194,196,198,200,202</sup>Pt; level systematics. JOUR PRVCA 79 031305
- <sup>194</sup>Au    2009SK02    NUCLEAR REACTIONS Pt(<sup>6</sup>Li, X), E=22.5-42.5 MeV; <sup>196,197,198,199,200,201</sup>Tl; <sup>194,196,198,199</sup>Au; Measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- <sup>194</sup>Tl    2009MA27    NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>18</sup>O, 5n), E=91, 93 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin; deduced J,  $\pi$ , band structure, B(M1) / B(E2). JOUR APOBB 40 657

KEYNUMBERS AND KEYWORDS

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**A=194 (continued)**

- 2009SI16 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{16}\text{O}, 3\text{n}), (^{16}\text{O}, 4\text{n}), (^{16}\text{O}, 5\text{n}), (^{16}\text{O}, 3\text{np}), (^{16}\text{O}, 4\text{np}), (^{16}\text{O}, 5\text{np}), (^{16}\text{O}, \text{n}\alpha), (^{16}\text{O}, 2\text{n}\alpha), (^{16}\text{O}, 3\text{n}\alpha)^{190}\text{Au} / ^{191}\text{Au} / ^{192}\text{Au} / ^{191}\text{Hg} / ^{191\text{m}}\text{Hg} / ^{192}\text{Hg} / ^{193}\text{Hg} / ^{193\text{m}}\text{Hg} / ^{192}\text{Tl} / ^{192\text{m}}\text{Tl} / ^{193}\text{Tl} / ^{193\text{m}}\text{Tl} / ^{194}\text{Tl} / ^{194\text{m}}\text{Tl}$ , E=76-100 MeV; measured  $E\gamma, I\gamma, \sigma$ , and excitation functions; deduced fraction of incomplete fusion. Comparison with experimental data for other reactions with  $^{16}\text{O}$  and  $^{12}\text{C}$  projectiles and with PACE4 predictions. JOUR PRVCA 80 014601
- $^{194}\text{Pb}$  2009KU03 NUCLEAR REACTIONS  $^{168}\text{Er}(^{30}\text{Si}, 4\text{n})^{194}\text{Pb}$ , E=142 MeV; measured  $E\gamma, I\gamma, \gamma\gamma$ -coin, angular distributions.  $^{194}\text{Pb}$ ; deduced levels, J,  $\pi$ , multipolarity, rotational bands. JOUR PRVCA 79 014315
- $^{194}\text{At}$  2009AN11 NUCLEAR REACTIONS  $^{141}\text{Pr}(^{56}\text{Fe}, \text{xn})^{193}\text{Po} / ^{193\text{m}}\text{Po} / ^{193}\text{At} / ^{194}\text{At} / ^{194\text{m}}\text{At} / ^{195}\text{At}$ , E=259 MeV; measured  $E\alpha, I\alpha$ , recoil- $\alpha$ - $\alpha$  and  $\alpha$ - $\gamma$  correlations. JOUR PRVCA 79 064320
- 2009AN11 RADIOACTIVITY  $^{194,194\text{m}}\text{At}(\alpha), ^{190,190\text{m}}\text{Bi}(\alpha)$ [from  $^{141}\text{Pr}(^{56}\text{Fe}, 3\text{n})$ , E=259 MeV]; measured  $E\alpha, I\alpha, E\gamma, I\gamma, \gamma\gamma$ -,  $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$  correlations.  $^{190}\text{Bi}, ^{194}\text{At}$ ; deduced levels, J,  $\pi$ , multipolarity, hindrance factors, configurations.  $^{193}\text{Po}, ^{193,195}\text{At}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064320

**A=195**

- $^{195}\text{Re}$  2008ST20 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ , E=1 GeV / nucleon; measured  $E\gamma, I\gamma$ , half-lives, B(E2), B(E3).  $^{204}\text{Pt}$ ; deduced levels, J,  $\pi$ . Comparisons with  $^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302
- $^{195}\text{Os}$  2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured  $E\gamma, I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- $^{195}\text{Ir}$  2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured  $E\gamma, I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey

**A=195 (continued)**

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ ,  $E=1$  GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{195}\text{Hg}$  2009LIZZ NUCLEAR REACTIONS Au, Nb, Ta(p, X),  $E=160, 247, 325$  MeV; measured  $E\gamma$ ,  $I\gamma$ .  ${}^{87}\text{Y}$ ,  ${}^{177}\text{Lu}$ ,  ${}^{193,195}\text{Hg}$ ,  ${}^{194}\text{Ir}$ ,  ${}^{196}\text{Au}$ ; deduced isomeric yield ratios depending on Ep. Activation Method. CONF Cheboksary, P142, Libanova
- ${}^{195}\text{Pb}$  2009DR03 NUCLEAR REACTIONS  ${}^{164}\text{Er}({}^{29}\text{Si}, 4n)$ ,  $E=20$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients.  ${}^{189}\text{Pb}$ ; deduced levels, J,  $\pi$ , multipolarity, configuration, shear band.  ${}^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302
- ${}^{195}\text{Po}$  2009GR05 NUCLEAR REACTIONS  ${}^{113}\text{Cd}({}^{86}\text{Kr}, 4n)$ ,  $E=382$  MeV; measured  $E\gamma$ ,  $I\gamma$ , (recoil) $\gamma$ -coin, lifetime using the recoil distance Doppler-shift method.  ${}^{195}\text{Po}$ ; deduced  $B(E2)$ . JUROGRAM array with RITU separator and GREAT spectrometer. Recoil-decay tagging technique. JOUR ZAANE 39 291
- ${}^{195}\text{At}$  2009AN11 NUCLEAR REACTIONS  ${}^{141}\text{Pr}({}^{56}\text{Fe}, xn){}^{193}\text{Po} / {}^{193m}\text{Po} / {}^{193}\text{At} / {}^{194}\text{At} / {}^{194m}\text{At} / {}^{195}\text{At}$ ,  $E=259$  MeV; measured  $E\alpha$ ,  $I\alpha$ , recoil- $\alpha$ - $\alpha$  and  $\alpha$ - $\gamma$  correlations. JOUR PRVCA 79 064320
- 2009AN11 RADIOACTIVITY  ${}^{194,194m}\text{At}(\alpha)$ ,  ${}^{190,190m}\text{Bi}(\alpha)$ [from  ${}^{141}\text{Pr}({}^{56}\text{Fe}, 3n)$ ,  $E=259$  MeV]; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $\alpha\gamma$ -coin, isomer half-lives, recoil- $\alpha$ - $\alpha$  correlations.  ${}^{190}\text{Bi}$ ,  ${}^{194}\text{At}$ ; deduced levels, J,  $\pi$ , multipolarity, hindrance factors, configurations.  ${}^{193}\text{Po}$ ,  ${}^{193,195}\text{At}(\alpha)$ ; measured  $E\alpha$ . JOUR PRVCA 79 064320

**A=196**

- ${}^{196}\text{Re}$  2008ST20 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{194}\text{Re} / {}^{195}\text{Re} / {}^{196}\text{Re} / {}^{196}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{205}\text{Au}$ ,  $E=1$  GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives,  $B(E2)$ ,  $B(E3)$ .  ${}^{204}\text{Pt}$ ; deduced levels, J,  $\pi$ . Comparisons with  ${}^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302
- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey

A=196 (*continued*)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{196}\text{Os}$  2008ST20 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{194}\text{Re}$  /  ${}^{195}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{196}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{205}\text{Au}$ , E=1 GeV / nucleon; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , half-lives, B(E2), B(E3).  ${}^{204}\text{Pt}$ ; deduced levels, J,  $\pi$ . Comparisons with  ${}^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ , E=1 GeV / nucleon; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes.  ${}^{186,188,190,192,194,196,198}\text{Os}$ ,  ${}^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305
- ${}^{196}\text{Pt}$  2009LI23 NUCLEAR REACTIONS  ${}^{152,154}\text{Sm}$ ,  ${}^{184}\text{W}$ ,  ${}^{196}\text{Pt}$ ,  ${}^{208}\text{Pb}({}^{16}\text{O}, {}^{16}\text{O})$ , E=36-80 MeV; measured particle spectra,  $\sigma$  as a function of beam energy; deduced diffuseness parameters using single-channel and coupled-channels calculations. JOUR PRVCA 79 064603
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ , E=1 GeV / nucleon; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes.  ${}^{186,188,190,192,194,196,198}\text{Os}$ ,  ${}^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305
- ${}^{196}\text{Au}$  2008NA26 NUCLEAR REACTIONS  ${}^{197}\text{Au}(\gamma, \text{n})$ , E=8.0-15.5 MeV; measured activation yields. Comparison with Hauser Feshbach calculations. JOUR PRVCA 78 055802
- 2008PE32 NUCLEAR REACTIONS  ${}^{206}\text{Pb}({}^6\text{He}, 2\text{n})$ ,  ${}^{208}\text{Pb}(\alpha, 2\text{n})$ , E=60.3 MeV;  ${}^{197}\text{Au}({}^6\text{He}, \text{X})$ ,  ${}^{198}\text{Pt}(\text{d}, \text{X})$ , E not given;  ${}^{196,198,199}\text{Au}$ ; measured reaction products; deduced excitation functions. JOUR IMPEE 17 2349
- 2008VI10 NUCLEAR REACTIONS  ${}^{118}\text{Sn}(\gamma, \text{p})$ ,  $\text{Sb}(\gamma, \alpha)$ ,  ${}^{117}\text{In}$ ,  ${}^{197}\text{Au}(\gamma, \text{n})$ , E=15, 22 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , isomeric ratios. JOUR BRSPE 72 1569
- 2008VI11 NUCLEAR REACTIONS  ${}^{191}\text{Ir}$ ,  ${}^{197}\text{Au}(\gamma, \text{n})$ , E=12.12.5 MeV;  ${}^{197}\text{Au}(\text{d}, \text{p})$ , E=4.5 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , Isomeric ratios. JOUR BRSPE 72 1577
- 2008VIZZ NUCLEAR REACTIONS  $\text{Au}(\text{d}, 2\text{n})$ ,  $(\text{n}, 2\text{n})$ ,  $(\text{d}, \text{p})$ ,  $\text{E}_\text{d}=4.5\text{-}7.5$  MeV,  $\text{E}_\text{n}=14.6$  MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\gamma\gamma$ -,  $\text{x}\gamma$ -coin;  ${}^{197}\text{Hg}$ ,  ${}^{196,198}\text{Au}$ ; deduced isomer yield ratios. CONF Moscow,P132,Vishnevsky

KEYNUMBERS AND KEYWORDS

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**A=196** (*continued*)

- 2009LIZZ      NUCLEAR REACTIONS Au, Nb, Ta(p, X), E=160, 247, 325 MeV; measured  $E\gamma$ ,  $I\gamma$ .  $^{87}\text{Y}$ ,  $^{177}\text{Lu}$ ,  $^{193,195}\text{Hg}$ ,  $^{194}\text{Ir}$ ,  $^{196}\text{Au}$ ; deduced isomeric yield ratios depending on Ep. Activation Method. CONF  
Cheboksary,P142,Libanova
- 2009SI28      NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{93}\text{Nb}(\alpha, n)$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}(\alpha, 2n)$ ,  $^{181}\text{Ta}(\alpha, 3n)$ ,  $^{197}\text{Au}(\alpha, 2pn)$ ,  $^{93}\text{Nb}(\alpha, 2p)$ ,  $^{197}\text{Au}$ ,  $^{93}\text{Nb}(\alpha, \alpha n)$ ,  $^{27}\text{Al}(\alpha, \alpha 2pn)$ , E=18-60 MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- 2009SK02      NUCLEAR REACTIONS Pt( $^6\text{Li}$ , X), E=22.5-42.5 MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- $^{196}\text{Tl}$       2009PE01      NUCLEAR REACTIONS  $^{209}\text{Bi}(\text{}^6\text{Li}, 3n)$ , ( $^6\text{Li}, 4n$ ), ( $^6\text{Li}, 5n$ ), ( $^6\text{Li}, 6n$ ),  $^{198,196,195}\text{Pt}(\text{}^6\text{Li}, 5n)$ ,  $^{198,196,195,194}\text{Pt}(\text{}^6\text{Li}, 4n)$ ,  $^{196,195,194}\text{Pt}(\text{}^6\text{Li}, 3n)$ ,  $^{198}\text{Pt}(\text{}^6\text{Li}, 2n)$ , E < 55 MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009SK02      NUCLEAR REACTIONS Pt( $^6\text{Li}$ , X), E=22.5-42.5 MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- $^{196}\text{Pb}$       2009LE18      NUCLEAR REACTIONS  $^{130}\text{Te}(\text{}^{27}\text{Al}, 6n)^{151}\text{Tb}$ , E=155 MeV;  $^{170}\text{Er}(\text{}^{30}\text{Si}, 4n)^{196}\text{Pb}$ , E=148 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma$  multiplicity, quasicontinuum  $\gamma$ -ray spectra; deduced Monte Carlo simulation of  $\gamma$  decay based on microscopically calculated levels, E2 decay probabilities, potential barriers between normal and superdeformed wells and collective mass parameters.  $^{151}\text{Tb}$ ,  $^{196}\text{Pb}$ ; deduced normal and superdeformed bands, and E1 strength functions. Comparison with cranked shell-model calculations. JOUR PRVCA 79 064306
- $^{196}\text{Po}$       2009GR08      NUCLEAR REACTIONS  $^{113}\text{Cd}(\text{}^{86}\text{Kr}, 3n)$ , E=382 MeV; measured  $E\gamma$ ,  $I\gamma$ , half-lives using the recoil distance Doppler-shift technique.  $^{196}\text{Po}$ ; deduced levels, J,  $\pi$ , B(E2), transition quadrupole moments and deformation parameters. Comparison with configuration mixing calculations of angular momentum projected mean-field states. JOUR PRVCA 80 014323

**A=197**

- $^{197}\text{Os}$       2008ST20      NUCLEAR REACTIONS  $^9\text{Be}(\text{}^{208}\text{Pb}, \text{X})^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ , E=1 GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives, B(E2), B(E3).  $^{204}\text{Pt}$ ; deduced levels, J,  $\pi$ . Comparisons with  $^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302

A=197 (*continued*)

- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{197}\text{Pt}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{197}\text{Au}$  2007SUZP NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^{32}\text{Mg}, {}^{32}\text{Mg}')$ , E=26 MeV / nucleon; measured  $I\gamma$ ,  $E\gamma$ ; deduced B(E2). Recoil distance method; GRAPE detector array. REPT RIKEN 2006 Annual,P6,Suzuki
- 2008KIZW RADIOACTIVITY  ${}^{197}\text{Hg}(\text{EC})$  [from  ${}^{197}\text{Au}(\text{d}, 2\text{n})$ , E=7 MeV]; measured  $E\gamma$ ,  $I\gamma$ , x-rays;  ${}^{197}\text{Au}$ ; deduced level energy. CONF Moscow,P86,Kirischuk
- 2009F007 NUCLEAR REACTIONS  ${}^{191,193}\text{Ir}$ ,  ${}^{197}\text{Au}(\text{n}, \text{n}'\gamma)$ , E<20 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ , half-lives of 11 / 2- isomers using GEANIE array.  ${}^{191\text{m},193\text{m}}\text{Ir}$ ,  ${}^{197\text{m}}\text{Au}$ ; deduced levels, J,  $\pi$ , multipolarities. Comparison of measured  $\sigma$  with predictions from FKK-GNASH reaction model. JOUR PRVCA 80 044612
- 2009IM01 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^{12}\text{Be}, {}^{12}\text{Be}')$ , E=42.9 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin.  ${}^{12}\text{Be}$  deduced levels,  $T_{1/2}$ , B(E2), deformation length. Doppler shift attenuation method. JOUR PYLBB 673 179



KEYNUMBERS AND KEYWORDS

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**A=197 (continued)**

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| 2009JI02          | NUCLEAR REACTIONS $^{197}\text{Au}(^{18}\text{Ne}, ^{18}\text{Ne}')$ , E not given; measured Ep, Ip. $^{18}\text{Ne}$ ; deduced level energies. Two proton decay. JOUR CPLEE 26 032301   |
| 2009LI29          | NUCLEAR REACTIONS $^{197}\text{Au}(^{29}\text{S}, ^{29}\text{S}')$ , E=49.2 MeV / nucleon; measured particle spectra by $\Delta\text{E}$ -tof, $(^{29}\text{S})(\text{p})(\text{p})$ -coin. $^{29}\text{S}$ ; deduced excitation spectrum, two proton and $^2\text{He}$ cluster decay branching ratios. JOUR PRVCA 80 014310   |
| $^{197}\text{Hg}$ | 2008KIZW RADIOACTIVITY $^{197}\text{Hg}(\text{EC})$ [from $^{197}\text{Au}(\text{d}, 2\text{n})$ , E=7 MeV]; measured $E_\gamma$ , $I_\gamma$ , x-rays; $^{197}\text{Au}$ ; deduced level energy. CONF Moscow,P86,Kirischuk  |
| 2008VIZZ          | NUCLEAR REACTIONS $\text{Au}(\text{d}, 2\text{n})$ , $(\text{n}, 2\text{n})$ , $(\text{d}, \text{p})$ , Ed=4.5-7.5 MeV, En=14.6 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -, x $\gamma$ -coin; $^{197}\text{Hg}$ , $^{196,198}\text{Au}$ ; deduced isomer yield ratios. CONF Moscow,P132,Vishnevsky   |
| $^{197}\text{Tl}$ | 2009ERZZ NUCLEAR REACTIONS $^{203,205}\text{Tl}(\gamma, \text{n})$ , $(\gamma, 2\text{n})$ , $(\gamma, 3\text{n})$ , $(\gamma, 4\text{n})$ , $(\gamma, 5\text{n})$ , $(\gamma, 6\text{n})$ , $^{205}\text{Tl}(\gamma, \text{np})$ , E < 67.7 MeV; measured $E_\gamma$ , $I_\gamma$ of residuals, $\sigma$ integrated. Activation technique. CONF Cheboksary,P135,Ermakov   |
| 2009PE01          | NUCLEAR REACTIONS $^{209}\text{Bi}(^6\text{Li}, 3\text{n})$ , $(^6\text{Li}, 4\text{n})$ , $(^6\text{Li}, 5\text{n})$ , $(^6\text{Li}, 6\text{n})$ , $^{198,196,195}\text{Pt}(^6\text{Li}, 5\text{n})$ , $^{198,196,195,194}\text{Pt}(^6\text{Li}, 4\text{n})$ , $^{196,195,194}\text{Pt}(^6\text{Li}, 3\text{n})$ , $^{198}\text{Pt}(^6\text{Li}, 2\text{n})$ , E < 55 MeV; measured $E_\alpha$ , $I_\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104  |
| 2009SK02          | NUCLEAR REACTIONS $\text{Pt}(^6\text{Li}, \text{X})$ , E=22.5-42.5 MeV; $^{196,197,198,199,200,201}\text{Tl}$ ; $^{194,196,198,199}\text{Au}$ ; Measured $E_\gamma$ , $I_\gamma$ , $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208   |
| $^{197}\text{Pb}$ | 2008HA39 NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| 2009DR03          | NUCLEAR REACTIONS $^{164}\text{Er}(^{29}\text{Si}, 4\text{n})$ , E=20 MeV; measured $E_\gamma$ , $I_\gamma$ , $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients. $^{189}\text{Pb}$ ; deduced levels, J, $\pi$ , multipolarity, configuration, shear band. $^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302  |

**A=198**

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| $^{198}\text{Os}$ | 2008ST20 NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})$ $^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ , E=1 GeV / nucleon; measured $E_\gamma$ , $I_\gamma$ , half-lives, B(E2), B(E3). $^{204}\text{Pt}$ ; deduced levels, J, $\pi$ . Comparisons with $^{206}\text{Hg}$ and shell model calculations. JOUR PRVCA 78 061302 |
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## A=198 (continued)

- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ , E=1 GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes.  ${}^{186,188,190,192,194,196,198}\text{Os}$ ,  ${}^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{198}\text{Ir}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- ${}^{198}\text{Pt}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ , E=1 GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma$ (t), half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes.  ${}^{186,188,190,192,194,196,198}\text{Os}$ ,  ${}^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305
- ${}^{198}\text{Au}$  2008PE32 NUCLEAR REACTIONS  ${}^{206}\text{Pb}({}^6\text{He}, 2n)$ ,  ${}^{208}\text{Pb}(\alpha, 2n)$ , E=60.3 MeV;  ${}^{197}\text{Au}({}^6\text{He}, \text{X})$ ,  ${}^{198}\text{Pt}(\text{d}, \text{X})$ , E not given;  ${}^{196,198,199}\text{Au}$ ; measured reaction products; deduced excitation functions. JOUR IMPEE 17 2349
- 2008VI11 NUCLEAR REACTIONS  ${}^{191}\text{Ir}$ ,  ${}^{197}\text{Au}(\gamma, n)$ , E=12.12.5 MeV;  ${}^{197}\text{Au}(\text{d}, \text{p})$ , E=4.5 MeV; measured  $E\gamma$ ,  $I\gamma$ , Isomeric ratios. JOUR BRSP 72 1577

A=198 (*continued*)

- 2008VIZZ NUCLEAR REACTIONS Au(d, 2n), (n, 2n), (d, p), Ed=4.5-7.5 MeV, En=14.6 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -,  $x\gamma$ -coin;  $^{197}\text{Hg}$ ,  $^{196,198}\text{Au}$ ; deduced isomer yield ratios. CONF Moscow,P132,Vishnevsky
- 2009DI04 NUCLEAR REACTIONS  $^{40}\text{Ca}(n, \gamma)$ ,  $E < 106$  keV; measured  $\sigma$ ,  $\sigma(E)$  using activation technique and accelerator mass spectrometry; deduced Maxwellian averaged cross sections. Neutrons from  $^7\text{Li}(p, n)^7\text{Be}$  reaction at  $E(p)=1912$  keV.  $^{197}\text{Au}(n, \gamma)$ ,  $E < 106$  keV; measured  $\sigma$  and used as a standard. Comparison with previous experimental data and theoretical predictions. JOUR PRVCA 79 065805
- 2009MA35 NUCLEAR REACTIONS  $^{74,76}\text{Ge}$ ,  $^{75}\text{As}(n, \gamma)$ ,  $E < 106$  keV; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ ; deduced Maxwellian averaged  $\sigma$  for thermal energies from 5 to 100 keV. Neutrons from  $^7\text{Li}(p, n)$ ,  $E=1912$  keV reaction.  $^{197}\text{Au}(n, \gamma)$ ,  $E < 106$  keV; measured  $\sigma$  and used as a standard. Estimated background contributions for  $\gamma$ -ray studies of double  $\beta$  decay of  $^{76}\text{Ge}$ . JOUR PRVCA 79 065802
- 2009SI28 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{93}\text{Nb}(\alpha, n)$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}(\alpha, 2n)$ ,  $^{181}\text{Ta}(\alpha, 3n)$ ,  $^{197}\text{Au}(\alpha, 2pn)$ ,  $^{93}\text{Nb}(\alpha, 2p)$ ,  $^{197}\text{Au}$ ,  $^{93}\text{Nb}(\alpha, \alpha n)$ ,  $^{27}\text{Al}(\alpha, \alpha 2pn)$ ,  $E=18-60$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- 2009SK02 NUCLEAR REACTIONS Pt( $^6\text{Li}$ , X),  $E=22.5-42.5$  MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(n, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(n, n')$ , Pb(p, xn) $^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$ , In(p, xn) $^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(p, 3n)$ ,  $^{63}\text{Cu}(p, 2n)$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(p, 4n)$ ,  $E=0.8$  GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- $^{198}\text{Hg}$  2009BE18 NUCLEAR REACTIONS  $^{196}\text{Pt}(\alpha, 2n)$ ,  $E=25$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ .  $^{198}\text{Hg}$ ; deduced levels, J,  $\pi$ , mixing ratios. Comparison with calculations using interacting boson fermion (IBFFA) model and interacting boson (IBA-2) model. JOUR PRVCA 79 054307
- $^{198}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  $^{203,205}\text{Tl}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  $^{205}\text{Tl}(\gamma, np)$ ,  $E < 67.7$  MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009PE01 NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, 3n)$ ,  $(^6\text{Li}, 4n)$ ,  $(^6\text{Li}, 5n)$ ,  $(^6\text{Li}, 6n)$ ,  $^{198,196,195}\text{Pt}(^6\text{Li}, 5n)$ ,  $^{198,196,195,194}\text{Pt}(^6\text{Li}, 4n)$ ,  $^{196,195,194}\text{Pt}(^6\text{Li}, 3n)$ ,  $^{198}\text{Pt}(^6\text{Li}, 2n)$ ,  $E < 55$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009SK02 NUCLEAR REACTIONS Pt( $^6\text{Li}$ , X),  $E=22.5-42.5$  MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208

KEYNUMBERS AND KEYWORDS

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**A=198 (continued)**

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| $^{198}\text{Pb}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{198}\text{Bi}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |

**A=199**

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| $^{199}\text{Os}$ | 2008ST20 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ , E=1 GeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives, B(E2), B(E3). $^{204}\text{Pt}$ ; deduced levels, J, $\pi$ . Comparisons with $^{206}\text{Hg}$ and shell model calculations. JOUR PRVCA 78 061302  |
|                   | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey  |
|                   | 2009ST16 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})^{189}\text{Ta}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{191}\text{W}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{193}\text{Os}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{197}\text{Os}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{198}\text{Os}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Os}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{196}\text{Re}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{200}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{201}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{202}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{203}\text{Ir}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{197}\text{Pt}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{199}\text{Pt}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{203}\text{Pt}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Pt}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{201}\text{Au}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{202}\text{Au}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Au}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{205}\text{Au}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{204}\text{Hg}; ^9\text{Be}(^{208}\text{Pb}, \text{X})^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed $I\gamma$ , $E\gamma$ , isomer decay. JOUR IMPEE 18 1002 |
| $^{199}\text{Ir}$ | 2008ST20 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ , E=1 GeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives, B(E2), B(E3). $^{204}\text{Pt}$ ; deduced levels, J, $\pi$ . Comparisons with $^{206}\text{Hg}$ and shell model calculations. JOUR PRVCA 78 061302  |
|                   | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey  |

## A=199 (continued)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{199}\text{Pt}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{199}\text{Au}$  2008PE32 NUCLEAR REACTIONS  ${}^{206}\text{Pb}({}^6\text{He}, 2\text{n})$ ,  ${}^{208}\text{Pb}(\alpha, 2\text{n})$ , E=60.3 MeV;  ${}^{197}\text{Au}({}^6\text{He}, \text{X})$ ,  ${}^{198}\text{Pt}(\text{d}, \text{X})$ , E not given;  ${}^{196,198,199}\text{Au}$ ; measured reaction products; deduced excitation functions. JOUR IMPEE 17 2349
- 2009PE19 NUCLEAR REACTIONS  ${}^{209}\text{Bi}({}^6\text{Li}, \text{xn}){}^{210}\text{Rn}$  /  ${}^{211}\text{Rn}$  /  ${}^{212}\text{Rn}$ ,  ${}^{209}\text{Bi}({}^6\text{Li}, \text{X}){}^{208}\text{Po}$  /  ${}^{210}\text{Po}$ ,  $\text{Pt}({}^6\text{Li}, \text{xn}){}^{200}\text{Tl}$ ,  ${}^{198}\text{Pt}({}^6\text{Li}, \text{X}){}^{199}\text{Au}$ ,  ${}^{197}\text{Au}({}^6\text{He}, \text{xn})$ ,  ${}^{206}\text{Pb}({}^6\text{He}, 2\text{n}){}^{210}\text{Po}$ , E=55 MeV; measured reaction products,  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617
- 2009SK02 NUCLEAR REACTIONS  $\text{Pt}({}^6\text{Li}, \text{X})$ , E=22.5-42.5 MeV;  ${}^{196,197,198,199,200,201}\text{Tl}$ ;  ${}^{194,196,198,199}\text{Au}$ ; Measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- ${}^{199}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, \text{n})$ ,  $(\gamma, 2\text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $(\gamma, 5\text{n})$ ,  $(\gamma, 6\text{n})$ ,  ${}^{205}\text{Tl}(\gamma, \text{np})$ , E < 67.7 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009LE29 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^8\text{He}, \text{xn})$ ,  $({}^6\text{He}, \text{xn})$ ,  $(\alpha, \text{xn}){}^{199}\text{Tl}$  /  ${}^{200}\text{Tl}$  /  ${}^{201}\text{Tl}$  /  ${}^{202}\text{Tl}$ , E=2.34, 2.51, 3.68 MeV / nucleon; measured x-rays,  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced  $\sigma$  for fusion, neutron transfer and evaporation residue. JOUR PRLTA 103 232701

KEYNUMBERS AND KEYWORDS

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**A=199 (continued)**

- 2009PE01 NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, 3n)$ ,  $(^6\text{Li}, 4n)$ ,  $(^6\text{Li}, 5n)$ ,  $(^6\text{Li}, 6n)$ ,  $^{198,196,195}\text{Pt}(^6\text{Li}, 5n)$ ,  $^{198,196,195,194}\text{Pt}(^6\text{Li}, 4n)$ ,  $^{196,195,194}\text{Pt}(^6\text{Li}, 3n)$ ,  $^{198}\text{Pt}(^6\text{Li}, 2n)$ ,  $E < 55$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009SH34 NUCLEAR REACTIONS  $^{198}\text{Pt}(^6\text{Li}, xn)^{199}\text{Tl} / ^{200}\text{Tl} / ^{201}\text{Tl} / ^{202}\text{Tl}$ ,  $E(\text{cm}) < 35$  MeV; measured x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced fusion and evaporation residue excitation functions, average angular momentum and logarithmic derivatives of the fusion  $\sigma$ , internuclear potentials. JOUR PRLTA 103 232702
- 2009SI28 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{93}\text{Nb}(\alpha, n)$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}(\alpha, 2n)$ ,  $^{181}\text{Ta}(\alpha, 3n)$ ,  $^{197}\text{Au}(\alpha, 2pn)$ ,  $^{93}\text{Nb}(\alpha, 2p)$ ,  $^{197}\text{Au}$ ,  $^{93}\text{Nb}(\alpha, \alpha n)$ ,  $^{27}\text{Al}(\alpha, \alpha 2pn)$ ,  $E=18-60$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- 2009SK02 NUCLEAR REACTIONS  $\text{Pt}(^6\text{Li}, X)$ ,  $E=22.5-42.5$  MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- $^{199}\text{Pb}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, X)$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(M1)$ ,  $B(E2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009DR03 NUCLEAR REACTIONS  $^{164}\text{Er}(^{29}\text{Si}, 4n)$ ,  $E=20$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, conversion electrons, internal conversion coefficients.  $^{189}\text{Pb}$ ; deduced levels,  $J$ ,  $\pi$ , multipolarity, configuration, shear band.  $^{189,191,193,195,197,199}\text{Pb}$ ; systematics of shears bands, and total residual interaction as a function of occupation probability. Comparisons with empirical shell-model calculations. JOUR PRVCA 79 031302
- $^{199}\text{Bi}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, X)$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(M1)$ ,  $B(E2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=200**

- $^{200}\text{Ir}$  2008ST20 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, X)^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ ,  $E=1$  GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives,  $B(E2)$ ,  $B(E3)$ .  $^{204}\text{Pt}$ ; deduced levels,  $J$ ,  $\pi$ . Comparisons with  $^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302

## A=200 (continued)

- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ ,  $E=1$  GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{200}\text{Pt}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ ,  $E=1$  GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma(t)$ , half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes. <sup>186,188,190,192,194,196,198</sup>Os, <sup>188,190,192,194,196,198,200,202</sup>Pt; level systematics. JOUR PRVCA 79 031305
- ${}^{200}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  ${}^{205}\text{Tl}(\gamma, np)$ ,  $E < 67.7$  MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009LE29 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^8\text{He}, xn)$ ,  $({}^6\text{He}, xn)$ ,  $(\alpha, xn)$   ${}^{199}\text{Tl} / {}^{200}\text{Tl} / {}^{201}\text{Tl} / {}^{202}\text{Tl}$ ,  $E=2.34, 2.51, 3.68$  MeV / nucleon; measured x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  for fusion, neutron transfer and evaporation residue. JOUR PRLTA 103 232701
- 2009PE01 NUCLEAR REACTIONS  ${}^{209}\text{Bi}({}^6\text{Li}, 3n)$ ,  $({}^6\text{Li}, 4n)$ ,  $({}^6\text{Li}, 5n)$ ,  $({}^6\text{Li}, 6n)$ ,  ${}^{198,196,195}\text{Pt}({}^6\text{Li}, 5n)$ ,  ${}^{198,196,195,194}\text{Pt}({}^6\text{Li}, 4n)$ ,  ${}^{196,195,194}\text{Pt}({}^6\text{Li}, 3n)$ ,  ${}^{198}\text{Pt}({}^6\text{Li}, 2n)$ ,  $E < 55$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009PE19 NUCLEAR REACTIONS  ${}^{209}\text{Bi}({}^6\text{Li}, xn)$   ${}^{210}\text{Rn} / {}^{211}\text{Rn} / {}^{212}\text{Rn}$ ,  ${}^{209}\text{Bi}({}^6\text{Li}, \text{X}){}^{208}\text{Po} / {}^{210}\text{Po}$ ,  $\text{Pt}({}^6\text{Li}, xn)$   ${}^{200}\text{Tl}$ ,  ${}^{198}\text{Pt}({}^6\text{Li}, \text{X}){}^{199}\text{Au}$ ,  ${}^{197}\text{Au}({}^6\text{He}, xn)$ ,  ${}^{206}\text{Pb}({}^6\text{He}, 2n)$   ${}^{210}\text{Po}$ ,  $E=55$  MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617

KEYNUMBERS AND KEYWORDS

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**A=200 (continued)**

- 2009SH34 NUCLEAR REACTIONS  $^{198}\text{Pt}(^6\text{Li}, \text{xn})^{199}\text{Tl} / ^{200}\text{Tl} / ^{201}\text{Tl} / ^{202}\text{Tl}$ ,  $E(\text{cm}) < 35$  MeV; measured x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced fusion and evaporation residue excitation functions, average angular momentum and logarithmic derivatives of the fusion  $\sigma$ , internuclear potentials. JOUR PRLTA 103 232702
- 2009SI28 NUCLEAR REACTIONS  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{93}\text{Nb}(\alpha, \text{n})$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}(\alpha, 2\text{n})$ ,  $^{181}\text{Ta}(\alpha, 3\text{n})$ ,  $^{197}\text{Au}(\alpha, 2\text{pn})$ ,  $^{93}\text{Nb}(\alpha, 2\text{p})$ ,  $^{197}\text{Au}$ ,  $^{93}\text{Nb}(\alpha, \alpha\text{n})$ ,  $^{27}\text{Al}(\alpha, \alpha 2\text{pn})$ ,  $E=18-60$  MeV; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . Comparison with STAPRE, ALICE-91 and COMPLET codes. JOUR CJPFA 87 1037
- 2009SK02 NUCLEAR REACTIONS  $\text{Pt}(^6\text{Li}, \text{X})$ ,  $E=22.5-42.5$  MeV;  $^{196,197,198,199,200,201}\text{Tl}$ ;  $^{194,196,198,199}\text{Au}$ ; Measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208
- $^{200}\text{Pb}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(\text{M}1)$ ,  $B(\text{E}2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- $^{200}\text{Bi}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(\text{M}1)$ ,  $B(\text{E}2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=201**

- $^{201}\text{Ir}$  2008ST20 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{194}\text{Re} / ^{195}\text{Re} / ^{196}\text{Re} / ^{196}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{205}\text{Au}$ ,  $E=1$  GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives,  $B(\text{E}2)$ ,  $B(\text{E}3)$ .  $^{204}\text{Pt}$ ; deduced levels,  $J$ ,  $\pi$ . Comparisons with  $^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302
- 2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, \text{X})^{195}\text{Ir} / ^{198}\text{Ir} / ^{199}\text{Ir} / ^{200}\text{Ir} / ^{201}\text{Ir} / ^{202}\text{Ir} / ^{203}\text{Ir} / ^{197}\text{Pt} / ^{198}\text{Pt} / ^{199}\text{Pt} / ^{200}\text{Pt} / ^{201}\text{Pt} / ^{202}\text{Pt} / ^{203}\text{Pt} / ^{204}\text{Pt} / ^{201}\text{Au} / ^{202}\text{Au} / ^{203}\text{Au} / ^{204}\text{Au} / ^{205}\text{Au} / ^{193}\text{Os} / ^{195}\text{Os} / ^{197}\text{Os} / ^{198}\text{Os} / ^{199}\text{Os} / ^{190}\text{W} / ^{191}\text{W} / ^{203}\text{Hg} / ^{204}\text{Hg} / ^{205}\text{Hg} / ^{206}\text{Hg} / ^{191}\text{Re} / ^{192}\text{Re} / ^{193}\text{Re} / ^{194}\text{Re} / ^{196}\text{Re} / ^{188}\text{Ta} / ^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels,  $J$ ,  $\pi$ . THESIS S J Steer, University of Surrey



## A=201 (continued)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{201}\text{Pt}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- ${}^{201}\text{Au}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{201}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, \text{n})$ ,  $(\gamma, 2\text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $(\gamma, 5\text{n})$ ,  $(\gamma, 6\text{n})$ ,  ${}^{205}\text{Tl}(\gamma, \text{np})$ , E < 67.7 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009LE05 NUCLEAR REACTIONS  ${}^{198}\text{Pt}({}^6\text{Li}, \text{X}){}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E=20-45 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ , X-ray spectra, (X-ray) $\gamma$ -coin, evaporation residue cross sections. JOUR NIMAE 598 445
- 2009LE29 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^8\text{He}, \text{xn})$ ,  $({}^6\text{He}, \text{xn})$ ,  $(\alpha, \text{xn}){}^{199}\text{Tl} / {}^{200}\text{Tl} / {}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E=2.34, 2.51, 3.68 MeV / nucleon; measured x-rays,  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced  $\sigma$  for fusion, neutron transfer and evaporation residue. JOUR PRLTA 103 232701
- 2009SH34 NUCLEAR REACTIONS  ${}^{198}\text{Pt}({}^6\text{Li}, \text{xn}){}^{199}\text{Tl} / {}^{200}\text{Tl} / {}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E(cm)<35 MeV; measured x-rays,  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced fusion and evaporation residue excitation functions, average angular momentum and logarithmic derivatives of the fusion  $\sigma$ , internuclear potentials. JOUR PRLTA 103 232702

KEYNUMBERS AND KEYWORDS

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**A=201 (continued)**

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|-------------------|----------|--|
| 2009SK02          |          | NUCLEAR REACTIONS Pt( <sup>6</sup> Li, X), E=22.5-42.5 MeV; 196,197,198,199,200,201Tl; 194,196,198,199Au; Measured E $\gamma$ , I $\gamma$ , $\sigma$ . Compared results to model calculations using ALICE-MP, EMPIRE-II codes. JOUR PPNLA 6 208   |
| <sup>201</sup> Pb | 2008HA39 | NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>30</sup> Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>204</sup> At, <sup>205,206,207</sup> Fr; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup> Rn, 198,199,200,201,202Bi, 197,198,199,200,201Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| <sup>201</sup> Bi | 2008HA39 | NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>30</sup> Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>204</sup> At, <sup>205,206,207</sup> Fr; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup> Rn, 198,199,200,201,202Bi, 197,198,199,200,201Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |

**A=202**

- |                   |          |   |
|-------------------|----------|---|
| <sup>202</sup> Ir | 2008ST20 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>194</sup> Re / <sup>195</sup> Re / <sup>196</sup> Re / <sup>196</sup> Os / <sup>197</sup> Os / <sup>198</sup> Os / <sup>199</sup> Os / <sup>199</sup> Ir / <sup>200</sup> Ir / <sup>201</sup> Ir / <sup>202</sup> Ir / <sup>202</sup> Pt / <sup>203</sup> Pt / <sup>204</sup> Pt / <sup>205</sup> Au, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives, B(E2), B(E3). <sup>204</sup> Pt; deduced levels, J, $\pi$ . Comparisons with <sup>206</sup> Hg and shell model calculations. JOUR PRVCA 78 061302   |
|                   | 2008STZY | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>195</sup> Ir / <sup>198</sup> Ir / <sup>199</sup> Ir / <sup>200</sup> Ir / <sup>201</sup> Ir / <sup>202</sup> Ir / <sup>203</sup> Ir / <sup>197</sup> Pt / <sup>198</sup> Pt / <sup>199</sup> Pt / <sup>200</sup> Pt / <sup>201</sup> Pt / <sup>202</sup> Pt / <sup>203</sup> Pt / <sup>204</sup> Pt / <sup>201</sup> Au / <sup>202</sup> Au / <sup>203</sup> Au / <sup>204</sup> Au / <sup>205</sup> Au / <sup>193</sup> Os / <sup>195</sup> Os / <sup>197</sup> Os / <sup>198</sup> Os / <sup>199</sup> Os / <sup>190</sup> W / <sup>191</sup> W / <sup>203</sup> Hg / <sup>204</sup> Hg / <sup>205</sup> Hg / <sup>206</sup> Hg / <sup>191</sup> Re / <sup>192</sup> Re / <sup>193</sup> Re / <sup>194</sup> Re / <sup>196</sup> Re / <sup>188</sup> Ta / <sup>189</sup> Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J, $\pi$ . THESIS S J Steer, University of Surrey  |
|                   | 2009ST16 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>189</sup> Ta; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>191</sup> W; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>193</sup> Os; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>197</sup> Os; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>198</sup> Os; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>199</sup> Os; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>196</sup> Re; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>195</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>199</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>200</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>201</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>202</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>203</sup> Ir; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>197</sup> Pt; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>199</sup> Pt; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>203</sup> Pt; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>204</sup> Pt; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>201</sup> Au; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>202</sup> Au; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>204</sup> Au; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>205</sup> Au; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>204</sup> Hg; <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>205</sup> Hg, E=1 GeV / nucleon; measured delayed I $\gamma$ , E $\gamma$ , isomer decay. JOUR IMPEE 18 1002 |
| <sup>202</sup> Pt | 2008ST20 | NUCLEAR REACTIONS <sup>9</sup> Be( <sup>208</sup> Pb, X) <sup>194</sup> Re / <sup>195</sup> Re / <sup>196</sup> Re / <sup>196</sup> Os / <sup>197</sup> Os / <sup>198</sup> Os / <sup>199</sup> Os / <sup>199</sup> Ir / <sup>200</sup> Ir / <sup>201</sup> Ir / <sup>202</sup> Ir / <sup>202</sup> Pt / <sup>203</sup> Pt / <sup>204</sup> Pt / <sup>205</sup> Au, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives, B(E2), B(E3). <sup>204</sup> Pt; deduced levels, J, $\pi$ . Comparisons with <sup>206</sup> Hg and shell model calculations. JOUR PRVCA 78 061302   |

## A=202 (continued)

- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009P002 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$ , E=1 GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -, (particle) $\gamma$ -coin,  $\gamma\gamma(t)$ , half-lives.  ${}^{198}\text{Os}$ ; deduced levels, J,  $\pi$ , configuration.  ${}^{198}\text{Os}$ ; calculated potential-energy surfaces using Woods-Saxon-Strutinsky formalism. Comparison of  ${}^{198}\text{Os}$  and  ${}^{202}\text{Pt}$  level schemes.  ${}^{186,188,190,192,194,196,198}\text{Os}$ ,  ${}^{188,190,192,194,196,198,200,202}\text{Pt}$ ; level systematics. JOUR PRVCA 79 031305
- ${}^{202}\text{Au}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X})$   ${}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{202}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  ${}^{205}\text{Tl}(\gamma, np)$ , E < 67.7 MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009LE05 NUCLEAR REACTIONS  ${}^{198}\text{Pt}({}^6\text{Li}, \text{X})$   ${}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E=20-45 MeV; measured  $E\gamma$ ,  $I\gamma$ , X-ray spectra, (X-ray) $\gamma$ -coin, evaporation residue cross sections. JOUR NIMAE 598 445
- 2009LE29 NUCLEAR REACTIONS  ${}^{197}\text{Au}({}^8\text{He}, xn)$ ,  $({}^6\text{He}, xn)$ ,  $(\alpha, xn)$   ${}^{199}\text{Tl} / {}^{200}\text{Tl} / {}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E=2.34, 2.51, 3.68 MeV / nucleon; measured x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$  for fusion, neutron transfer and evaporation residue. JOUR PRLTA 103 232701
- 2009PE01 NUCLEAR REACTIONS  ${}^{209}\text{Bi}({}^6\text{Li}, 3n)$ ,  $({}^6\text{Li}, 4n)$ ,  $({}^6\text{Li}, 5n)$ ,  $({}^6\text{Li}, 6n)$ ,  ${}^{198,196,195}\text{Pt}({}^6\text{Li}, 5n)$ ,  ${}^{198,196,195,194}\text{Pt}({}^6\text{Li}, 4n)$ ,  ${}^{196,195,194}\text{Pt}({}^6\text{Li}, 3n)$ ,  ${}^{198}\text{Pt}({}^6\text{Li}, 2n)$ , E < 55 MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009SH34 NUCLEAR REACTIONS  ${}^{198}\text{Pt}({}^6\text{Li}, xn)$   ${}^{199}\text{Tl} / {}^{200}\text{Tl} / {}^{201}\text{Tl} / {}^{202}\text{Tl}$ , E(cm)<35 MeV; measured x-rays,  $E\gamma$ ,  $I\gamma$ ; deduced fusion and evaporation residue excitation functions, average angular momentum and logarithmic derivatives of the fusion  $\sigma$ , internuclear potentials. JOUR PRLTA 103 232702

KEYNUMBERS AND KEYWORDS

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**A=202 (continued)**

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| $^{202}\text{Pb}$ | 2009SE10 | NUCLEAR REACTIONS $^{204}\text{Pb}(n, n'\gamma)$ , $(n, 2n)$ , $(n, 3n)^{202m}\text{Pb}$ / $^{203}\text{Pb}$ / $^{203m}\text{Pb}$ / $^{204m}\text{Pb}$ , $E=14-21$ MeV; $^{206}\text{Pb}(n, 3n)$ , $(n, \alpha)^{203}\text{Hg}$ / $^{204m}\text{Pb}$ , $E=14-21$ MeV; $^{208}\text{Pb}(n, p)^{208}\text{Tl}$ , $E=14-21$ MeV; measured $E\gamma$ , $I\gamma$ and $\sigma$ . Comparison with TALYS and STAPRE model calculations. JOUR PRVCA 80 024610   |
| $^{202}\text{Bi}$ | 2008ERZY | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, 2n)$ , $(\gamma, 3n)$ , $(\gamma, 4n)$ , $(\gamma, 5n)$ , $(\gamma, 6n)$ , $(\gamma, 7n)$ , $E<67.7$ MeV; measured $E\gamma$ , $I\gamma$ of residuals; deduced $\sigma$ integrated yields. Activation technique. CONF Moscow, P125, Ermakov  |
|                   | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, X)$ , $E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, $J$ , $\pi$ , $B(M1)$ , $B(E2)$ , magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{202}\text{Rn}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, X)$ , $E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, $J$ , $\pi$ , $B(M1)$ , $B(E2)$ , magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |

**A=203**

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| $^{203}\text{Ir}$ | 2008STZY | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$ / $^{198}\text{Ir}$ / $^{199}\text{Ir}$ / $^{200}\text{Ir}$ / $^{201}\text{Ir}$ / $^{202}\text{Ir}$ / $^{203}\text{Ir}$ / $^{197}\text{Pt}$ / $^{198}\text{Pt}$ / $^{199}\text{Pt}$ / $^{200}\text{Pt}$ / $^{201}\text{Pt}$ / $^{202}\text{Pt}$ / $^{203}\text{Pt}$ / $^{204}\text{Pt}$ / $^{201}\text{Au}$ / $^{202}\text{Au}$ / $^{203}\text{Au}$ / $^{204}\text{Au}$ / $^{205}\text{Au}$ / $^{193}\text{Os}$ / $^{195}\text{Os}$ / $^{197}\text{Os}$ / $^{198}\text{Os}$ / $^{199}\text{Os}$ / $^{190}\text{W}$ / $^{191}\text{W}$ / $^{203}\text{Hg}$ / $^{204}\text{Hg}$ / $^{205}\text{Hg}$ / $^{206}\text{Hg}$ / $^{191}\text{Re}$ / $^{192}\text{Re}$ / $^{193}\text{Re}$ / $^{194}\text{Re}$ / $^{196}\text{Re}$ / $^{188}\text{Ta}$ / $^{189}\text{Ta}$ ; measured $E\gamma$ , $I\gamma$ ; Deduced levels, $J$ , $\pi$ . THESIS S J Steer, University of Surrey   |
|                   | 2009ST16 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{189}\text{Ta}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{191}\text{W}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{193}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{198}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Os}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{196}\text{Re}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{200}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Ir}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Pt}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Au}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Hg}$ ; $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Hg}$ , $E=1$ GeV / nucleon; measured delayed $I\gamma$ , $E\gamma$ , isomer decay. JOUR IMPEE 18 1002 |
| $^{203}\text{Pt}$ | 2008ST20 | NUCLEAR REACTIONS $^9\text{Be}(^{208}\text{Pb}, X)^{194}\text{Re}$ / $^{195}\text{Re}$ / $^{196}\text{Re}$ / $^{196}\text{Os}$ / $^{197}\text{Os}$ / $^{198}\text{Os}$ / $^{199}\text{Os}$ / $^{199}\text{Ir}$ / $^{200}\text{Ir}$ / $^{201}\text{Ir}$ / $^{202}\text{Ir}$ / $^{202}\text{Pt}$ / $^{203}\text{Pt}$ / $^{204}\text{Pt}$ / $^{205}\text{Au}$ , $E=1$ GeV / nucleon; measured $E\gamma$ , $I\gamma$ , half-lives, $B(E2)$ , $B(E3)$ . $^{204}\text{Pt}$ ; deduced levels, $J$ , $\pi$ . Comparisons with $^{206}\text{Hg}$ and shell model calculations. JOUR PRVCA 78 061302   |

## A=203 (continued)

- 2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ ,  $E=1$  GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{203}\text{Au}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- ${}^{203}\text{Hg}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir} / {}^{198}\text{Ir} / {}^{199}\text{Ir} / {}^{200}\text{Ir} / {}^{201}\text{Ir} / {}^{202}\text{Ir} / {}^{203}\text{Ir} / {}^{197}\text{Pt} / {}^{198}\text{Pt} / {}^{199}\text{Pt} / {}^{200}\text{Pt} / {}^{201}\text{Pt} / {}^{202}\text{Pt} / {}^{203}\text{Pt} / {}^{204}\text{Pt} / {}^{201}\text{Au} / {}^{202}\text{Au} / {}^{203}\text{Au} / {}^{204}\text{Au} / {}^{205}\text{Au} / {}^{193}\text{Os} / {}^{195}\text{Os} / {}^{197}\text{Os} / {}^{198}\text{Os} / {}^{199}\text{Os} / {}^{190}\text{W} / {}^{191}\text{W} / {}^{203}\text{Hg} / {}^{204}\text{Hg} / {}^{205}\text{Hg} / {}^{206}\text{Hg} / {}^{191}\text{Re} / {}^{192}\text{Re} / {}^{193}\text{Re} / {}^{194}\text{Re} / {}^{196}\text{Re} / {}^{188}\text{Ta} / {}^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  ${}^{205}\text{Tl}(\gamma, np)$ ,  $E < 67.7$  MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- 2009SE10 NUCLEAR REACTIONS  ${}^{204}\text{Pb}(n, n'\gamma)$ ,  $(n, 2n)$ ,  $(n, 3n)$   ${}^{202m}\text{Pb} / {}^{203}\text{Pb} / {}^{203m}\text{Pb} / {}^{204m}\text{Pb}$ ,  $E=14-21$  MeV;  ${}^{206}\text{Pb}(n, 3n)$ ,  $(n, \alpha)$   ${}^{203}\text{Hg} / {}^{204m}\text{Pb}$ ,  $E=14-21$  MeV;  ${}^{208}\text{Pb}(n, p)$   ${}^{208}\text{Tl}$ ,  $E=14-21$  MeV; measured  $E\gamma$ ,  $I\gamma$  and  $\sigma$ . Comparison with TALYS and STAPRE model calculations. JOUR PRVCA 80 024610
- ${}^{203}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, n)$ ,  $(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  ${}^{205}\text{Tl}(\gamma, np)$ ,  $E < 67.7$  MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- ${}^{203}\text{Pb}$  2009SE10 NUCLEAR REACTIONS  ${}^{204}\text{Pb}(n, n'\gamma)$ ,  $(n, 2n)$ ,  $(n, 3n)$   ${}^{202m}\text{Pb} / {}^{203}\text{Pb} / {}^{203m}\text{Pb} / {}^{204m}\text{Pb}$ ,  $E=14-21$  MeV;  ${}^{206}\text{Pb}(n, 3n)$ ,  $(n, \alpha)$   ${}^{203}\text{Hg} / {}^{204m}\text{Pb}$ ,  $E=14-21$  MeV;  ${}^{208}\text{Pb}(n, p)$   ${}^{208}\text{Tl}$ ,  $E=14-21$  MeV; measured  $E\gamma$ ,  $I\gamma$  and  $\sigma$ . Comparison with TALYS and STAPRE model calculations. JOUR PRVCA 80 024610
- ${}^{203}\text{Bi}$  2008ERZY NUCLEAR REACTIONS  ${}^{209}\text{Bi}(\gamma, 2n)$ ,  $(\gamma, 3n)$ ,  $(\gamma, 4n)$ ,  $(\gamma, 5n)$ ,  $(\gamma, 6n)$ ,  $(\gamma, 7n)$ ,  $E < 67.7$  MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals; deduced  $\sigma$  integrated yields. Activation technique. CONF Moscow,P125,Ermakov

**A=203 (continued)**

- 2009TI09 NUCLEAR REACTIONS  $^{59}\text{Co}$ ,  $^{197}\text{Au}$ ,  $^{181}\text{Ta}$ ,  $^{64}\text{Zn}(n, \gamma)$ ,  $^{59}\text{Co}$ ,  $^{27}\text{Al}$ ,  $^{181}\text{Ta}$ ,  $^{115}\text{In}$ ,  $^{64}\text{Zn}$ ,  $^{65}\text{Cu}$ ,  $^{115}\text{In}(n, n')$ ,  $\text{Pb}(p, xn)^{203}\text{Bi}$  /  $^{204}\text{Bi}$  /  $^{205}\text{Bi}$  /  $^{206}\text{Bi}$ ,  $\text{In}(p, xn)^{113}\text{Sn}$ ,  $^{59}\text{Co}$ ,  $^{209}\text{Bi}(p, 3n)$ ,  $^{63}\text{Cu}(p, 2n)$ ,  $^{209}\text{Bi}$ ,  $^{169}\text{Tm}$ ,  $^{93}\text{Nb}$ ,  $^{65}\text{Cu}(p, 4n)$ ,  $E=0.8$  GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48

**A=204**

- $^{204}\text{Pt}$  2008ST20 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, X)^{194}\text{Re}$  /  $^{195}\text{Re}$  /  $^{196}\text{Re}$  /  $^{196}\text{Os}$  /  $^{197}\text{Os}$  /  $^{198}\text{Os}$  /  $^{199}\text{Os}$  /  $^{199}\text{Ir}$  /  $^{200}\text{Ir}$  /  $^{201}\text{Ir}$  /  $^{202}\text{Ir}$  /  $^{202}\text{Pt}$  /  $^{203}\text{Pt}$  /  $^{204}\text{Pt}$  /  $^{205}\text{Au}$ ,  $E=1$  GeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , half-lives,  $B(E2)$ ,  $B(E3)$ .  $^{204}\text{Pt}$ ; deduced levels,  $J$ ,  $\pi$ . Comparisons with  $^{206}\text{Hg}$  and shell model calculations. JOUR PRVCA 78 061302
- 2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$  /  $^{198}\text{Ir}$  /  $^{199}\text{Ir}$  /  $^{200}\text{Ir}$  /  $^{201}\text{Ir}$  /  $^{202}\text{Ir}$  /  $^{203}\text{Ir}$  /  $^{197}\text{Pt}$  /  $^{198}\text{Pt}$  /  $^{199}\text{Pt}$  /  $^{200}\text{Pt}$  /  $^{201}\text{Pt}$  /  $^{202}\text{Pt}$  /  $^{203}\text{Pt}$  /  $^{204}\text{Pt}$  /  $^{201}\text{Au}$  /  $^{202}\text{Au}$  /  $^{203}\text{Au}$  /  $^{204}\text{Au}$  /  $^{205}\text{Au}$  /  $^{193}\text{Os}$  /  $^{195}\text{Os}$  /  $^{197}\text{Os}$  /  $^{198}\text{Os}$  /  $^{199}\text{Os}$  /  $^{190}\text{W}$  /  $^{191}\text{W}$  /  $^{203}\text{Hg}$  /  $^{204}\text{Hg}$  /  $^{205}\text{Hg}$  /  $^{206}\text{Hg}$  /  $^{191}\text{Re}$  /  $^{192}\text{Re}$  /  $^{193}\text{Re}$  /  $^{194}\text{Re}$  /  $^{196}\text{Re}$  /  $^{188}\text{Ta}$  /  $^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels,  $J$ ,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009M017 RADIOACTIVITY  $^{204}\text{Pt}(\beta^-)$ ; measured delayed  $\beta\gamma$ -coin.,  $E\gamma$ ,  $I\gamma$ . deduced  $T_{1/2}$ . JOUR APOBB 40 867
- 2009ST16 NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, X)^{189}\text{Ta}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{191}\text{W}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{193}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{198}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Os}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{196}\text{Re}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{200}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Ir}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{197}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{199}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{203}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Pt}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{201}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{202}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Au}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{204}\text{Hg}$ ;  $^9\text{Be}(^{208}\text{Pb}, X)^{205}\text{Hg}$ ,  $E=1$  GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- $^{204}\text{Au}$  2008STZY NUCLEAR REACTIONS  $^9\text{Be}(^{208}\text{Pb}, X)^{195}\text{Ir}$  /  $^{198}\text{Ir}$  /  $^{199}\text{Ir}$  /  $^{200}\text{Ir}$  /  $^{201}\text{Ir}$  /  $^{202}\text{Ir}$  /  $^{203}\text{Ir}$  /  $^{197}\text{Pt}$  /  $^{198}\text{Pt}$  /  $^{199}\text{Pt}$  /  $^{200}\text{Pt}$  /  $^{201}\text{Pt}$  /  $^{202}\text{Pt}$  /  $^{203}\text{Pt}$  /  $^{204}\text{Pt}$  /  $^{201}\text{Au}$  /  $^{202}\text{Au}$  /  $^{203}\text{Au}$  /  $^{204}\text{Au}$  /  $^{205}\text{Au}$  /  $^{193}\text{Os}$  /  $^{195}\text{Os}$  /  $^{197}\text{Os}$  /  $^{198}\text{Os}$  /  $^{199}\text{Os}$  /  $^{190}\text{W}$  /  $^{191}\text{W}$  /  $^{203}\text{Hg}$  /  $^{204}\text{Hg}$  /  $^{205}\text{Hg}$  /  $^{206}\text{Hg}$  /  $^{191}\text{Re}$  /  $^{192}\text{Re}$  /  $^{193}\text{Re}$  /  $^{194}\text{Re}$  /  $^{196}\text{Re}$  /  $^{188}\text{Ta}$  /  $^{189}\text{Ta}$ ; measured  $E\gamma$ ,  $I\gamma$ ; Deduced levels,  $J$ ,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009M017 RADIOACTIVITY  $^{204}\text{Pt}(\beta^-)$ ; measured delayed  $\beta\gamma$ -coin.,  $E\gamma$ ,  $I\gamma$ . deduced  $T_{1/2}$ . JOUR APOBB 40 867

## A=204 (continued)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{204}\text{Hg}$  2008STZY NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$  /  ${}^{198}\text{Ir}$  /  ${}^{199}\text{Ir}$  /  ${}^{200}\text{Ir}$  /  ${}^{201}\text{Ir}$  /  ${}^{202}\text{Ir}$  /  ${}^{203}\text{Ir}$  /  ${}^{197}\text{Pt}$  /  ${}^{198}\text{Pt}$  /  ${}^{199}\text{Pt}$  /  ${}^{200}\text{Pt}$  /  ${}^{201}\text{Pt}$  /  ${}^{202}\text{Pt}$  /  ${}^{203}\text{Pt}$  /  ${}^{204}\text{Pt}$  /  ${}^{201}\text{Au}$  /  ${}^{202}\text{Au}$  /  ${}^{203}\text{Au}$  /  ${}^{204}\text{Au}$  /  ${}^{205}\text{Au}$  /  ${}^{193}\text{Os}$  /  ${}^{195}\text{Os}$  /  ${}^{197}\text{Os}$  /  ${}^{198}\text{Os}$  /  ${}^{199}\text{Os}$  /  ${}^{190}\text{W}$  /  ${}^{191}\text{W}$  /  ${}^{203}\text{Hg}$  /  ${}^{204}\text{Hg}$  /  ${}^{205}\text{Hg}$  /  ${}^{206}\text{Hg}$  /  ${}^{191}\text{Re}$  /  ${}^{192}\text{Re}$  /  ${}^{193}\text{Re}$  /  ${}^{194}\text{Re}$  /  ${}^{196}\text{Re}$  /  ${}^{188}\text{Ta}$  /  ${}^{189}\text{Ta}$ ; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $\text{I}\gamma$ ,  $\text{E}\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{204}\text{Tl}$  2009ERZZ NUCLEAR REACTIONS  ${}^{203,205}\text{Tl}(\gamma, \text{n})$ ,  $(\gamma, 2\text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $(\gamma, 5\text{n})$ ,  $(\gamma, 6\text{n})$ ,  ${}^{205}\text{Tl}(\gamma, \text{np})$ , E < 67.7 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  of residuals,  $\sigma$  integrated. Activation technique. CONF Cheboksary,P135,Ermakov
- ${}^{204}\text{Pb}$  2009DR05 RADIOACTIVITY  ${}^{268}\text{Db}$ ,  ${}^{268}\text{Rf}(\alpha)$ , (SF); measured  $\text{E}\alpha$ ,  $\text{I}\alpha$  and SF events.  ${}^{212}\text{Bi}$ ,  ${}^{208,210,212,216}\text{Po}$ ,  ${}^{220}\text{Rn}$ ,  ${}^{224}\text{Ra}$ ,  ${}^{228,230}\text{Th}$ ,  ${}^{231}\text{Pa}$ ,  ${}^{237}\text{Np}$ ,  ${}^{238,239,240,241,242}\text{Pu}$ ,  ${}^{241,243}\text{Am}$ ,  ${}^{243,244}\text{Cm}(\alpha)$ ; measured  $\text{E}\alpha$ ,  $\text{I}\alpha$ . JOUR PRVCA 79 054605
- 2009SE10 NUCLEAR REACTIONS  ${}^{204}\text{Pb}(\text{n}, \text{n}'\gamma)$ ,  $(\text{n}, 2\text{n})$ ,  $(\text{n}, 3\text{n}){}^{202\text{m}}\text{Pb}$  /  ${}^{203}\text{Pb}$  /  ${}^{203\text{m}}\text{Pb}$  /  ${}^{204\text{m}}\text{Pb}$ , E=14-21 MeV;  ${}^{206}\text{Pb}(\text{n}, 3\text{n})$ ,  $(\text{n}, \alpha){}^{203}\text{Hg}$  /  ${}^{204\text{m}}\text{Pb}$ , E=14-21 MeV;  ${}^{208}\text{Pb}(\text{n}, \text{p}){}^{208}\text{Tl}$ , E=14-21 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  and  $\sigma$ . Comparison with TALYS and STAPRE model calculations. JOUR PRVCA 80 024610
- ${}^{204}\text{Bi}$  2008ERZY NUCLEAR REACTIONS  ${}^{209}\text{Bi}(\gamma, 2\text{n})$ ,  $(\gamma, 3\text{n})$ ,  $(\gamma, 4\text{n})$ ,  $(\gamma, 5\text{n})$ ,  $(\gamma, 6\text{n})$ ,  $(\gamma, 7\text{n})$ , E<67.7 MeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$  of residuals; deduced  $\sigma$  integrated yields. Activation technique. CONF Moscow,P125,Ermakov
- 2009TI09 NUCLEAR REACTIONS  ${}^{59}\text{Co}$ ,  ${}^{197}\text{Au}$ ,  ${}^{181}\text{Ta}$ ,  ${}^{64}\text{Zn}(\text{n}, \gamma)$ ,  ${}^{59}\text{Co}$ ,  ${}^{27}\text{Al}$ ,  ${}^{181}\text{Ta}$ ,  ${}^{115}\text{In}$ ,  ${}^{64}\text{Zn}$ ,  ${}^{65}\text{Cu}$ ,  ${}^{115}\text{In}(\text{n}, \text{n}')$ ,  $\text{Pb}(\text{p}, \text{xn}){}^{203}\text{Bi}$  /  ${}^{204}\text{Bi}$  /  ${}^{205}\text{Bi}$  /  ${}^{206}\text{Bi}$ ,  $\text{In}(\text{p}, \text{xn}){}^{113}\text{Sn}$ ,  ${}^{59}\text{Co}$ ,  ${}^{209}\text{Bi}(\text{p}, 3\text{n})$ ,  ${}^{63}\text{Cu}(\text{p}, 2\text{n})$ ,  ${}^{209}\text{Bi}$ ,  ${}^{169}\text{Tm}$ ,  ${}^{93}\text{Nb}$ ,  ${}^{65}\text{Cu}(\text{p}, 4\text{n})$ , E=0.8 GeV; measured  $\text{E}\gamma$ ,  $\text{I}\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48

**A=204 (continued)**

- <sup>204</sup>Rn 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. <sup>202,204,206,208,210,212,214,216,218,220,222</sup>Rn; <sup>205,207,209,211,213,215,217,219,221,223</sup>Fr, <sup>206,208,210,212,214,216,218,220,222,224</sup>Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=205**

- <sup>205</sup>Au 2008ST20 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>194</sup>Re / <sup>195</sup>Re / <sup>196</sup>Re / <sup>196</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>205</sup>Au, E=1 GeV / nucleon; measured E $\gamma$ , I $\gamma$ , half-lives, B(E2), B(E3). <sup>204</sup>Pt; deduced levels, J,  $\pi$ . Comparisons with <sup>206</sup>Hg and shell model calculations. JOUR PRVCA 78 061302
- 2008STZY NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir / <sup>198</sup>Ir / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>203</sup>Ir / <sup>197</sup>Pt / <sup>198</sup>Pt / <sup>199</sup>Pt / <sup>200</sup>Pt / <sup>201</sup>Pt / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>201</sup>Au / <sup>202</sup>Au / <sup>203</sup>Au / <sup>204</sup>Au / <sup>205</sup>Au / <sup>193</sup>Os / <sup>195</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>190</sup>W / <sup>191</sup>W / <sup>203</sup>Hg / <sup>204</sup>Hg / <sup>205</sup>Hg / <sup>206</sup>Hg / <sup>191</sup>Re / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>196</sup>Re / <sup>188</sup>Ta / <sup>189</sup>Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- 2009P001 NUCLEAR REACTIONS Be(<sup>208</sup>Pb, <sup>205</sup>Au), E=1 GeV / nucleon; measured delayed charged-particle,  $\gamma$  spectra, (fragment) $\gamma$ -, (fragment)(charged-particle)-coin. <sup>205</sup>Au deduced levels, J,  $\pi$ , T<sub>1/2</sub>, configurations, B(M4) upper limit. Comparison with shell-model. JOUR PYLBB 672 116
- 2009ST16 NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>189</sup>Ta; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>191</sup>W; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>193</sup>Os; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>197</sup>Os; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>198</sup>Os; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>199</sup>Os; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>196</sup>Re; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>199</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>200</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>201</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>202</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>203</sup>Ir; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>197</sup>Pt; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>199</sup>Pt; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>203</sup>Pt; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>204</sup>Pt; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>201</sup>Au; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>202</sup>Au; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>204</sup>Au; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>205</sup>Au; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>204</sup>Hg; <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>205</sup>Hg, E=1 GeV / nucleon; measured delayed I $\gamma$ , E $\gamma$ , isomer decay. JOUR IMPEE 18 1002
- <sup>205</sup>Hg 2008STZY NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir / <sup>198</sup>Ir / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>203</sup>Ir / <sup>197</sup>Pt / <sup>198</sup>Pt / <sup>199</sup>Pt / <sup>200</sup>Pt / <sup>201</sup>Pt / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>201</sup>Au / <sup>202</sup>Au / <sup>203</sup>Au / <sup>204</sup>Au / <sup>205</sup>Au / <sup>193</sup>Os / <sup>195</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>190</sup>W / <sup>191</sup>W / <sup>203</sup>Hg / <sup>204</sup>Hg / <sup>205</sup>Hg / <sup>206</sup>Hg / <sup>191</sup>Re / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>196</sup>Re / <sup>188</sup>Ta / <sup>189</sup>Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey



## A=205 (continued)

- 2009ST16 NUCLEAR REACTIONS  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{189}\text{Ta}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{191}\text{W}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{193}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{198}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Os}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{196}\text{Re}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{195}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{200}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Ir}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{197}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{199}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{203}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Pt}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{201}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{202}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Au}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{204}\text{Hg}$ ;  ${}^9\text{Be}({}^{208}\text{Pb}, \text{X}){}^{205}\text{Hg}$ , E=1 GeV / nucleon; measured delayed  $I\gamma$ ,  $E\gamma$ , isomer decay. JOUR IMPEE 18 1002
- ${}^{205}\text{Tl}$  2009VA06 NUCLEAR REACTIONS  ${}^{208}\text{Pb}({}^{48}\text{Ca}, {}^{50}\text{Ca})$ , ( ${}^{48}\text{Ca}$ ,  ${}^{51}\text{Sc}$ ), E=310 MeV; measured  $E\gamma$ ,  $I\gamma$ , half-lives for first excited states using DSAM.  ${}^{50}\text{Ca}$ ,  ${}^{51}\text{Sc}$ ; deduced B(E2). JOUR PRLTA 102 242502
- ${}^{205}\text{Pb}$  2009SY01 NUCLEAR REACTIONS  ${}^{206,208}\text{Pb}({}^3\text{He}, {}^3\text{He}'\gamma)$ , ( ${}^3\text{He}$ ,  $\alpha\gamma$ ), E=38 MeV; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced spin distributions, level densities, entropies, temperature,  $\gamma$ -ray strength functions. Comparison of E1 and M1 strengths with Standard Lorentzian and enhanced generalized Lorentzian models. JOUR PRVCA 79 024316
- ${}^{205}\text{Bi}$  2008ERZY NUCLEAR REACTIONS  ${}^{209}\text{Bi}(\gamma, 2n)$ , ( $\gamma, 3n$ ), ( $\gamma, 4n$ ), ( $\gamma, 5n$ ), ( $\gamma, 6n$ ), ( $\gamma, 7n$ ), E<67.7 MeV; measured  $E\gamma$ ,  $I\gamma$  of residuals; deduced  $\sigma$  integrated yields. Activation technique. CONF Moscow,P125,Ermakov
- 2009NA36 NUCLEAR REACTIONS  ${}^{209}\text{Bi}(\gamma, \text{F})$ , E=50, 65 MeV bremsstrahlung; measured fission yields;  ${}^{209}\text{Bi}(\gamma, 3n)$ , ( $\gamma, 4n$ ), E=50, 65 MeV bremsstrahlung; measured  $E\gamma$ ,  $I\gamma$ ,  $\sigma$ . Comparison with other data and TALYS code. JOUR ZAANE 41 323
- 2009TI09 NUCLEAR REACTIONS  ${}^{59}\text{Co}$ ,  ${}^{197}\text{Au}$ ,  ${}^{181}\text{Ta}$ ,  ${}^{64}\text{Zn}(n, \gamma)$ ,  ${}^{59}\text{Co}$ ,  ${}^{27}\text{Al}$ ,  ${}^{181}\text{Ta}$ ,  ${}^{115}\text{In}$ ,  ${}^{64}\text{Zn}$ ,  ${}^{65}\text{Cu}$ ,  ${}^{115}\text{In}(n, n')$ ,  $\text{Pb}(p, xn)$   ${}^{203}\text{Bi}$  /  ${}^{204}\text{Bi}$  /  ${}^{205}\text{Bi}$  /  ${}^{206}\text{Bi}$ ,  $\text{In}(p, xn)$   ${}^{113}\text{Sn}$ ,  ${}^{59}\text{Co}$ ,  ${}^{209}\text{Bi}(p, 3n)$ ,  ${}^{63}\text{Cu}(p, 2n)$ ,  ${}^{209}\text{Bi}$ ,  ${}^{169}\text{Tm}$ ,  ${}^{93}\text{Nb}$ ,  ${}^{65}\text{Cu}(p, 4n)$ , E=0.8 GeV; measured  $E\gamma$ ,  $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- ${}^{205}\text{Rn}$  2008HA39 NUCLEAR REACTIONS  ${}^{181}\text{Ta}({}^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  ${}^{204}\text{At}$ ,  ${}^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  ${}^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  ${}^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  ${}^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  ${}^{205}\text{Rn}$ ,  ${}^{198,199,200,201,202}\text{Bi}$ ,  ${}^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- ${}^{205}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  ${}^{181}\text{Ta}({}^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  ${}^{204}\text{At}$ ,  ${}^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  ${}^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  ${}^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  ${}^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  ${}^{205}\text{Rn}$ ,  ${}^{198,199,200,201,202}\text{Bi}$ ,  ${}^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

## A=206

- <sup>206</sup>Hg 2008STZY NUCLEAR REACTIONS <sup>9</sup>Be(<sup>208</sup>Pb, X)<sup>195</sup>Ir / <sup>198</sup>Ir / <sup>199</sup>Ir / <sup>200</sup>Ir / <sup>201</sup>Ir / <sup>202</sup>Ir / <sup>203</sup>Ir / <sup>197</sup>Pt / <sup>198</sup>Pt / <sup>199</sup>Pt / <sup>200</sup>Pt / <sup>201</sup>Pt / <sup>202</sup>Pt / <sup>203</sup>Pt / <sup>204</sup>Pt / <sup>201</sup>Au / <sup>202</sup>Au / <sup>203</sup>Au / <sup>204</sup>Au / <sup>205</sup>Au / <sup>193</sup>Os / <sup>195</sup>Os / <sup>197</sup>Os / <sup>198</sup>Os / <sup>199</sup>Os / <sup>190</sup>W / <sup>191</sup>W / <sup>203</sup>Hg / <sup>204</sup>Hg / <sup>205</sup>Hg / <sup>206</sup>Hg / <sup>191</sup>Re / <sup>192</sup>Re / <sup>193</sup>Re / <sup>194</sup>Re / <sup>196</sup>Re / <sup>188</sup>Ta / <sup>189</sup>Ta; measured E $\gamma$ , I $\gamma$ ; Deduced levels, J,  $\pi$ . THESIS S J Steer, University of Surrey
- <sup>206</sup>Pb 2009DR05 RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- 2009PI14 NUCLEAR REACTIONS <sup>208</sup>Pb(polarized  $\gamma$ ,  $\gamma'$ ), E=5.5, 5.6 MeV; measured E $\gamma$ , I $\gamma$  using the azimuthal nuclear resonance fluorescence intensity asymmetry technique. <sup>206,207,208</sup>Pb; deduced levels, J,  $\pi$ . JOUR PYLBB 681 134
- 2009SY01 NUCLEAR REACTIONS <sup>206,208</sup>Pb(<sup>3</sup>He, <sup>3</sup>He' $\gamma$ ), (<sup>3</sup>He,  $\alpha\gamma$ ), E=38 MeV; measured E $\gamma$ , I $\gamma$ , (particle) $\gamma$ -coin; deduced spin distributions, level densities, entropies, temperature,  $\gamma$ -ray strength functions. Comparison of E1 and M1 strengths with Standard Lorentzian and enhanced generalized Lorentzian models. JOUR PRVCA 79 024316
- 2009VA06 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>48</sup>Ca, <sup>50</sup>Ca), (<sup>48</sup>Ca, <sup>51</sup>Sc), E=310 MeV; measured E $\gamma$ , I $\gamma$ , half-lives for first excited states using DSAM. <sup>50</sup>Ca, <sup>51</sup>Sc; deduced B(E2). JOUR PRLTA 102 242502
- <sup>206</sup>Bi 2008ERZY NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , 2n), ( $\gamma$ , 3n), ( $\gamma$ , 4n), ( $\gamma$ , 5n), ( $\gamma$ , 6n), ( $\gamma$ , 7n), E<67.7 MeV; measured E $\gamma$ , I $\gamma$  of residuals; deduced  $\sigma$  integrated yields. Activation technique. CONF Moscow,P125,Ermakov
- 2009NA36 NUCLEAR REACTIONS <sup>209</sup>Bi( $\gamma$ , F), E=50, 65 MeV bremsstrahlung; measured fission yields; <sup>209</sup>Bi( $\gamma$ , 3n), ( $\gamma$ , 4n), E=50, 65 MeV bremsstrahlung; measured E $\gamma$ , I $\gamma$ ,  $\sigma$ . Comparison with other data and TALYS code. JOUR ZAANE 41 323
- 2009TI09 NUCLEAR REACTIONS <sup>59</sup>Co, <sup>197</sup>Au, <sup>181</sup>Ta, <sup>64</sup>Zn(n,  $\gamma$ ), <sup>59</sup>Co, <sup>27</sup>Al, <sup>181</sup>Ta, <sup>115</sup>In, <sup>64</sup>Zn, <sup>65</sup>Cu, <sup>115</sup>In(n, n'), Pb(p, xn)<sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi, In(p, xn)<sup>113</sup>Sn, <sup>59</sup>Co, <sup>209</sup>Bi(p, 3n), <sup>63</sup>Cu(p, 2n), <sup>209</sup>Bi, <sup>169</sup>Tm, <sup>93</sup>Nb, <sup>65</sup>Cu(p, 4n), E=0.8 GeV; measured E $\gamma$ , I $\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- <sup>206</sup>Po 2009TI09 NUCLEAR REACTIONS <sup>59</sup>Co, <sup>197</sup>Au, <sup>181</sup>Ta, <sup>64</sup>Zn(n,  $\gamma$ ), <sup>59</sup>Co, <sup>27</sup>Al, <sup>181</sup>Ta, <sup>115</sup>In, <sup>64</sup>Zn, <sup>65</sup>Cu, <sup>115</sup>In(n, n'), Pb(p, xn)<sup>203</sup>Bi / <sup>204</sup>Bi / <sup>205</sup>Bi / <sup>206</sup>Bi, In(p, xn)<sup>113</sup>Sn, <sup>59</sup>Co, <sup>209</sup>Bi(p, 3n), <sup>63</sup>Cu(p, 2n), <sup>209</sup>Bi, <sup>169</sup>Tm, <sup>93</sup>Nb, <sup>65</sup>Cu(p, 4n), E=0.8 GeV; measured E $\gamma$ , I $\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48
- <sup>206</sup>At 2009DR08 NUCLEAR REACTIONS <sup>197</sup>Au(<sup>16</sup>O, 5n), (<sup>16</sup>O, 3n $\alpha$ ), E=95 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$ , conversion electrons, T<sub>1/2</sub> using the CAESAR array. <sup>208</sup>Fr; deduced levels, J,  $\pi$ , T<sub>1/2</sub>, B(E1), multipolarities, conversion coefficients, configurations. <sup>206</sup>At; deduced levels, J,  $\pi$ , T<sub>1/2</sub>, B(E1), configurations. JOUR ZAANE 40 127

KEYNUMBERS AND KEYWORDS

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**A=206 (continued)**

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| $^{206}\text{Rn}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{206}\text{Fr}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |

**A=207**

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| $^{207}\text{Tl}$ | 2009NA09 | NUCLEAR REACTIONS $^{208}\text{Pb}(\alpha, \alpha'p)$ , E=400 MeV; measured $E\alpha$ , $I\alpha$ , decay proton spectra, $\sigma(E, \theta)$ ; calculated $\sigma(\theta)$ via DWBA; deduced ISGDR proton-decay branching ratio. Comparison with continuum RPA calculations. JOUR PYLBB 674 281  |
| $^{207}\text{Pb}$ | 2009PI14 | NUCLEAR REACTIONS $^{208}\text{Pb}(\text{polarized } \gamma, \gamma')$ , E=5.5, 5.6 MeV; measured $E\gamma$ , $I\gamma$ using the azimuthal nuclear resonance fluorescence intensity asymmetry technique. $^{206,207,208}\text{Pb}$ ; deduced levels, J, $\pi$ . JOUR PYLBB 681 134   |
|                   | 2009SY01 | NUCLEAR REACTIONS $^{206,208}\text{Pb}(^3\text{He}, ^3\text{He}'\gamma)$ , $(^3\text{He}, \alpha\gamma)$ , E=38 MeV; measured $E\gamma$ , $I\gamma$ , (particle) $\gamma$ -coin; deduced spin distributions, level densities, entropies, temperature, $\gamma$ -ray strength functions. Comparison of E1 and M1 strengths with Standard Lorentzian and enhanced generalized Lorentzian models. JOUR PRVCA 79 024316   |
| $^{207}\text{Bi}$ | 2008ERZY | NUCLEAR REACTIONS $^{209}\text{Bi}(\gamma, 2n)$ , $(\gamma, 3n)$ , $(\gamma, 4n)$ , $(\gamma, 5n)$ , $(\gamma, 6n)$ , $(\gamma, 7n)$ , E<67.7 MeV; measured $E\gamma$ , $I\gamma$ of residuals; deduced $\sigma$ integrated yields. Activation technique. CONF Moscow,P125,Ermakov  |
| $^{207}\text{Po}$ | 2009TI09 | NUCLEAR REACTIONS $^{59}\text{Co}$ , $^{197}\text{Au}$ , $^{181}\text{Ta}$ , $^{64}\text{Zn}(n, \gamma)$ , $^{59}\text{Co}$ , $^{27}\text{Al}$ , $^{181}\text{Ta}$ , $^{115}\text{In}$ , $^{64}\text{Zn}$ , $^{65}\text{Cu}$ , $^{115}\text{In}(n, n')$ , $\text{Pb}(p, xn)^{203}\text{Bi}$ / $^{204}\text{Bi}$ / $^{205}\text{Bi}$ / $^{206}\text{Bi}$ , $\text{In}(p, xn)^{113}\text{Sn}$ , $^{59}\text{Co}$ , $^{209}\text{Bi}(p, 3n)$ , $^{63}\text{Cu}(p, 2n)$ , $^{209}\text{Bi}$ , $^{169}\text{Tm}$ , $^{93}\text{Nb}$ , $^{65}\text{Cu}(p, 4n)$ , E=0.8 GeV; measured $E\gamma$ , $I\gamma$ ; deduced reaction rates, proton, neutron spectra, neutron flux. Comparison with LAHET code results. JOUR AENGA 107 48 |
| $^{207}\text{Fr}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319   |
| $^{207}\text{Ra}$ | 2009LAZV | RADIOACTIVITY $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner   |

## A=208

- <sup>208</sup>Hg 2009AL15 RADIOACTIVITY <sup>208</sup>Hg, <sup>209</sup>Tl(IT); measured E $\gamma$ , I $\gamma$ , isomeric states. Comparison with shell model calculation. JOUR APOBB 40 871
- 2009CH08 ATOMIC MASSES <sup>208</sup>Hg; measured atomic mass using time resolved Schottky mass spectrometry. JOUR PRLTA 102 122503
- <sup>208</sup>Tl 2009DR05 RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- 2009SE10 NUCLEAR REACTIONS <sup>204</sup>Pb(n, n' $\gamma$ ), (n, 2n), (n, 3n)<sup>202m</sup>Pb / <sup>203</sup>Pb / <sup>203m</sup>Pb / <sup>204m</sup>Pb, E=14-21 MeV; <sup>206</sup>Pb(n, 3n), (n,  $\alpha$ )<sup>203</sup>Hg / <sup>204m</sup>Pb, E=14-21 MeV; <sup>208</sup>Pb(n, p)<sup>208</sup>Tl, E=14-21 MeV; measured E $\gamma$ , I $\gamma$  and  $\sigma$ . Comparison with TALYS and STAPRE model calculations. JOUR PRVCA 80 024610
- <sup>208</sup>Pb 2007MIZM NUCLEAR REACTIONS <sup>208</sup>Pb, <sup>209</sup>Bi(<sup>76</sup>Ge, <sup>76</sup>Ge'), E not given; measured E(particle), I(particle) at backward angles; deduced quasielastic  $\sigma$ . REPT JAEA-Review 2007-046,P53,Mitsuoko
- 2007TOZV NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>27</sup>P, p<sup>26</sup>Si), E not given; measured E $\gamma$ , I $\gamma$ , E(particle), I(particle), particle- $\gamma$ -coin. Coulomb dissociation, nuclear astrophysics. REPT RIKEN 2006 Annual,P14,Togano
- 2008MOZY RADIOACTIVITY <sup>212</sup>Po( $\alpha$ ) [from <sup>228</sup>Th decay]; measured T<sub>1/2</sub>. CONF Moscow,P55,Morozov
- 2008SH23 NUCLEAR REACTIONS <sup>208</sup>Pb(polarized  $\gamma$ ,  $\gamma$ ), E=7.0-7.4 MeV; measured E $\gamma$ , I $\gamma$ , angular distributions, azimuthal asymmetry, B(M1), B(E1), widths. <sup>208</sup>Pb; deduced levels, J,  $\pi$ . JOUR PRVCA 78 061303
- 2008TOZW NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>100</sup>Ru, <sup>100</sup>Ru'), E=440 MeV; measured Coulomb excitation, E $\gamma$ , I $\gamma$ . REPT JAEA-Review 2008-054,P29,Toh
- 2008TOZX NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>27</sup>P, p<sup>26</sup>Si), E not given; measured E $\gamma$ , I $\gamma$ ; deduced  $\sigma$  for <sup>26</sup>Si(p,  $\gamma$ ). REPT RIKEN 2007 Annual,P7,Togano
- 2008VOZX NUCLEAR REACTIONS <sup>112,120</sup>Sn( $\gamma$ ,  $\gamma'$ ), E < 9.5 MeV; measured E $\gamma$ , I $\gamma$ ; deduced B(E1) distribution. <sup>208</sup>Pb(p, p'), E=295 MeV; measured Ep, Ip; deduced B(E1) distribution. CONF Cappadocia (Nuclear Physics and Astrophysics),P124,von Neumann-Co
- 2009DR05 RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- 2009EL03 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>20</sup>C, <sup>20</sup>C'), E=37.6 MeV / nucleon; <sup>1</sup>H(<sup>20</sup>C, <sup>20</sup>C'), E=41.4 MeV / nucleon; measured E $\gamma$ , I $\gamma$ . <sup>20</sup>C; deduced levels, J,  $\pi$ , charge and neutron transition probabilities, B(E2). Comparison with shell model calculations. JOUR PRVCA 79 011302
- 2009GI06 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>26</sup>Ne, <sup>26</sup>Ne'), E=58 MeV / nucleon; measured reaction fragments, E $\gamma$ , I $\gamma$ ; deduced  $\sigma(\theta)$ , B(E1), B(E2). Secondary beam from <sup>40</sup>Ar fragmentation. JOUR IMPEE 18 2050
- 2009GIZZ NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>26</sup>Ne, <sup>26</sup>Ne'), E=58 MeV / nucleon; measured fragment spectra. <sup>26</sup>Ne; deduced level energies, B(E1). REPT RIKEN-NC-NP-29,Gibelin

KEYNUMBERS AND KEYWORDS

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A=208 (*continued*)

- 2009LI23 NUCLEAR REACTIONS  $^{152,154}\text{Sm}$ ,  $^{184}\text{W}$ ,  $^{196}\text{Pt}$ ,  $^{208}\text{Pb}(^{16}\text{O}, ^{16}\text{O})$ , E=36-80 MeV; measured particle spectra,  $\sigma$  as a function of beam energy; deduced diffuseness parameters using single-channel and coupled-channels calculations. JOUR PRVCA 79 064603
- 2009MAZW NUCLEAR REACTIONS  $^{208}\text{Pb}(^{17}\text{F}, ^{17}\text{F})$ , E=85 MeV; measured E(particle), I(particle); deduced  $\sigma$ . Given comparison of experimental data of elastic scattering  $\sigma$  for nuclei from  $^4\text{He}$  to  $^{19}\text{F}$  on  $^{208}\text{Pb}$  and  $^{209}\text{Bi}$  in reduced variables. CONF Tokai (Perspective in Nuc Phys), Proc.P21,Mazzocco
- 2009MIZZ NUCLEAR REACTIONS  $^{208}\text{Pb}(^{48}\text{Ti}, ^{48}\text{Ti}')$ , E(cm) $\approx$ 175-205 MeV; $^{208}\text{Pb}(^{54}\text{Cr}, ^{54}\text{Cr}')$ , E(cm) $\approx$ 188-230 MeV; $^{208}\text{Pb}(^{56}\text{Fe}, ^{56}\text{Fe}')$ , E(cm) $\approx$ 215-240 MeV; $^{208}\text{Pb}(^{64}\text{Ni}, ^{64}\text{Ni}')$ , E(cm) $\approx$ 220-255 MeV; $^{208}\text{Pb}(^{70}\text{Zn}, ^{70}\text{Zn}')$ , E(cm) $\approx$ 235-265 MeV; $^{208}\text{Pb}(^{86}\text{Kr}, ^{86}\text{Kr}')$ , E not given; measured yields, fragment spectra; deduced fission barrier heights; calculated  $d\sigma$ , barrier distributions using CC (code CCFULL-SC) with quadrupole and octupole phonon excitations and different potentials. CONF Tokai (Perspective in Nuc Phys), Proc.P15,Mitsuoka
- 2009PI14 NUCLEAR REACTIONS  $^{208}\text{Pb}(\text{polarized } \gamma, \gamma')$ , E=5.5, 5.6 MeV; measured  $E\gamma$ ,  $I\gamma$  using the azimuthal nuclear resonance fluorescence intensity asymmetry technique.  $^{206,207,208}\text{Pb}$ ; deduced levels, J,  $\pi$ . JOUR PYLBB 681 134
- 2009SH19 NUCLEAR REACTIONS  $^{58}\text{Ni}$ ,  $^{89}\text{Y}$ ,  $^{90}\text{Zr}$ ,  $^{120}\text{Sn}$ ,  $^{142}\text{Nd}$ ,  $^{166}\text{Er}$ ,  $^{208}\text{Pb}(\text{p}, \text{p}')$ , E=200 MeV; measured proton spectra, angular distributions; deduced isoscalar giant quadrupole resonance (ISGQR) and associated E2 strength functions. Wavelet analysis. Comparisons with quasiparticle-phonon model (QPM), extended time-dependent Hartree-Fock method (ETDHF), random-phase approximation (RPA) and extended theory of finite Fermi systems (ETFFS). JOUR PRVCA 79 044305
- 2009SY01 NUCLEAR REACTIONS  $^{206,208}\text{Pb}(^3\text{He}, ^3\text{He}'\gamma)$ ,  $(^3\text{He}, \alpha\gamma)$ , E=38 MeV; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin; deduced spin distributions, level densities, entropies, temperature,  $\gamma$ -ray strength functions. Comparison of E1 and M1 strengths with Standard Lorentzian and enhanced generalized Lorentzian models. JOUR PRVCA 79 024316
- 2009TA13 NUCLEAR REACTIONS  $^{12}\text{C}$ ,  $^{26}\text{Mg}$ ,  $^{28}\text{Si}$ ,  $^{48}\text{Ca}$ ,  $^{58,64}\text{Ni}$ ,  $^{208}\text{Pb}(\text{p}, \text{p}')$ , E=295 MeV; measured  $E_p$ ,  $I_p$ ,  $\sigma(\theta)$ ; deduced level energies. Systematic study of M1 and E1 excitations. JOUR NIMAE 605 326
- 2009ZI01 NUCLEAR REACTIONS  $^{109}\text{Ag}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , E=2.68 MeV / nucleon;  $^{208}\text{Pb}(^{44}\text{Ar}, ^{44}\text{Ar}')$ , E=3.68 MeV / nucleon; measured  $E\gamma$ ,  $I\gamma$ , (particle) $\gamma$ -coin,  $\gamma$  yields.  $^{44}\text{Ar}$ ; deduced levels, B(E2) matrix elements, spectroscopic quadrupole moments. Comparisons with experimental data for neighboring A=42-46 Ar, S and Si nuclides and GCM(GOA), AMPGCM, and Shell model calculations. JOUR PRVCA 80 014317
- $^{208}\text{Po}$  2009DR05 RADIOACTIVITY  $^{268}\text{Db}$ ,  $^{268}\text{Rf}(\alpha)$ , (SF); measured  $E\alpha$ ,  $I\alpha$  and SF events.  $^{212}\text{Bi}$ ,  $^{208,210,212,216}\text{Po}$ ,  $^{220}\text{Rn}$ ,  $^{224}\text{Ra}$ ,  $^{228,230}\text{Th}$ ,  $^{231}\text{Pa}$ ,  $^{237}\text{Np}$ ,  $^{238,239,240,241,242}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{243,244}\text{Cm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 054605

**A=208 (continued)**

- 2009PE19 NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, \text{xn})^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn}$ ,  
 $^{209}\text{Bi}(^6\text{Li}, \text{X})^{208}\text{Po} / ^{210}\text{Po}$ ,  $\text{Pt}(^6\text{Li}, \text{xn})^{200}\text{Tl}$ ,  $^{198}\text{Pt}(^6\text{Li}, \text{X})^{199}\text{Au}$ ,  
 $^{197}\text{Au}(^6\text{He}, \text{xn})$ ,  $^{206}\text{Pb}(^6\text{He}, 2\text{n})^{210}\text{Po}$ , E=55 MeV; measured reaction  
products,  $E_\gamma$ ,  $I_\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617
- $^{208}\text{Rn}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E_\gamma$ ,  
 $I_\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2),  
magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  
 $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ;  
energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ;  
systematics of spin and rotational energy. JOUR PRVCA 78 054319
- $^{208}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E_\gamma$ ,  
 $I_\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2),  
magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  
 $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ;  
energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ;  
systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009DR08 NUCLEAR REACTIONS  $^{197}\text{Au}(^{16}\text{O}, 5\text{n})$ , ( $^{16}\text{O}$ ,  $3\text{n}\alpha$ ), E=95 MeV;  
measured  $E_\gamma$ ,  $I_\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$ , conversion electrons,  $T_{1/2}$  using  
the CAESAR array.  $^{208}\text{Fr}$ ; deduced levels, J,  $\pi$ ,  $T_{1/2}$ , B(E1),  
multipolarities, conversion coefficients, configurations.  $^{206}\text{At}$ ; deduced  
levels, J,  $\pi$ ,  $T_{1/2}$ , B(E1), configurations. JOUR ZAANE 40 127

**A=209**

- $^{209}\text{Tl}$  2009AL15 RADIOACTIVITY  $^{208}\text{Hg}$ ,  $^{209}\text{Tl}(\text{IT})$ ; measured  $E_\gamma$ ,  $I_\gamma$ , isomeric  
states. Comparison with shell model calculation. JOUR APOBB 40 871
- $^{209}\text{Pb}$  2009IN01 RADIOACTIVITY  $^{229\text{m}}\text{Th}(\alpha)$ ; measured  $E_\alpha$ ,  $I_\alpha$ , half-life. Search for  
3.5-eV isomer in  $^{229}\text{Th}$  populated through nuclear excitation by  
electronic transition (NEET).  $^{229}\text{Th}$ ,  $^{225}\text{Ac}$ ,  $^{221}\text{Fr}$ ,  $^{217}\text{At}$ ,  $^{213}\text{Po}(\alpha)$ ;  
measured  $E_\alpha$ .  $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79  
034313
- $^{209}\text{Bi}$  2007MAYX NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{He}, ^6\text{He})$ , E=19, 22.5 MeV; measured  
E(particle), I(particle); deduced  $\sigma(\theta)$ ; calculated  $\sigma(\theta)$  using four-body  
extension to continuum-discretized coupled channel method. Four-body  
contribution necessary. REPT RIKEN 2006 Annual, P43, Matsumoto
- 2007MIZM NUCLEAR REACTIONS  $^{208}\text{Pb}$ ,  $^{209}\text{Bi}(^76\text{Ge}, ^76\text{Ge}')$ , E not given;  
measured E(particle), I(particle) at backward angles; deduced  
quasielastic  $\sigma$ . REPT JAEA-Review 2007-046, P53, Mitsuo
- $^{209}\text{Po}$  2009NI05 NUCLEAR REACTIONS  $^{209}\text{Bi}(d, 2\text{n})$ , E=13 MeV; measured  $E_\gamma$ ,  
time-differential perturbed angular distributions (TDPAD), half-lives.  
 $^{209}\text{Po}$ ; deduced spectroscopic electric quadrupole moments. JOUR  
PRVCA 79 044314
- 2009NI05 NUCLEAR MOMENTS  $^{209}\text{Po}$ ; measured electric quadrupole moments  
by TDPAD technique. JOUR PRVCA 79 044314
- $^{209}\text{At}$  2008XU09 RADIOACTIVITY  $^{153}\text{Er}$ ,  $^{157}\text{Yb}$ ,  $^{209}\text{Fr}$ ,  $^{128}\text{Ce}$ ,  $^{130}\text{Ce}$ ,  $^{128}\text{Pr}$ ,  $^{130}\text{Pm}$ ,  
 $^{140}\text{Tb}(\beta^+\text{EC})$ ; measured x-rays,  $E_\gamma$ ,  $I_\gamma$ ,  $x\gamma$ -coin.,  $x\gamma\gamma$ -coin.; deduced J,  
 $\pi$ , level energies. JOUR IMPEE 17 S01 1

KEYNUMBERS AND KEYWORDS

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**A=209 (continued)**

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|                   | 2009BA28 | RADIOACTIVITY <sup>209,210,211</sup> At, <sup>213</sup> Rn(IT); measured E $\gamma$ , I $\gamma$ . JOUR APOBB 40 889   |
| <sup>209</sup> Rn | 2009GA07 | NUCLEAR REACTIONS <sup>209</sup> Bi( <sup>10</sup> B, X), ( <sup>11</sup> B, X) <sup>209</sup> Rn / <sup>210</sup> Rn / <sup>211</sup> Rn / <sup>212</sup> Rn / <sup>213</sup> Rn / <sup>213</sup> Ra / <sup>214</sup> Ra / <sup>215</sup> Ra / <sup>216</sup> Ra / <sup>217</sup> Ra / <sup>210</sup> Po / <sup>211</sup> Po / <sup>210</sup> At / <sup>211</sup> At / <sup>212</sup> At / <sup>213</sup> At / , E(cm)=52-72 MeV; measured E $\alpha$ , $\sigma$ , complete fusion cross section, fission $\sigma$ , summed $\sigma$ for (xn), summed $\sigma$ for (pxn), summed $\sigma$ for (xn), summed $\sigma$ for ( $\alpha$ xn), summed $\sigma$ for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for <sup>186</sup> W( <sup>30</sup> Si, X) reaction. <sup>209</sup> Bi( <sup>10</sup> B, X), ( <sup>11</sup> B, X), E=5-7.5 MeV / nucleon; <sup>209</sup> Bi( <sup>7</sup> Li, X), ( <sup>6</sup> Li, X), E=3.9-7.5 MeV / nucleon; <sup>209</sup> Bi( $\alpha$ , X), E=7.5-9.3 MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605 |
|                   | 2009PE01 | NUCLEAR REACTIONS <sup>209</sup> Bi( <sup>6</sup> Li, 3n), ( <sup>6</sup> Li, 4n), ( <sup>6</sup> Li, 5n), ( <sup>6</sup> Li, 6n), <sup>198,196,195</sup> Pt( <sup>6</sup> Li, 5n), <sup>198,196,195,194</sup> Pt( <sup>6</sup> Li, 4n), <sup>196,195,194</sup> Pt( <sup>6</sup> Li, 3n), <sup>198</sup> Pt( <sup>6</sup> Li, 2n), E < 55 MeV; measured E $\alpha$ , I $\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104  |
| <sup>209</sup> Fr | 2008HA39 | NUCLEAR REACTIONS <sup>181</sup> Ta( <sup>30</sup> Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin. <sup>204</sup> At, <sup>205,206,207</sup> Fr; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. <sup>202,204,206,208,210,212,214,216,218,220,222</sup> Rn; <sup>205,207,209,211,213,215,217,219,221,223</sup> Fr, <sup>206,208,210,212,214,216,218,220,222,224</sup> Fr; energy systematics. <sup>205</sup> Rn, <sup>198,199,200,201,202</sup> Bi, <sup>197,198,199,200,201</sup> Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319   |
|                   | 2008XU09 | RADIOACTIVITY <sup>153</sup> Er, <sup>157</sup> Yb, <sup>209</sup> Fr, <sup>128</sup> Ce, <sup>130</sup> Ce, <sup>128</sup> Pr, <sup>130</sup> Pm, <sup>140</sup> Tb( $\beta^+$ EC); measured x-rays, E $\gamma$ , I $\gamma$ , x $\gamma$ -coin., x $\gamma\gamma$ -coin.; deduced J, $\pi$ , level energies. JOUR IMPEE 17 S01 1   |
|                   | 2009DR04 | NUCLEAR REACTIONS <sup>197</sup> Au( <sup>16</sup> O, 4n), E=88-95 MeV; measured E $\gamma$ , I $\gamma$ , $\gamma\gamma$ -coin, $\gamma(\theta)$ , $\gamma(t)$ , conversion electrons, half-lives. <sup>209</sup> Fr; deduced levels, J, $\pi$ , isomers, multipolarities, internal conversion coefficients, transition strengths, configurations. <sup>209,211,213</sup> Fr; systematics of yrast states. Comparison with shell-model predictions. JOUR PRVCA 79 054313  |
| <sup>209</sup> Ra | 2009LAZV | RADIOACTIVITY <sup>211,213,217,218</sup> Th( $\alpha$ ); measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner   |

**A=210**

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|-------------------|----------|--|
| <sup>210</sup> Pb | 2009REZZ | RADIOACTIVITY <sup>40</sup> K( $\beta^-$ ), <sup>137</sup> Cs( $\beta^-$ ), <sup>210</sup> Pb( $\beta^-$ ), <sup>226</sup> Ra( $\alpha$ ), <sup>232</sup> Th( $\alpha$ ), <sup>238</sup> U( $\alpha$ ); measured E $\gamma$ , I $\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes |
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KEYNUMBERS AND KEYWORDS

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A=210 (*continued*)

$^{210}\text{Bi}$	2009REZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156, Reyes
$^{210}\text{Po}$	2008PE32	NUCLEAR REACTIONS $^{206}\text{Pb}({}^6\text{He}, 2n)$ , $^{208}\text{Pb}(\alpha, 2n)$ , $E=60.3$ MeV; $^{197}\text{Au}({}^6\text{He}, X)$ , $^{198}\text{Pt}(d, X)$ , $E$ not given; $^{196,198,199}\text{Au}$ ; measured reaction products; deduced excitation functions. JOUR IMPEE 17 2349
	2009DR05	RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605
	2009GA07	NUCLEAR REACTIONS $^{209}\text{Bi}({}^{10}\text{B}, X)$ , $({}^{11}\text{B}, X)$ $^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , $E(\text{cm})=52-72$ MeV; measured $E\alpha$ , $\sigma$ , complete fusion cross section, fission $\sigma$ , summed $\sigma$ for (xn), summed $\sigma$ for (pxn), summed $\sigma$ for (xn), summed $\sigma$ for ( $\alpha$ xn), summed $\sigma$ for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for $^{186}\text{W}({}^{30}\text{Si}, X)$ reaction. $^{209}\text{Bi}({}^{10}\text{B}, X)$ , $({}^{11}\text{B}, X)$ , $E=5-7.5$ MeV / nucleon; $^{209}\text{Bi}({}^7\text{Li}, X)$ , $({}^6\text{Li}, X)$ , $E=3.9-7.5$ MeV / nucleon; $^{209}\text{Bi}(\alpha, X)$ , $E=7.5-9.3$ MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
	2009LU02	NUCLEAR REACTIONS $^{206}\text{Pb}({}^6\text{He}, 2n)$ , $E=12-28$ MeV; $^{208}\text{Pb}({}^4\text{He}, 2n)$ , $E=12-28$ MeV; measured $\sigma$ . Comparison with statistical and sequential fusion models. JOUR PYLBB 670 321
	2009PE19	NUCLEAR REACTIONS $^{209}\text{Bi}({}^6\text{Li}, \text{xn})$ $^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn}$ , $^{209}\text{Bi}({}^6\text{Li}, X)$ $^{208}\text{Po} / ^{210}\text{Po}$ , $\text{Pt}({}^6\text{Li}, \text{xn})$ $^{200}\text{Tl}$ , $^{198}\text{Pt}({}^6\text{Li}, X)$ $^{199}\text{Au}$ , $^{197}\text{Au}({}^6\text{He}, \text{xn})$ , $^{206}\text{Pb}({}^6\text{He}, 2n)$ $^{210}\text{Po}$ , $E=55$ MeV; measured reaction products, $E\gamma$ , $I\gamma$ ; deduced $\sigma$ . JOUR PANUE 72 1617
$^{210}\text{At}$	2009BA28	RADIOACTIVITY $^{209,210,211}\text{At}$ , $^{213}\text{Rn}(\text{IT})$ ; measured $E\gamma$ , $I\gamma$ . JOUR APOBB 40 889
	2009GA07	NUCLEAR REACTIONS $^{209}\text{Bi}({}^{10}\text{B}, X)$ , $({}^{11}\text{B}, X)$ $^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , $E(\text{cm})=52-72$ MeV; measured $E\alpha$ , $\sigma$ , complete fusion cross section, fission $\sigma$ , summed $\sigma$ for (xn), summed $\sigma$ for (pxn), summed $\sigma$ for (xn), summed $\sigma$ for ( $\alpha$ xn), summed $\sigma$ for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for $^{186}\text{W}({}^{30}\text{Si}, X)$ reaction. $^{209}\text{Bi}({}^{10}\text{B}, X)$ , $({}^{11}\text{B}, X)$ , $E=5-7.5$ MeV / nucleon; $^{209}\text{Bi}({}^7\text{Li}, X)$ , $({}^6\text{Li}, X)$ , $E=3.9-7.5$ MeV / nucleon; $^{209}\text{Bi}(\alpha, X)$ , $E=7.5-9.3$ MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605



A=210 (*continued*)

- $^{210}\text{Rn}$     2008HA39    NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009GA07    NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})$   $^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})$ , E=5-7.5 MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X})$ ,  $(^6\text{Li}, \text{X})$ , E=3.9-7.5 MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X})$ , E=7.5-9.3 MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- 2009PE01    NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, 3\text{n})$ ,  $(^6\text{Li}, 4\text{n})$ ,  $(^6\text{Li}, 5\text{n})$ ,  $(^6\text{Li}, 6\text{n})$ ,  $^{198,196,195}\text{Pt}(^6\text{Li}, 5\text{n})$ ,  $^{198,196,195,194}\text{Pt}(^6\text{Li}, 4\text{n})$ ,  $^{196,195,194}\text{Pt}(^6\text{Li}, 3\text{n})$ ,  $^{198}\text{Pt}(^6\text{Li}, 2\text{n})$ , E < 55 MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009PE19    NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, \text{xn})$   $^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn}$ ,  $^{209}\text{Bi}(^6\text{Li}, \text{X})$   $^{208}\text{Po} / ^{210}\text{Po}$ ,  $\text{Pt}(^6\text{Li}, \text{xn})$   $^{200}\text{Tl}$ ,  $^{198}\text{Pt}(^6\text{Li}, \text{X})$   $^{199}\text{Au}$ ,  $^{197}\text{Au}(^6\text{He}, \text{xn})$ ,  $^{206}\text{Pb}(^6\text{He}, 2\text{n})$   $^{210}\text{Po}$ , E=55 MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617
- $^{210}\text{Fr}$     2008HA39    NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , E=152 MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

## A=211

- $^{211}\text{Po}$       2009GA07      NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), E=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), E=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X}), E=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- 2009SA26      NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, \alpha)$ , E=36, 40 MeV; measured  $E\alpha$ ,  $I\alpha$ , Ed, Id, (charged-particle)(charged-particle)-coin,  $\sigma$ ,  $\sigma(\theta)$ ; deduced reaction mechanism features. Comparison with coupled-channel calculations. JOUR PYLBB 677 139
- $^{211}\text{At}$       2009AG10      NUCLEAR REACTIONS  $^{208}\text{Pb}(^8\text{Li}, 4n), (^8\text{Li}, 5n)$ , E(cm)=32.1, 33.0, 33.9, 34.8, 35.7, 36.6, 37.5 MeV;  $^{212}\text{At}$ ,  $^{211}\text{At}$ ; measured  $\alpha$  spectra, fusion-evaporation  $\sigma$ , and excitation functions. Pulsed beam. Comparison with barrier-potential model (BPM) calculations. JOUR PRVCA 80 044605
- 2009BA28      RADIOACTIVITY  $^{209,210,211}\text{At}$ ,  $^{213}\text{Rn}(\text{IT})$ ; measured  $E\gamma$ ,  $I\gamma$ . JOUR APOBB 40 889
- 2009GA07      NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), E=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), E=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X}), E=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605

A=211 (*continued*)

- $^{211}\text{Rn}$     2009GA07    NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), \text{E}=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), \text{E}=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X}), \text{E}=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- 2009GH04    NUCLEAR REACTIONS  $^{232}\text{Th}(^{14}\text{N}, \text{X})^{246}\text{Bk}$ , E(cm)=77.3 MeV;  $^{235}\text{U}(^{11}\text{B}, \text{X})^{246}\text{Bk}$ , E not given; measured mass and velocity distribution of fission fragments from the decay of compound nucleus  $^{246}\text{Bk}$  near and above the Coulomb barrier.  $^{197}\text{Au}(^{14}\text{N}, \text{X})^{211}\text{Rn}$ , E not given; measured mass distribution of fission fragments from compound nucleus and used as a reference for reactions producing  $^{246}\text{Bk}$  compound nucleus. JOUR PRVCA 79 054607
- 2009PE01    NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, 3\text{n}), (^6\text{Li}, 4\text{n}), (^6\text{Li}, 5\text{n}), (^6\text{Li}, 6\text{n}), ^{198,196,195}\text{Pt}(^6\text{Li}, 5\text{n}), ^{198,196,195,194}\text{Pt}(^6\text{Li}, 4\text{n}), ^{196,195,194}\text{Pt}(^6\text{Li}, 3\text{n}), ^{198}\text{Pt}(^6\text{Li}, 2\text{n}), \text{E} < 55$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009PE19    NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, \text{xn})^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn}, ^{209}\text{Bi}(^6\text{Li}, \text{X})^{208}\text{Po} / ^{210}\text{Po}, \text{Pt}(^6\text{Li}, \text{xn})^{200}\text{Tl}, ^{198}\text{Pt}(^6\text{Li}, \text{X})^{199}\text{Au}, ^{197}\text{Au}(^6\text{He}, \text{xn}), ^{206}\text{Pb}(^6\text{He}, 2\text{n})^{210}\text{Po}, \text{E}=55$  MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617
- $^{211}\text{Fr}$     2008HA39    NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X}), \text{E}=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}, ^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}; ^{205,207,209,211,213,215,217,219,221,223}\text{Fr}, ^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}, ^{198,199,200,201,202}\text{Bi}, ^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009DR04    NUCLEAR REACTIONS  $^{197}\text{Au}(^{16}\text{O}, 4\text{n}), \text{E}=88-95$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$ , conversion electrons, half-lives.  $^{209}\text{Fr}$ ; deduced levels, J,  $\pi$ , isomers, multipolarities, internal conversion coefficients, transition strengths, configurations.  $^{209,211,213}\text{Fr}$ ; systematics of yrast states. Comparison with shell-model predictions. JOUR PRVCA 79 054313
- $^{211}\text{Th}$     2008LA14    ATOMIC MASSES  $^{211,213,217,218}\text{Th}$ ; measured mass of Th sample to determine existence of long-lived isomers, upper limits of existence of isomers. JOUR PRVCA 78 064313
- 2009LAZV    RADIOACTIVITY  $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner

## A=212

- $^{212}\text{Pb}$  2009DR05 RADIOACTIVITY  $^{268}\text{Db}$ ,  $^{268}\text{Rf}(\alpha)$ , (SF); measured  $E\alpha$ ,  $I\alpha$  and SF events.  $^{212}\text{Bi}$ ,  $^{208,210,212,216}\text{Po}$ ,  $^{220}\text{Rn}$ ,  $^{224}\text{Ra}$ ,  $^{228,230}\text{Th}$ ,  $^{231}\text{Pa}$ ,  $^{237}\text{Np}$ ,  $^{238,239,240,241,242}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{243,244}\text{Cm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 054605
- $^{212}\text{Bi}$  2009DR05 RADIOACTIVITY  $^{268}\text{Db}$ ,  $^{268}\text{Rf}(\alpha)$ , (SF); measured  $E\alpha$ ,  $I\alpha$  and SF events.  $^{212}\text{Bi}$ ,  $^{208,210,212,216}\text{Po}$ ,  $^{220}\text{Rn}$ ,  $^{224}\text{Ra}$ ,  $^{228,230}\text{Th}$ ,  $^{231}\text{Pa}$ ,  $^{237}\text{Np}$ ,  $^{238,239,240,241,242}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{243,244}\text{Cm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 054605
- $^{212}\text{Po}$  2008MOZY RADIOACTIVITY  $^{212}\text{Po}(\alpha)$  [from  $^{228}\text{Th}$  decay]; measured  $T_{1/2}$ . CONF Moscow,P55,Morozov
- 2009DR05 RADIOACTIVITY  $^{268}\text{Db}$ ,  $^{268}\text{Rf}(\alpha)$ , (SF); measured  $E\alpha$ ,  $I\alpha$  and SF events.  $^{212}\text{Bi}$ ,  $^{208,210,212,216}\text{Po}$ ,  $^{220}\text{Rn}$ ,  $^{224}\text{Ra}$ ,  $^{228,230}\text{Th}$ ,  $^{231}\text{Pa}$ ,  $^{237}\text{Np}$ ,  $^{238,239,240,241,242}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{243,244}\text{Cm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 054605
- $^{212}\text{At}$  2009AG10 NUCLEAR REACTIONS  $^{208}\text{Pb}(^8\text{Li}, 4n)$ ,  $(^8\text{Li}, 5n)$ ,  $E(\text{cm})=32.1, 33.0, 33.9, 34.8, 35.7, 36.6, 37.5$  MeV;  $^{212}\text{At}$ ,  $^{211}\text{At}$ ; measured  $\alpha$  spectra, fusion-evaporation  $\sigma$ , and excitation functions. Pulsed beam. Comparison with barrier-potential model (BPM) calculations. JOUR PRVCA 80 044605
- 2009GA07 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ ,  $E(\text{cm})=52\text{-}72$  MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for  $(\text{xn})$ , summed  $\sigma$  for  $(\text{pxn})$ , summed  $\sigma$  for  $(\text{xn})$ , summed  $\sigma$  for  $(\alpha\text{xn})$ , summed  $\sigma$  for  $(\text{xn})$ ; deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})$ ,  $E=5\text{-}7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X})$ ,  $(^6\text{Li}, \text{X})$ ,  $E=3.9\text{-}7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X})$ ,  $E=7.5\text{-}9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- $^{212}\text{Rn}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(\text{M}1)$ ,  $B(\text{E}2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=212 (continued)**

- 2009GA07 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ ,  $E(\text{cm})=52\text{-}72$  MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})$ ,  $E=5\text{-}7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X})$ ,  $(^6\text{Li}, \text{X})$ ,  $E=3.9\text{-}7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X})$ ,  $E=7.5\text{-}9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- 2009PE01 NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, 3\text{n})$ ,  $(^6\text{Li}, 4\text{n})$ ,  $(^6\text{Li}, 5\text{n})$ ,  $(^6\text{Li}, 6\text{n})$ ,  $^{198,196,195}\text{Pt}(^6\text{Li}, 5\text{n})$ ,  $^{198,196,195,194}\text{Pt}(^6\text{Li}, 4\text{n})$ ,  $^{196,195,194}\text{Pt}(^6\text{Li}, 3\text{n})$ ,  $^{198}\text{Pt}(^6\text{Li}, 2\text{n})$ ,  $E < 55$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fusion evaporation excitation functions. Compared results to model calculations. JOUR JPGPE 36 025104
- 2009PE19 NUCLEAR REACTIONS  $^{209}\text{Bi}(^6\text{Li}, \text{xn})^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn}$ ,  $^{209}\text{Bi}(^6\text{Li}, \text{X})^{208}\text{Po} / ^{210}\text{Po}$ ,  $\text{Pt}(^6\text{Li}, \text{xn})^{200}\text{Tl}$ ,  $^{198}\text{Pt}(^6\text{Li}, \text{X})^{199}\text{Au}$ ,  $^{197}\text{Au}(^6\text{He}, \text{xn})$ ,  $^{206}\text{Pb}(^6\text{He}, 2\text{n})^{210}\text{Po}$ ,  $E=55$  MeV; measured reaction products,  $E\gamma$ ,  $I\gamma$ ; deduced  $\sigma$ . JOUR PANUE 72 1617
- $^{212}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ ,  $B(M1)$ ,  $B(E2)$ , magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=213**

- $^{213}\text{Bi}$  2009IN01 RADIOACTIVITY  $^{229\text{m}}\text{Th}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life. Search for 3.5-eV isomer in  $^{229}\text{Th}$  populated through nuclear excitation by electronic transition (NEET).  $^{229}\text{Th}$ ,  $^{225}\text{Ac}$ ,  $^{221}\text{Fr}$ ,  $^{217}\text{At}$ ,  $^{213}\text{Po}(\alpha)$ ; measured  $E\alpha$ .  $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313
- $^{213}\text{Po}$  2009IN01 RADIOACTIVITY  $^{229\text{m}}\text{Th}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life. Search for 3.5-eV isomer in  $^{229}\text{Th}$  populated through nuclear excitation by electronic transition (NEET).  $^{229}\text{Th}$ ,  $^{225}\text{Ac}$ ,  $^{221}\text{Fr}$ ,  $^{217}\text{At}$ ,  $^{213}\text{Po}(\alpha)$ ; measured  $E\alpha$ .  $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313

A=213 (continued)

- <sup>213</sup>At      2009GA07      NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>10</sup>B, X), (<sup>11</sup>B, X)<sup>209</sup>Rn / <sup>210</sup>Rn / <sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>213</sup>Ra / <sup>214</sup>Ra / <sup>215</sup>Ra / <sup>216</sup>Ra / <sup>217</sup>Ra / <sup>210</sup>Po / <sup>211</sup>Po / <sup>210</sup>At / <sup>211</sup>At / <sup>212</sup>At / <sup>213</sup>At / , E(cm)=52-72 MeV; measured E $\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for <sup>186</sup>W(<sup>30</sup>Si, X) reaction. <sup>209</sup>Bi(<sup>10</sup>B, X), (<sup>11</sup>B, X), E=5-7.5 MeV / nucleon; <sup>209</sup>Bi(<sup>7</sup>Li, X), (<sup>6</sup>Li, X), E=3.9-7.5 MeV / nucleon; <sup>209</sup>Bi( $\alpha$ , X), E=7.5-9.3 MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- <sup>213</sup>Rn      2009BA28      RADIOACTIVITY <sup>209,210,211</sup>At, <sup>213</sup>Rn(IT); measured E $\gamma$ , I $\gamma$ . JOUR APOBB 40 889
- 2009GA07      NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>10</sup>B, X), (<sup>11</sup>B, X)<sup>209</sup>Rn / <sup>210</sup>Rn / <sup>211</sup>Rn / <sup>212</sup>Rn / <sup>213</sup>Rn / <sup>213</sup>Ra / <sup>214</sup>Ra / <sup>215</sup>Ra / <sup>216</sup>Ra / <sup>217</sup>Ra / <sup>210</sup>Po / <sup>211</sup>Po / <sup>210</sup>At / <sup>211</sup>At / <sup>212</sup>At / <sup>213</sup>At / , E(cm)=52-72 MeV; measured E $\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for <sup>186</sup>W(<sup>30</sup>Si, X) reaction. <sup>209</sup>Bi(<sup>10</sup>B, X), (<sup>11</sup>B, X), E=5-7.5 MeV / nucleon; <sup>209</sup>Bi(<sup>7</sup>Li, X), (<sup>6</sup>Li, X), E=3.9-7.5 MeV / nucleon; <sup>209</sup>Bi( $\alpha$ , X), E=7.5-9.3 MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- <sup>213</sup>Fr      2008HA39      NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. <sup>202,204,206,208,210,212,214,216,218,220,222</sup>Rn; <sup>205,207,209,211,213,215,217,219,221,223</sup>Fr, <sup>206,208,210,212,214,216,218,220,222,224</sup>Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2008HE19      NUCLEAR REACTIONS <sup>206</sup>Pb(<sup>25</sup>Mg, X)<sup>214</sup>Ra / <sup>213</sup>Fr, E=5.9, 8.7 MeV / nucleon; measured reaction product velocity distributions; deduced fusion-evaporation and quasi-fission reaction mechanisms. JOUR IMPEE 17 2231
- 2009DR04      NUCLEAR REACTIONS <sup>197</sup>Au(<sup>16</sup>O, 4n), E=88-95 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(t)$ , conversion electrons, half-lives. <sup>209</sup>Fr; deduced levels, J,  $\pi$ , isomers, multipolarities, internal conversion coefficients, transition strengths, configurations. <sup>209,211,213</sup>Fr; systematics of yrast states. Comparison with shell-model predictions. JOUR PRVCA 79 054313

KEYNUMBERS AND KEYWORDS

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**A=213** (*continued*)

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| $^{213}\text{Ra}$ | 2009GA07 | NUCLEAR REACTIONS $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , $E(\text{cm})=52\text{-}72$ MeV; measured $E\alpha$ , $\sigma$ , complete fusion cross section, fission $\sigma$ , summed $\sigma$ for (xn), summed $\sigma$ for (pxn), summed $\sigma$ for (xn), summed $\sigma$ for ( $\alpha$ xn), summed $\sigma$ for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for $^{186}\text{W}(^{30}\text{Si}, \text{X})$ reaction. $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), E=5\text{-}7.5$ MeV / nucleon; $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), E=3.9\text{-}7.5$ MeV / nucleon; $^{209}\text{Bi}(\alpha, \text{X}), E=7.5\text{-}9.3$ MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605 |
|                   | 2009LAZV | RADIOACTIVITY $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner  |
| $^{213}\text{Th}$ | 2008LA14 | ATOMIC MASSES $^{211,213,217,218}\text{Th}$ ; measured mass of Th sample to determine existence of long-lived isomers, upper limits of existence of isomers. JOUR PRVCA 78 064313  |
|                   | 2009LAZV | RADIOACTIVITY $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner  |

**A=214**

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|-------------------|----------|---|
| $^{214}\text{Rn}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X}), E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}, ^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{214}\text{Fr}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X}), E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}, ^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{214}\text{Ra}$ | 2008HE19 | NUCLEAR REACTIONS $^{206}\text{Pb}(^{25}\text{Mg}, \text{X})^{214}\text{Ra} / ^{213}\text{Fr}, E=5.9, 8.7$ MeV / nucleon; measured reaction product velocity distributions; deduced fusion-evaporation and quasi-fission reaction mechanisms. JOUR IMPEE 17 2231  |

**A=214 (continued)**

- 2009GA07 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), E=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), E=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X}), E=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605
- 2009LAZV RADIOACTIVITY  $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner

**A=215**

- $^{215}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X}), E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}, ^{205,206,207}\text{Fr}$ ; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}, ^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}, ^{198,199,200,201,202}\text{Bi}, ^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009AP03 NUCLEAR REACTIONS  $^{197}\text{Au}(^{18}\text{O}, \text{X})^{215}\text{Fr}, E=77.7-96.7$  MeV;  $^{204}\text{Pb}(^{11}\text{B}, \text{X})^{215}\text{Fr}, E=51.5-63.5$  MeV; measured fission fragment angular distributions and anisotropies of the  $^{215}\text{Fr}$  compound nucleus; deduced fission excitation functions, fusion barrier distributions. Comparison with standard saddle-point statistical model (SSPSM) calculations. JOUR PRVCA 80 024603
- $^{215}\text{Ra}$  2009GA07 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , E(cm)=52-72 MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X}), (^{11}\text{B}, \text{X}), E=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X}), (^6\text{Li}, \text{X}), E=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X}), E=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605



**A=216**

- $^{216}\text{Po}$  2009DR05 RADIOACTIVITY  $^{268}\text{Db}$ ,  $^{268}\text{Rf}(\alpha)$ , (SF); measured  $E\alpha$ ,  $I\alpha$  and SF events.  $^{212}\text{Bi}$ ,  $^{208,210,212,216}\text{Po}$ ,  $^{220}\text{Rn}$ ,  $^{224}\text{Ra}$ ,  $^{228,230}\text{Th}$ ,  $^{231}\text{Pa}$ ,  $^{237}\text{Np}$ ,  $^{238,239,240,241,242}\text{Pu}$ ,  $^{241,243}\text{Am}$ ,  $^{243,244}\text{Cm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR PRVCA 79 054605
- $^{216}\text{Rn}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- $^{216}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- $^{216}\text{Ra}$  2009GA07 NUCLEAR REACTIONS  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ ,  $E(\text{cm})=52-72$  MeV; measured  $E\alpha$ ,  $\sigma$ , complete fusion cross section, fission  $\sigma$ , summed  $\sigma$  for (xn), summed  $\sigma$  for (pxn), summed  $\sigma$  for (xn), summed  $\sigma$  for ( $\alpha$ xn), summed  $\sigma$  for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for  $^{186}\text{W}(^{30}\text{Si}, \text{X})$  reaction.  $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ ,  $(^{11}\text{B}, \text{X})$ ,  $E=5-7.5$  MeV / nucleon;  $^{209}\text{Bi}(^7\text{Li}, \text{X})$ ,  $(^6\text{Li}, \text{X})$ ,  $E=3.9-7.5$  MeV / nucleon;  $^{209}\text{Bi}(\alpha, \text{X})$ ,  $E=7.5-9.3$  MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605

**A=217**

- $^{217}\text{At}$  2009IN01 RADIOACTIVITY  $^{229m}\text{Th}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ , half-life. Search for 3.5-eV isomer in  $^{229}\text{Th}$  populated through nuclear excitation by electronic transition (NEET).  $^{229}\text{Th}$ ,  $^{225}\text{Ac}$ ,  $^{221}\text{Fr}$ ,  $^{217}\text{At}$ ,  $^{213}\text{Po}(\alpha)$ ; measured  $E\alpha$ .  $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313
- $^{217}\text{Fr}$  2008HA39 NUCLEAR REACTIONS  $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ ,  $E=152$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{204}\text{At}$ ,  $^{205,206,207}\text{Fr}$ ; deduced levels,  $J$ ,  $\pi$ , B(M1), B(E2), magnetic rotational bands.  $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ;  $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ ,  $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics.  $^{205}\text{Rn}$ ,  $^{198,199,200,201,202}\text{Bi}$ ,  $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319

KEYNUMBERS AND KEYWORDS

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**A=217 (continued)**

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| $^{217}\text{Ra}$ | 2009GA07 | NUCLEAR REACTIONS $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ , $(^{11}\text{B}, \text{X})^{209}\text{Rn} / ^{210}\text{Rn} / ^{211}\text{Rn} / ^{212}\text{Rn} / ^{213}\text{Rn} / ^{213}\text{Ra} / ^{214}\text{Ra} / ^{215}\text{Ra} / ^{216}\text{Ra} / ^{217}\text{Ra} / ^{210}\text{Po} / ^{211}\text{Po} / ^{210}\text{At} / ^{211}\text{At} / ^{212}\text{At} / ^{213}\text{At} /$ , $E(\text{cm})=52\text{-}72$ MeV; measured $E\alpha$ , $\sigma$ , complete fusion cross section, fission $\sigma$ , summed $\sigma$ for (xn), summed $\sigma$ for (pxn), summed $\sigma$ for (xn), summed $\sigma$ for ( $\alpha$ xn), summed $\sigma$ for (xn); deduced complete fusion suppression factors and approximate fraction of incomplete fusion as a function of breakup threshold. Comparisons with cross sections for $^{186}\text{W}(^{30}\text{Si}, \text{X})$ reaction. $^{209}\text{Bi}(^{10}\text{B}, \text{X})$ , $(^{11}\text{B}, \text{X})$ , $E=5\text{-}7.5$ MeV / nucleon; $^{209}\text{Bi}(^7\text{Li}, \text{X})$ , $(^6\text{Li}, \text{X})$ , $E=3.9\text{-}7.5$ MeV / nucleon; $^{209}\text{Bi}(\alpha, \text{X})$ , $E=7.5\text{-}9.3$ MeV / nucleon; deduced empirical fission probabilities. Single-barrier penetration model (SBPM) calculations using Sao Paulo potential of fusion process without breakup, and statistical model calculations. JOUR PRVCA 79 034605 |
| $^{217}\text{Th}$ | 2008LA14 | ATOMIC MASSES $^{211,213,217,218}\text{Th}$ ; measured mass of Th sample to determine existence of long-lived isomers, upper limits of existence of isomers. JOUR PRVCA 78 064313  |
|                   | 2009LAZV | RADIOACTIVITY $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner  |

**A=218**

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|-------------------|----------|---|
| $^{218}\text{Rn}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , $E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{218}\text{Fr}$ | 2008HA39 | NUCLEAR REACTIONS $^{181}\text{Ta}(^{30}\text{Si}, \text{X})$ , $E=152$ MeV; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin. $^{204}\text{At}$ , $^{205,206,207}\text{Fr}$ ; deduced levels, J, $\pi$ , B(M1), B(E2), magnetic rotational bands. $^{202,204,206,208,210,212,214,216,218,220,222}\text{Rn}$ ; $^{205,207,209,211,213,215,217,219,221,223}\text{Fr}$ , $^{206,208,210,212,214,216,218,220,222,224}\text{Fr}$ ; energy systematics. $^{205}\text{Rn}$ , $^{198,199,200,201,202}\text{Bi}$ , $^{197,198,199,200,201}\text{Pb}$ ; systematics of spin and rotational energy. JOUR PRVCA 78 054319 |
| $^{218}\text{Th}$ | 2008LA14 | ATOMIC MASSES $^{211,213,217,218}\text{Th}$ ; measured mass of Th sample to determine existence of long-lived isomers, upper limits of existence of isomers. JOUR PRVCA 78 064313   |
|                   | 2009LAZV | RADIOACTIVITY $^{211,213,217,218}\text{Th}(\alpha)$ ; measured yields using time-of-flight spectrometer. Search for long-lived K-isomeric transitions; only upper limit given. REPT MLL 2008 Annual,P27,Lachner   |

**A=219**

- <sup>219</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- <sup>219</sup>Th 2009RE09 NUCLEAR REACTIONS <sup>198</sup>Pt(<sup>26</sup>Mg, 5n), E=128 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma$ (linear pol). <sup>219</sup>Th; deduced levels, J,  $\pi$ , bands and Quadrupole-octupole collectivity. Comparison with level structure of <sup>217</sup>Ra. JOUR PRVCA 80 011304

**A=220**

- <sup>220</sup>Rn 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009DR05 RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- 2009NE03 ATOMIC MASSES <sup>220,223,224,225,226,227,228,229</sup>Rn; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
- <sup>220</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=221**

- <sup>221</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009IN01 RADIOACTIVITY <sup>229m</sup>Th( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. Search for 3.5-eV isomer in <sup>229</sup>Th populated through nuclear excitation by electronic transition (NEET). <sup>229</sup>Th, <sup>225</sup>Ac, <sup>221</sup>Fr, <sup>217</sup>At, <sup>213</sup>Po( $\alpha$ ); measured E $\alpha$ . <sup>225,227,229,231,233</sup>Th; level systematics. JOUR PRVCA 79 034313

**A=222**

- <sup>222</sup>Rn 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- 2009REZZ RADIOACTIVITY <sup>40</sup>K( $\beta^-$ ), <sup>137</sup>Cs( $\beta^-$ ), <sup>210</sup>Pb( $\beta^-$ ), <sup>226</sup>Ra( $\alpha$ ), <sup>232</sup>Th( $\alpha$ ), <sup>238</sup>U( $\alpha$ ); measured E $\gamma$ , I $\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156, Reyes
- <sup>222</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=223**

- <sup>223</sup>Rn 2009NE03 ATOMIC MASSES <sup>220,223,224,225,226,227,228,229</sup>Rn; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
- <sup>223</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319

**A=224**

- <sup>224</sup>Rn 2009NE03 ATOMIC MASSES <sup>220,223,224,225,226,227,228,229</sup>Rn; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
- <sup>224</sup>Fr 2008HA39 NUCLEAR REACTIONS <sup>181</sup>Ta(<sup>30</sup>Si, X), E=152 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin. <sup>204</sup>At, <sup>205,206,207</sup>Fr; deduced levels, J,  $\pi$ , B(M1), B(E2), magnetic rotational bands. 202,204,206,208,210,212,214,216,218,220,222Rn; 205,207,209,211,213,215,217,219,221,223Fr, 206,208,210,212,214,216,218,220,222,224Fr; energy systematics. <sup>205</sup>Rn, <sup>198,199,200,201,202</sup>Bi, <sup>197,198,199,200,201</sup>Pb; systematics of spin and rotational energy. JOUR PRVCA 78 054319
- <sup>224</sup>Ra 2009DR05 RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- <sup>224</sup>Th 2009LI45 NUCLEAR REACTIONS <sup>58</sup>Ni, <sup>208</sup>Pb(<sup>17</sup>F, p), E=10 MeV / nucleon; measured Ep, Ip, (fragment)p-coin,  $\sigma(\theta)$  using silicon strip detectors. Comparison with first-order perturbation and dynamical calculations and effect of dynamic polarization discussed. JOUR PYLBB 681 22

KEYNUMBERS AND KEYWORDS

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**A=225**

$^{225}\text{Rn}$	2009NE03	ATOMIC MASSES $^{220,223,224,225,226,227,228,229}\text{Rn}$ ; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
$^{225}\text{Ra}$	2009IN01	RADIOACTIVITY $^{229m}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313
$^{225}\text{Ac}$	2009IN01	RADIOACTIVITY $^{229m}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313
$^{225}\text{Th}$	2009IN01	RADIOACTIVITY $^{229m}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313

**A=226**

$^{226}\text{Rn}$	2009NE03	ATOMIC MASSES $^{220,223,224,225,226,227,228,229}\text{Rn}$ ; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
$^{226}\text{Ra}$	2009DR05	RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605
	2009REZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes

**A=227**

$^{227}\text{Rn}$	2009NE03	ATOMIC MASSES $^{220,223,224,225,226,227,228,229}\text{Rn}$ ; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
$^{227}\text{Ac}$	2009DR05	RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605
$^{227}\text{Th}$	2009IN01	RADIOACTIVITY $^{229m}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313

KEYNUMBERS AND KEYWORDS

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**A=228**

- <sup>228</sup>Rn    2009NE03    ATOMIC MASSES <sup>220,223,224,225,226,227,228,229</sup>Rn; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
- <sup>228</sup>Ra    2009REZZ    RADIOACTIVITY <sup>40</sup>K( $\beta^-$ ), <sup>137</sup>Cs( $\beta^-$ ), <sup>210</sup>Pb( $\beta^-$ ), <sup>226</sup>Ra( $\alpha$ ), <sup>232</sup>Th( $\alpha$ ), <sup>238</sup>U( $\alpha$ ); measured E $\gamma$ , I $\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes
- 2009SIZZ    RADIOACTIVITY <sup>40</sup>K( $\beta^-$ ), <sup>238</sup>U( $\alpha$ ), <sup>232</sup>Th( $\alpha$ ); measured E $\gamma$ , I $\gamma$ ; deduced soil natural activities. CONF Brazil (Nuclear Physics 2008) Proc. P153,Silveira
- <sup>228</sup>Th    2008LEZS    NUCLEAR REACTIONS <sup>230,232,234</sup>Th, <sup>184,186</sup>W(p, t), E not given; measured Et, It; deduced Q-values. CONF Moscow,P78,Levon
- 2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605

**A=229**

- <sup>229</sup>Rn    2009NE03    ATOMIC MASSES <sup>220,223,224,225,226,227,228,229</sup>Rn; measured masses using ISOLTRAP mass spectrometer. JOUR PRLTA 102 112501
- <sup>229</sup>Th    2009IN01    RADIOACTIVITY <sup>229m</sup>Th( $\alpha$ ); measured E $\alpha$ , I $\alpha$ , half-life. Search for 3.5-eV isomer in <sup>229</sup>Th populated through nuclear excitation by electronic transition (NEET). <sup>229</sup>Th, <sup>225</sup>Ac, <sup>221</sup>Fr, <sup>217</sup>At, <sup>213</sup>Po( $\alpha$ ); measured E $\alpha$ . <sup>225,227,229,231,233</sup>Th; level systematics. JOUR PRVCA 79 034313
- 2009KI14    RADIOACTIVITY <sup>233</sup>U( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . <sup>229m</sup>Th; deduced half-life. JOUR PRVCA 80 034315

**A=230**

- <sup>230</sup>Th    2008LEZS    NUCLEAR REACTIONS <sup>230,232,234</sup>Th, <sup>184,186</sup>W(p, t), E not given; measured Et, It; deduced Q-values. CONF Moscow,P78,Levon
- 2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- 2009LE03    NUCLEAR REACTIONS <sup>232</sup>Th(p, t), E=25 MeV; measured triton spectra, angular distributions. <sup>230</sup>Th; deduced levels, J,  $\pi$ ,  $\sigma$ . Coupled-channel and Distorted-wave Born approximation (DWBA) analyses. Comparison with interacting boson model and quasiparticle-phonon model calculations. JOUR PRVCA 79 014318
- <sup>230</sup>Pa    2008KOZU    NUCLEAR REACTIONS <sup>231</sup>Pa(d, p), <sup>231</sup>Pa(d, t), E=22 MeV; measured Ep, Ip, Et, It using polarized d beam and Q3D spectrometer; deduced  $\sigma(\theta, J, \pi)$ . REPT MLL 2007 Annual,P20,Kotthaus

KEYNUMBERS AND KEYWORDS

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**A=231**

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| $^{231}\text{Th}$ | 2009G028 | NUCLEAR REACTIONS $^{230}\text{Th}(n, f)$ , $E=220$ keV-25 MeV; $^{231}\text{Th}(n, f)$ , $E=360$ keV-10 MeV; measured fission fragments, $\sigma$ using surrogate ratio method. Comparison with previous measurements and evaluations. $^{232}\text{Th}$ , $^{236}\text{U}(^3\text{He}, ^3\text{He}')$ , $(^3\text{He}, \alpha)$ , $E=42$ MeV; measured particle spectra, and relative fission decay probability in surrogate reactions. JOUR PRVCA 80 044610 |
|                   | 2009IN01 | RADIOACTIVITY $^{229m}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313  |
| $^{231}\text{Pa}$ | 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605                                |

**A=232**

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| $^{232}\text{Th}$ | 2008DEZV | NUCLEAR REACTIONS $^{232}\text{Th}(n, n'\gamma)$ , $E=\text{fast}$ ; measured $E\gamma$ , $I\gamma(\theta)$ ; $^{232}\text{Th}$ ; deduced $\delta$ , rotational bands. CONF Moscow,P83,Demidov   |
|                   | 2008LEZS | NUCLEAR REACTIONS $^{230,232,234}\text{Th}$ , $^{184,186}\text{W}(p, t)$ , $E$ not given; measured $E_t$ , $I_t$ ; deduced Q-values. CONF Moscow,P78,Levon   |
|                   | 2009G028 | NUCLEAR REACTIONS $^{230}\text{Th}(n, f)$ , $E=220$ keV-25 MeV; $^{231}\text{Th}(n, f)$ , $E=360$ keV-10 MeV; measured fission fragments, $\sigma$ using surrogate ratio method. Comparison with previous measurements and evaluations. $^{232}\text{Th}$ , $^{236}\text{U}(^3\text{He}, ^3\text{He}')$ , $(^3\text{He}, \alpha)$ , $E=42$ MeV; measured particle spectra, and relative fission decay probability in surrogate reactions. JOUR PRVCA 80 044610 |
|                   | 2009REZZ | RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes   |
|                   | 2009SIZZ | RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{238}\text{U}(\alpha)$ , $^{232}\text{Th}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced soil natural activities. CONF Brazil (Nuclear Physics 2008) Proc. P153,Silveira   |
| $^{232}\text{Pa}$ | 2008K0ZU | NUCLEAR REACTIONS $^{231}\text{Pa}(d, p)$ , $^{231}\text{Pa}(d, t)$ , $E=22$ MeV; measured $E_p$ , $I_p$ , $E_t$ , $I_t$ using polarized d beam and Q3D spectrometer; deduced $\sigma(\theta, J, \pi)$ . REPT MLL 2007 Annual,P20,Kotthaus   |
| $^{232}\text{U}$  | 2007CSZZ | NUCLEAR REACTIONS $^{231}\text{Pa}(^3\text{He}, dF)$ , $E=38.1$ MeV; $^{232}\text{U}$ ; measured fission fragments; deduced $\sigma(q)$ , fission probability spectrum, triple-humped fission barrier. Comparison with JWKB calculations. REPT ATOMKI 2007 Annual,P32,Csige  |
|                   | 2009CS01 | NUCLEAR REACTIONS $^{231}\text{Pa}(^3\text{He}, dF)$ , $E=38.1$ MeV; measured $E_d$ , (fission)(deuteron)-coin, angular distribution of fission fragments and fission probability. $^{232}\text{U}$ ; deduced barrier parameters, hyperdeformed fission resonances, third potential well and rotational band parameters. JOUR PRVCA 80 011301  |

KEYNUMBERS AND KEYWORDS

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**A=233**

$^{233}\text{Th}$	2007CSZY	NUCLEAR REACTIONS $^{232}\text{Th}(\text{d}, \text{pF})$ , $E=13$ MeV; $^{233}\text{Th}$ ; measured fission fragments; deduced $\sigma(\text{q})$ , fission probability spectrum. Comparison with previous results. REPT ATOMKI 2007 Annual,P33,Csatlos
	2008DE31	RADIOACTIVITY $^{233}\text{Th}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , X-rays; deduced ICC, logft. JOUR ARISE 66 1999
	2009IN01	RADIOACTIVITY $^{229\text{m}}\text{Th}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , half-life. Search for 3.5-eV isomer in $^{229}\text{Th}$ populated through nuclear excitation by electronic transition (NEET). $^{229}\text{Th}$ , $^{225}\text{Ac}$ , $^{221}\text{Fr}$ , $^{217}\text{At}$ , $^{213}\text{Po}(\alpha)$ ; measured $E\alpha$ . $^{225,227,229,231,233}\text{Th}$ ; level systematics. JOUR PRVCA 79 034313
$^{233}\text{Pa}$	2008DE31	RADIOACTIVITY $^{233}\text{Th}(\beta^-)$ ; measured $E\gamma$ , $I\gamma$ , X-rays; deduced ICC, logft. JOUR ARISE 66 1999
	2009DR05	RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605
$^{233}\text{U}$	2009KI14	RADIOACTIVITY $^{233}\text{U}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . $^{229\text{m}}\text{Th}$ ; deduced half-life. JOUR PRVCA 80 034315

**A=234**

$^{234}\text{Th}$	2009REZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ , $^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes
	2009SIZZ	RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{238}\text{U}(\alpha)$ , $^{232}\text{Th}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced soil natural activities. CONF Brazil (Nuclear Physics 2008) Proc. P153,Silveira
$^{234}\text{Pa}$	2008NA27	NUCLEAR REACTIONS $^{232}\text{Th}({}^6\text{Li}, \alpha)$ , $({}^6\text{Li}, \text{d})$ , $E=38.0$ MeV; measured fission spectra, charged particle spectra. $^{233}\text{Pa}(\text{n}, \text{F})$ , $E=11.5-16.5$ MeV; deduced fission $\sigma$ . Comparison with predictions of EMPIRE code. JOUR PRVCA 78 061602
$^{234}\text{U}$	2007HUZW	NUCLEAR REACTIONS $^{235,238}\text{U}(\text{n}, 2\text{n}\gamma)$ , $E = 6-14$ MeV; measured $E\gamma$ , $\gamma$ ; deduced partial $\sigma$ . REPT TUNL-XLVI,P88,Hutcheson
	2008HUZW	NUCLEAR REACTIONS $^{235,238}\text{U}(\text{n}, \text{n}'\gamma)$ , $^{235,238}\text{U}(\text{n}, 2\text{n}\gamma)$ , $E=5-14$ MeV; measured $E\gamma$ , $I\gamma$ using clover and planar HPGe; deduced excitation function.compared with Hauser-Feshbach model (codes GNASH and TALYS). REPT TUNL-XLII,P84,Hutcheson
	2009DR05	RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605



KEYNUMBERS AND KEYWORDS

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**A=235**

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| $^{235}\text{U}$ | 2008HUZW | NUCLEAR REACTIONS $^{235,238}\text{U}(\text{n}, \text{n}'\gamma)$ , $^{235,238}\text{U}(\text{n}, 2\text{n}\gamma)$ , E=5-14MeV; measured $E\gamma$ , $I\gamma$ using clover and planar HPGe; deduced excitation function.compared with Hauser-Feshbach model (codes GNASH and TALYS). REPT TUNL-XLII,P84,Hutcheson   |
|                  | 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605   |
|                  | 2009G028 | NUCLEAR REACTIONS $^{230}\text{Th}(\text{n}, \text{f})$ , E=220 keV-25 MeV; $^{231}\text{Th}(\text{n}, \text{f})$ , E=360 keV-10 MeV; measured fission fragments, $\sigma$ using surrogate ratio method. Comparison with previous measurements and evaluations. $^{232}\text{Th}$ , $^{236}\text{U}(\text{}^3\text{He}, \text{}^3\text{He}')$ , ( $^3\text{He}, \alpha$ ), E=42 MeV; measured particle spectra, and relative fission decay probability in surrogate reactions. JOUR PRVCA 80 044610 |

**A=236**

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| $^{236}\text{Th}$ | 2007ISZY | NUCLEAR REACTIONS $^{238}\text{U}$ , $^{244}\text{Pu}(\text{}^{18}\text{O}, \text{}^{20}\text{Ne})$ , E not given; measured $E\gamma$ , $I\gamma$ , E(particle); deduced J, $\pi$ , rotational bands of $^{236}\text{Th}$ and $^{242}\text{U}$ . REPT JAEA-Review 2007-046,P40,Ishii  |
| $^{236}\text{U}$  | 2008NA27 | NUCLEAR REACTIONS $^{232}\text{Th}(\text{}^6\text{Li}, \alpha)$ , ( $^6\text{Li}, \text{d}$ ), E=38.0 MeV; measured fission spectra, charged particle spectra. $^{233}\text{Pa}(\text{n}, \text{F})$ , E=11.5-16.5 MeV; deduced fission $\sigma$ . Comparison with predictions of EMPIRE code. JOUR PRVCA 78 061602   |
|                   | 2009AL13 | NUCLEAR REACTIONS $^{235}\text{U}(\text{d}, \text{p}\gamma)$ , ( $\text{d}, \text{pf}$ ), E=21 MeV; measured $E\gamma$ , $I\gamma$ , proton spectra, fission spectra, $\sigma$ . Internal surrogate ratio method (ISRM). Model-independent method used for measurement of $\gamma$ -channel yield. JOUR PRVCA 79 054610   |
|                   | 2009C002 | NUCLEAR REACTIONS $^{239}\text{Pu}(\text{n}, \alpha)$ , E=0.001 eV-2 MeV; measured neutron spectra, n- $\gamma$ coin, time-of-flight method. $^{240}\text{Pu}$ ; deduced levels, resonance energies. JOUR PRVCA 79 017603   |
|                   | 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605   |
|                   | 2009G028 | NUCLEAR REACTIONS $^{230}\text{Th}(\text{n}, \text{f})$ , E=220 keV-25 MeV; $^{231}\text{Th}(\text{n}, \text{f})$ , E=360 keV-10 MeV; measured fission fragments, $\sigma$ using surrogate ratio method. Comparison with previous measurements and evaluations. $^{232}\text{Th}$ , $^{236}\text{U}(\text{}^3\text{He}, \text{}^3\text{He}')$ , ( $^3\text{He}, \alpha$ ), E=42 MeV; measured particle spectra, and relative fission decay probability in surrogate reactions. JOUR PRVCA 80 044610 |

**A=237**

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| $^{237}\text{U}$ | 2007HUZW | NUCLEAR REACTIONS $^{235,238}\text{U}(\text{n}, 2\text{n}\gamma)$ , E = 6-14 MeV; measured $E\gamma$ , $\gamma$ ; deduced partial $\sigma$ . REPT TUNL-XLVI,P88,Hutcheson |
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KEYNUMBERS AND KEYWORDS

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**A=237 (continued)**

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| 2008HUZW                   | NUCLEAR REACTIONS $^{235,238}\text{U}(n, n'\gamma)$ , $^{235,238}\text{U}(n, 2n\gamma)$ ,<br>E=5-14MeV; measured $E\gamma$ , $I\gamma$ using clover and planar HPGe; deduced<br>excitation function.compared with Hauser-Feshbach model (codes<br>GNASH and TALYS). REPT TUNL-XLII,P84,Hutcheson   |
| 2009DR05                   | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF<br>events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ ,<br>$^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR<br>PRVCA 79 054605 |
| 2009HU09                   | NUCLEAR REACTIONS $^{238}\text{U}(n, n'\gamma)$ , $(n, 2n\gamma)$ , E=5-14 MeV;<br>measured $E\gamma$ , yields, $\sigma$ and excitation functions. Comparison with<br>existing data and calculations using the GNASH and TALYS<br>Hauser-Feshbach statistical-model codes. JOUR PRVCA 80 014603  |
| $^{237}\text{Np}$ 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF<br>events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ ,<br>$^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR<br>PRVCA 79 054605 |
| $^{237}\text{Pu}$ 2008MOZW | NUCLEAR REACTIONS $^{235}\text{U}(\alpha, 2n)$ , E not given; measured $I\gamma$ , $E\gamma$ ;<br>deduced $^{237}\text{Pu}$ J, $\pi$ , isomers, deformation, magic neutron number<br>N=146. REPT MLL 2007 Annual,P22,Morgan  |

**A=238**

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| $^{238}\text{U}$ 2008HAZV | NUCLEAR REACTIONS $^{238}\text{U}(\gamma, \gamma')$ , E=2.94-4.40 MeV; measured<br>$E\gamma$ , $I\gamma$ ; deduced level properties, resonance widths. REPT<br>TUNL-XLII,P122,Hammond  |
| 2008HUZW                  | NUCLEAR REACTIONS $^{235,238}\text{U}(n, n'\gamma)$ , $^{235,238}\text{U}(n, 2n\gamma)$ ,<br>E=5-14MeV; measured $E\gamma$ , $I\gamma$ using clover and planar HPGe; deduced<br>excitation function.compared with Hauser-Feshbach model (codes<br>GNASH and TALYS). REPT TUNL-XLII,P84,Hutcheson   |
| 2009DR05                  | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF<br>events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ ,<br>$^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR<br>PRVCA 79 054605 |
| 2009HU09                  | NUCLEAR REACTIONS $^{238}\text{U}(n, n'\gamma)$ , $(n, 2n\gamma)$ , E=5-14 MeV;<br>measured $E\gamma$ , yields, $\sigma$ and excitation functions. Comparison with<br>existing data and calculations using the GNASH and TALYS<br>Hauser-Feshbach statistical-model codes. JOUR PRVCA 80 014603  |
| 2009REZZ                  | RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{137}\text{Cs}(\beta^-)$ , $^{210}\text{Pb}(\beta^-)$ , $^{226}\text{Ra}(\alpha)$ ,<br>$^{232}\text{Th}(\alpha)$ , $^{238}\text{U}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ; deduced activities in marine<br>sediments. CONF Brazil (Nuclear Physics 2008) Proc. P156,Reyes   |
| 2009R021                  | NUCLEAR REACTIONS $^{238}\text{U}(n, n')$ , E=5-120 eV; measured $E_n$ , $I_n$ ;<br>deduced 36.68-eV resonance, scattering probability, $\sigma$ . Comparison<br>with ENDF / B-VII.0 library. JOUR KPSJA 55 1389   |
| 2009SIZZ                  | RADIOACTIVITY $^{40}\text{K}(\beta^-)$ , $^{238}\text{U}(\alpha)$ , $^{232}\text{Th}(\alpha)$ ; measured $E\gamma$ , $I\gamma$ ;<br>deduced soil natural activities. CONF Brazil (Nuclear Physics 2008)<br>Proc. P153,Silveira   |

KEYNUMBERS AND KEYWORDS

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**A=238 (continued)**

- <sup>238</sup>Np    2009HA10    NUCLEAR REACTIONS <sup>237</sup>Np(n, γ), E=fast; measured Eγ, Iγ, cross sections using the activation technique. Comparison with evaluated databases. JOUR JNSTA 46 460
- <sup>238</sup>Pu    2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf(α), (SF); measured Eα, Iα and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm(α); measured Eα, Iα. JOUR PRVCA 79 054605

**A=239**

- <sup>239</sup>Np    2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf(α), (SF); measured Eα, Iα and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm(α); measured Eα, Iα. JOUR PRVCA 79 054605
- <sup>239</sup>Pu    2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf(α), (SF); measured Eα, Iα and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm(α); measured Eα, Iα. JOUR PRVCA 79 054605

**A=240**

- <sup>240</sup>U    2009LAZW    RADIOACTIVITY <sup>244</sup>Pu(α); measured Eα from bastnaesit using time-of-flight spectrometer. Search for possible trace of Pu as primordial actinide; no event attributable to <sup>244</sup>Pu found. REPT MLL 2008 Annual,P26,Lachner
- <sup>240</sup>Pu    2009C002    NUCLEAR REACTIONS <sup>239</sup>Pu(n, α), E=0.001 eV-2 MeV; measured neutron spectra, n-γ coin, time-of-flight method. <sup>240</sup>Pu; deduced levels, resonance energies. JOUR PRVCA 79 017603
- 2009DR05    RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf(α), (SF); measured Eα, Iα and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm(α); measured Eα, Iα. JOUR PRVCA 79 054605
- 2009WA04    NUCLEAR REACTIONS <sup>240</sup>Pu(<sup>208</sup>Pb, <sup>208</sup>Pb'), E=1300 MeV; measured Eγ, Iγ, γγ-coin. <sup>240</sup>Pu; deduced levels, J, π. JOUR PRLTA 102 122501
- <sup>240</sup>Am    2007TOZY    NUCLEAR REACTIONS <sup>241</sup>Am(n, 2n), E = 7.6 - 14.5 MeV; measured Eγ, γ, neutron activation; deduced σ. Comparison with evaluated libraries. REPT TUNL-XLVI,P86,Tonchev
- 2008TOZY    NUCLEAR REACTIONS <sup>241</sup>Am(γ, n), E≈ threshold-16 MeV; measured Iγ, Eγ; deduced σ using activation technique. Compared to GNASH calculation. REPT TUNL-XLII,P124,Tonchev

KEYNUMBERS AND KEYWORDS

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**A=241**

- <sup>241</sup>Pu      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- <sup>241</sup>Am      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605

**A=242**

- <sup>242</sup>U      2007ISZY      NUCLEAR REACTIONS <sup>238</sup>U, <sup>244</sup>Pu(<sup>18</sup>O, <sup>20</sup>Ne), E not given; measured E $\gamma$ , I $\gamma$ , E(particle); deduced J,  $\pi$ , rotational bands of <sup>236</sup>Th and <sup>242</sup>U. REPT JAEA-Review 2007-046,P40,Ishii
- <sup>242</sup>Pu      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605

**A=243**

- <sup>243</sup>Am      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- <sup>243</sup>Cm      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605
- <sup>243</sup>Cf      2009DR02      RADIOACTIVITY <sup>263</sup>Hs, <sup>259</sup>Sg, <sup>255</sup>Rf, <sup>251</sup>No, <sup>247</sup>Fm( $\alpha$ ); measured E $\alpha$ , half-lives. JOUR PRVCA 79 011602

**A=244**

- <sup>244</sup>Pu      2009LAZW      RADIOACTIVITY <sup>244</sup>Pu( $\alpha$ ); measured E $\alpha$  from bastnaesit using time-of-flight spectrometer. Search for possible trace of Pu as primordial actinide; no event attributable to <sup>244</sup>Pu found. REPT MLL 2008 Annual,P26,Lachner
- <sup>244</sup>Cm      2009DR05      RADIOACTIVITY <sup>268</sup>Db, <sup>268</sup>Rf( $\alpha$ ), (SF); measured E $\alpha$ , I $\alpha$  and SF events. <sup>212</sup>Bi, <sup>208,210,212,216</sup>Po, <sup>220</sup>Rn, <sup>224</sup>Ra, <sup>228,230</sup>Th, <sup>231</sup>Pa, <sup>237</sup>Np, <sup>238,239,240,241,242</sup>Pu, <sup>241,243</sup>Am, <sup>243,244</sup>Cm( $\alpha$ ); measured E $\alpha$ , I $\alpha$ . JOUR PRVCA 79 054605

KEYNUMBERS AND KEYWORDS

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**A=245**

<sup>245</sup>Es      2009HE20      RADIOACTIVITY <sup>249</sup>Md, <sup>253</sup>Lr, <sup>257,258</sup>Db, <sup>259,260</sup>Sg, <sup>262</sup>Bh, <sup>265</sup>Hs( $\alpha$ ), (SF), (EC); measured E $\alpha$ , I $\alpha$ , T<sub>1/2</sub>; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=246**

<sup>246</sup>Pu      2008MAZO      NUCLEAR REACTIONS <sup>244</sup>Pu(<sup>18</sup>O, <sup>16</sup>O), E=162 MeV; measured E(particle), E $\gamma$ , I $\gamma$ , particle- $\gamma$ -coin.; deduced J,  $\pi$ , rotational band in <sup>246</sup>Pu. Compared experimental and calculated E(2<sup>+</sup>) energies of even-even actinide nuclei. REPT JAEA-Review 2008-054,P36,Makii

<sup>246</sup>Bk      2009GH04      NUCLEAR REACTIONS <sup>232</sup>Th(<sup>14</sup>N, X)<sup>246</sup>Bk, E(cm)=77.3 MeV; <sup>235</sup>U(<sup>11</sup>B, X)<sup>246</sup>Bk, E not given; measured mass and velocity distribution of fission fragments from the decay of compound nucleus <sup>246</sup>Bk near and above the Coulomb barrier. <sup>197</sup>Au(<sup>14</sup>N, X)<sup>211</sup>Rn, E not given; measured mass distribution of fission fragments from compound nucleus and used as a reference for reactions producing <sup>246</sup>Bk compound nucleus. JOUR PRVCA 79 054607

<sup>246</sup>Es      2008AN16      RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured E $\alpha$ , I $\alpha$ , conversion electrons, E $\gamma$ , I $\gamma$ ,  $\gamma$ a-, (ce)a-coin, T<sub>1/2</sub>. <sup>250</sup>Md; deduced levels, J,  $\pi$ , T<sub>1/2</sub>. JOUR ZAANE 38 219

                 2009NE02      RADIOACTIVITY <sup>266</sup>Mt, <sup>262</sup>Bh, <sup>258</sup>Db, <sup>254</sup>Lr, No, <sup>250</sup>Md, Fm( $\alpha$ ), <sup>254</sup>Lr, <sup>250</sup>Md(EC); measured E $\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605

**A=247**

<sup>247</sup>Es      2008AN16      RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured E $\alpha$ , I $\alpha$ , conversion electrons, E $\gamma$ , I $\gamma$ ,  $\gamma$ a-, (ce)a-coin, T<sub>1/2</sub>. <sup>250</sup>Md; deduced levels, J,  $\pi$ , T<sub>1/2</sub>. JOUR ZAANE 38 219

<sup>247</sup>Fm      2009DR02      RADIOACTIVITY <sup>263</sup>Hs, <sup>259</sup>Sg, <sup>255</sup>Rf, <sup>251</sup>No, <sup>247</sup>Fm( $\alpha$ ); measured E $\alpha$ , half-lives. JOUR PRVCA 79 011602

                 2009F002      RADIOACTIVITY <sup>259</sup>Sg, <sup>258</sup>Sg, <sup>255</sup>Rf( $\alpha$ ), (SF), (EC), <sup>251</sup>No( $\alpha$ ); measured E $\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602

**A=248**

<sup>248</sup>Cm      2009RZ01      RADIOACTIVITY <sup>248</sup>Cm(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma(\theta)$ ,  $\gamma(\text{lin pol})$ . <sup>92,94,96</sup>Sr; deduced levels, J,  $\pi$ , multipolarity, bands, configurations. Comparison with shell-model calculations. JOUR PRVCA 79 024319

                 2009UR02      RADIOACTIVITY <sup>248</sup>Cm, <sup>252</sup>Cf(SF); measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ , half-lives. <sup>95</sup>Y; deduced levels, J,  $\pi$ , isomers, configurations. Comparisons with shell-model calculations. JOUR PRVCA 79 044304

**A=248 (continued)**

- 2009UR03 RADIOACTIVITY  $^{248}\text{Cm}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{103}\text{Zr}$ ; deduced levels, J,  $\pi$ , bands.  $^{100,102,104}\text{Zr}$ ,  $^{142,143,144}\text{Ba}$ ; measured  $E\gamma$ .  $^{100,101,102,103,104}\text{Zr}$ ; deduced mass correlations in fission of  $^{248}\text{Cm}$ .  $^{99,101,103}\text{Zr}$ ; systematics of neutron configurations. Comparison of  $^{103}\text{Zr}$  levels with quasiparticle plus rotor model calculations. JOUR PRVCA 79 067301

**A=249**

- $^{249}\text{Cm}$  2008IS05 NUCLEAR REACTIONS  $^{248}\text{Cm}(^{16}\text{O}, ^{15}\text{O})$ ,  $(^{18}\text{O}, ^{17}\text{O})$ ,  $E=162$  MeV;  $^{248}\text{Cm}(^{13}\text{C}, ^{12}\text{C})$ ,  $E=120$  MeV; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives,  $\sigma$ .  $^{249}\text{Cm}$ ; deduced levels, J,  $\pi$ , bands, configurations. JOUR PRVCA 78 054309
- 2008ISZY NUCLEAR REACTIONS  $^{248}\text{Cm}(^{16}\text{O}, x)^{249}\text{Cm}$ ,  $E=162$  MeV;  $^{248}\text{Cm}(^{18}\text{O}, x)^{249}\text{Cm}$ ,  $E=162$  MeV;  $^{248}\text{Cm}(^{13}\text{C}, x)^{249}\text{Cm}$ ,  $E=120$  MeV; measured  $E(\text{particle})$ ,  $E\gamma$ ,  $I\gamma\gamma\gamma$ -coin.; deduced J,  $\pi$ , (rotational) bands. REPT JAEA-Review 2008-054,P38,Ishii
- $^{249}\text{Bk}$  2009SE09 RADIOACTIVITY  $^{253,254}\text{Es}$ ,  $^{255}\text{Fm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(\theta)$ .  $^{250}\text{Bk}(\beta^-)$ ; measured  $\gamma(\theta)$ . JOUR PRVCA 79 064322
- $^{249}\text{Fm}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145
- 2009QI04 RADIOACTIVITY  $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ ,  $^{257m}\text{Rf}(\alpha)(\text{EC})$ ,  $^{257}\text{Lr}(\alpha)$ ,  $^{256}\text{Rf}(\text{SF})$ ,  $^{253}\text{No}(\alpha)(\text{EC})$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios.  $^{253}\text{No}$ ; deduced levels, J,  $\pi$ ,  $\alpha$  hindrance factors, and configurations. JOUR PRVCA 79 064319
- $^{249}\text{Md}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=250**

- $^{250}\text{Bk}$  2009SE09 NUCLEAR MOMENTS  $^{254}\text{Es}$ ,  $^{250}\text{Bk}$ ; measured magnetic dipole moment using low temperature nuclear orientation (LTNO) and hyperfine fields in an iron host-lattice. Comparison with deformed single-particle model calculations. JOUR PRVCA 79 064322
- 2009SE09 RADIOACTIVITY  $^{253,254}\text{Es}$ ,  $^{255}\text{Fm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(\theta)$ .  $^{250}\text{Bk}(\beta^-)$ ; measured  $\gamma(\theta)$ . JOUR PRVCA 79 064322
- $^{250}\text{Cf}$  2009SE09 RADIOACTIVITY  $^{253,254}\text{Es}$ ,  $^{255}\text{Fm}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(\theta)$ .  $^{250}\text{Bk}(\beta^-)$ ; measured  $\gamma(\theta)$ . JOUR PRVCA 79 064322
- $^{250}\text{Fm}$  2008AN16 RADIOACTIVITY  $^{250,251}\text{Md}$ ,  $^{254,255,256}\text{Lr}(\text{EC})$ ,  $(\alpha)$  [from  $^{209}\text{Bi}(^{48}\text{Ca}, \text{xn})$ ,  $E=214\text{-}244$  MeV and subsequent decays]; measured  $E\alpha$ ,  $I\alpha$ , conversion electrons,  $E\gamma$ ,  $I\gamma$ ,  $\gamma\alpha^-$ , (ce) $\alpha$ -coin,  $T_{1/2}$ .  $^{250}\text{Md}$ ; deduced levels, J,  $\pi$ ,  $T_{1/2}$ . JOUR ZAANE 38 219

KEYNUMBERS AND KEYWORDS

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**A=250 (continued)**

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|                   | 2009NE02 | RADIOACTIVITY $^{266}\text{Mt}$ , $^{262}\text{Bh}$ , $^{258}\text{Db}$ , $^{254}\text{Lr}$ , No, $^{250}\text{Md}$ , $\text{Fm}(\alpha)$ , $^{254}\text{Lr}$ , $^{250}\text{Md}(\text{EC})$ ; measured $\text{E}\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605   |
| $^{250}\text{Md}$ | 2008AN16 | RADIOACTIVITY $^{250,251}\text{Md}$ , $^{254,255,256}\text{Lr}(\text{EC})$ , $(\alpha)$ [from $^{209}\text{Bi}(\text{}^{48}\text{Ca}$ , xn), $\text{E}=214\text{-}244$ MeV and subsequent decays]; measured $\text{E}\alpha$ , $\text{I}\alpha$ , conversion electrons, $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\alpha$ -, (ce)a-coin, $\text{T}_{1/2}$ . $^{250}\text{Md}$ ; deduced levels, J, $\pi$ , $\text{T}_{1/2}$ . JOUR ZAANE 38 219 |
|                   | 2009NE02 | RADIOACTIVITY $^{266}\text{Mt}$ , $^{262}\text{Bh}$ , $^{258}\text{Db}$ , $^{254}\text{Lr}$ , No, $^{250}\text{Md}$ , $\text{Fm}(\alpha)$ , $^{254}\text{Lr}$ , $^{250}\text{Md}(\text{EC})$ ; measured $\text{E}\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605   |

**A=251**

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| $^{251}\text{Cf}$ | 2009SE09 | RADIOACTIVITY $^{253,254}\text{Es}$ , $^{255}\text{Fm}(\alpha)$ ; measured $\text{E}\alpha$ , $\text{I}\alpha$ , $\alpha(\theta)$ . $^{250}\text{Bk}(\beta^-)$ ; measured $\gamma(\theta)$ . JOUR PRVCA 79 064322  |
| $^{251}\text{Fm}$ | 2007ASZU | RADIOACTIVITY $^{255}\text{No}(\alpha)$ [from $^{248}\text{Cm}(\text{}^{12}\text{C}$ , 5n), $\text{E}=77$ MeV]; measured $\text{E}\alpha$ , $\text{I}\alpha$ . Using previous measurements of $\alpha\gamma$ -coin., deduced J, $\pi$ of $^{251}\text{Fm}$ . REPT JAEA-Review 2007-046,P42,Asai  |
|                   | 2008AN16 | RADIOACTIVITY $^{250,251}\text{Md}$ , $^{254,255,256}\text{Lr}(\text{EC})$ , $(\alpha)$ [from $^{209}\text{Bi}(\text{}^{48}\text{Ca}$ , xn), $\text{E}=214\text{-}244$ MeV and subsequent decays]; measured $\text{E}\alpha$ , $\text{I}\alpha$ , conversion electrons, $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\alpha$ -, (ce)a-coin, $\text{T}_{1/2}$ . $^{250}\text{Md}$ ; deduced levels, J, $\pi$ , $\text{T}_{1/2}$ . JOUR ZAANE 38 219 |
| $^{251}\text{Md}$ | 2008AN16 | RADIOACTIVITY $^{250,251}\text{Md}$ , $^{254,255,256}\text{Lr}(\text{EC})$ , $(\alpha)$ [from $^{209}\text{Bi}(\text{}^{48}\text{Ca}$ , xn), $\text{E}=214\text{-}244$ MeV and subsequent decays]; measured $\text{E}\alpha$ , $\text{I}\alpha$ , conversion electrons, $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\alpha$ -, (ce)a-coin, $\text{T}_{1/2}$ . $^{250}\text{Md}$ ; deduced levels, J, $\pi$ , $\text{T}_{1/2}$ . JOUR ZAANE 38 219 |
|                   | 2009KE02 | NUCLEAR REACTIONS $^{209}\text{Bi}(\text{}^{48}\text{Ca}$ , 2n), $\text{E}=219$ , 221 MeV; Measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\alpha\gamma$ -coin; Deduced rotational bands; Calculated rotational bands; $^{251}\text{Md}$ ; $^{255}\text{Lr}$ ; Compared theoretical and experimental results. JOUR PRLTA 102 212501  |
| $^{251}\text{No}$ | 2009DR02 | RADIOACTIVITY $^{263}\text{Hs}$ , $^{259}\text{Sg}$ , $^{255}\text{Rf}$ , $^{251}\text{No}$ , $^{247}\text{Fm}(\alpha)$ ; measured $\text{E}\alpha$ , half-lives. JOUR PRVCA 79 011602   |
|                   | 2009F002 | RADIOACTIVITY $^{259}\text{Sg}$ , $^{258}\text{Sg}$ , $^{255}\text{Rf}(\alpha)$ , (SF), (EC), $^{251}\text{No}(\alpha)$ ; measured $\text{E}\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602  |

**A=252**

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| $^{252}\text{Cf}$ | 2008MU24 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\text{E}\alpha$ , $\text{I}\alpha$ for ternary $\alpha$ particles, ternary $^6\text{He}$ -spectra; deduced $^6\text{He} / ^4\text{He}$ ratio. JOUR PRVCA 78 064616  |
|                   | 2008XU08 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\text{E}\gamma$ , $\text{I}\gamma$ , $\gamma\gamma$ -coin. $^{108}\text{Tc}$ ; deduced levels, J, $\pi$ , bands, $\text{B}(\text{E}1) / \text{B}(\text{E}2)$ ratios. $^{106,107}\text{Mo}$ , $^{107}\text{Tc}$ ; deduced bands. Comparison with particle-rotor model calculations. JOUR PRVCA 78 064301 |
|                   | 2009G009 | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $\text{E}\gamma$ , (particle) $\gamma$ -, $\gamma\gamma$ -coin, attenuated $\gamma\gamma(\theta)$ . $^{136,140,142}\text{Xe}$ , $^{142,146}\text{Ba}$ , $^{146,148}\text{Ce}$ ; deduced levels, J, g factors. JOUR PRVCA 79 034316   |

**A=252 (continued)**

- 2009G018 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $\gamma\gamma(\theta)$ .  $^{101}\text{Zr}$ ,  $^{103,105,107}\text{Mo}$ ,  $^{109,111}\text{Ru}$ ; deduced levels, J,  $\pi$ , mixing ratios. Comparison of mixing ratios with predictions of the particle-axial-rotor model for various single-particle states. JOUR PRVCA 80 014318
- 2009GU11 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.  $^{106,107}\text{Tc}$ ; deduced levels, J,  $\pi$ , bands, configurations, moments of inertia.  $^{104,105}\text{Mo}$ ,  $^{105,106}\text{Tc}$ ; systematics of alignments and moments of inertia. JOUR PRVCA 79 054317
- 2009GU20 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin.;  $^{107}\text{Tc}$ ; deduced levels, J,  $\pi$ , high-spin states, bands. Comparison with g-factor calculations. JOUR CPLEE 26 092502
- 2009HW03 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{91,92,93}\text{Rb}$ ,  $^{155,156}\text{Pm}$ ; deduced levels, J,  $\pi$ , bands. Comparison with level systematics of  $^{89}\text{Rb}$ ,  $^{90}\text{Kr}$  and  $^{92}\text{Kr}$ . JOUR PRVCA 80 037304
- 2009LI25 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin,  $\gamma\gamma(\theta)$ .  $^{134}\text{I}$ ; deduced levels, J,  $\pi$ , yrast states.  $^{111,112,113}\text{Rh}$ ; measured  $E\gamma$ ,  $\gamma\gamma$ -coin. Discussed systematics of yrast levels in Iodine nuclides. JOUR PRVCA 79 067303
- 2009LI42 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, and  $\gamma\gamma(\theta)$  using Gammasphere array.  $^{137}\text{I}$ ,  $^{139}\text{Cs}$ ; deduced levels, J,  $\pi$ , bands, multipolarities and mixing ratios.  $^{108,109,110}\text{Tc}$ ,  $^{111,113}\text{Rh}$ ; measured  $E\gamma$ ,  $\gamma\gamma$ -coin. Comparison with shell-model calculations. A=133-141(odd), Z=55; N=84, Sb, I, Cs, La; A=132-140(even), Z=52, 54, 56; systematics of low-lying states. JOUR PRVCA 80 044314
- 2009LU01 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{108,110,112}\text{Ru}$ ; deduced levels, J,  $\pi$ , rotational bands, B(E2) / B(M1). Tilted axis cranking and RPA calculations. JOUR PYLBB 670 307
- 2009LU04 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin and fission yield ratios of  $^{103,104,105}\text{Nb}$ ,  $^{143,144}\text{La}$  using Gammasphere.  $^{143,144}\text{La}$  deduced levels, J,  $\pi$ , band configurations, branching ratios, B(E1) / B(E2) ratios. Cranked-shell model calculations. JOUR NUPAB 818 121
- 2009LU11 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin using Gammasphere array.  $^{100}\text{Nb}$ ,  $^{148}\text{La}$ ; deduced ICCs, high-spin levels, J,  $\pi$ , rotational bands, multipolarities, shape coexistence and configurations. JOUR NUPAB 825 1
- 2009LU18 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, B(E1) / B(E2), chiral doubling. Comparison with other chiral doubling candidates. JOUR IMPEE 18 1697
- 2009SI21 RADIOACTIVITY  $^{252}\text{Cf}(\text{SF})$ ; measured  $E\gamma$ ,  $I\gamma$ ,  $\gamma\gamma$ -coin, half-lives.  $^{156}\text{Nd}$ ,  $^{156,158,160}\text{Sm}$ ; deduced levels, J,  $\pi$ , isomers, bands and configurations. Comparison with QPRM calculations. JOUR PRVCA 80 024304



KEYNUMBERS AND KEYWORDS

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**A=252 (continued)**

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| 2009UR02          | RADIOACTIVITY $^{248}\text{Cm}$ , $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin, $\gamma\gamma(\theta)$ , half-lives. $^{95}\text{Y}$ ; deduced levels, J, $\pi$ , isomers, configurations. Comparisons with shell-model calculations. JOUR PRVCA 79 044304   |
| 2009UR04          | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{159}\text{Sm}$ ; deduced levels, J, $\pi$ and half-lives. Systematics of 11 / 2[505] band in N=87-97 Sm, Gd and Dy nuclei. Comparison with quasiparticle rotor model calculations. JOUR PRVCA 80 037301   |
| 2009WA10          | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin using Gammasphere array. $^{103}\text{Nb}$ ; deduced high-spin levels, J, $\pi$ , vibrational band structure. JOUR PYLBB 675 420  |
| 2009ZH24          | RADIOACTIVITY $^{252}\text{Cf}(\text{SF})$ ; $^{108,110,112}\text{Ru}$ ; measured $E\gamma$ , $I\gamma$ , $\gamma\gamma$ -coin.; deduced high-spin, even-parity bands, branching ratios, odd-even spin energy band staggering, doubling of levels in $^{110}\text{Ru}$ , deformation parameters, triaxiality. Comparison with TRS calculations. JOUR IMPEE 18 1717   |
| $^{252}\text{Md}$ | 2008AN16 RADIOACTIVITY $^{250,251}\text{Md}$ , $^{254,255,256}\text{Lr}(\text{EC})$ , ( $\alpha$ ) [from $^{209}\text{Bi}(^{48}\text{Ca}, \text{xn})$ , E=214-244 MeV and subsequent decays]; measured $E\alpha$ , $I\alpha$ , conversion electrons, $E\gamma$ , $I\gamma$ , $\gamma\alpha$ -, (ce) $\alpha$ -coin, $T_{1/2}$ . $^{250}\text{Md}$ ; deduced levels, J, $\pi$ , $T_{1/2}$ . JOUR ZAANE 38 219 |

**A=253**

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|-------------------|---|
| $^{253}\text{Es}$ | 2009SE09 RADIOACTIVITY $^{253,254}\text{Es}$ , $^{255}\text{Fm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ , $\alpha(\theta)$ . $^{250}\text{Bk}(\beta^-)$ ; measured $\gamma(\theta)$ . JOUR PRVCA 79 064322  |
| $^{253}\text{Md}$ | 2009QI04 RADIOACTIVITY $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ , $^{257m}\text{Rf}(\alpha)(\text{EC})$ , $^{257}\text{Lr}(\alpha)$ , $^{256}\text{Rf}(\text{SF})$ , $^{253}\text{No}(\alpha)(\text{EC})$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios. $^{253}\text{No}$ ; deduced levels, J, $\pi$ , $\alpha$ hindrance factors, and configurations. JOUR PRVCA 79 064319  |
| $^{253}\text{No}$ | 2009HE20 RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |
|                   | 2009QI04 RADIOACTIVITY $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ , $^{257m}\text{Rf}(\alpha)(\text{EC})$ , $^{257}\text{Lr}(\alpha)$ , $^{256}\text{Rf}(\text{SF})$ , $^{253}\text{No}(\alpha)(\text{EC})$ ; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios. $^{253}\text{No}$ ; deduced levels, J, $\pi$ , $\alpha$ hindrance factors, and configurations. JOUR PRVCA 79 064319  |
| $^{253}\text{Lr}$ | 2009HE20 NUCLEAR REACTIONS $^{207}\text{Pb}(^{54}\text{Cr}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{209}\text{Bi}(^{54}\text{Cr}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{50}\text{Ti}, 2\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E not given; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , (fragment) $\alpha$ -coin, $\alpha\psi$ -coin, $\sigma$ ; deduced decay chain properties, $T_{1/2}$ , levels, J, $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145 |
|                   | 2009HE20 RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |

**A=254**

- <sup>254</sup>Es    2009GUZZ    NUCLEAR MOMENTS <sup>254</sup>Es; measured  $E\alpha(\theta)$ ,  $E\gamma(\theta)$  for decay from oriented sources. <sup>254</sup>Es; deduced magnetic moment. Low temperature nuclear orientation and iron hyperfine fields. CONF  
Cheboksary,P99,Gurevich
- 2009SE09    NUCLEAR MOMENTS <sup>254</sup>Es, <sup>250</sup>Bk; measured magnetic dipole moment using low temperature nuclear orientation (LTNO) and hyperfine fields in an iron host-lattice. Comparison with deformed single-particle model calculations. JOUR PRVCA 79 064322
- 2009SE09    RADIOACTIVITY <sup>253,254</sup>Es, <sup>255</sup>Fm( $\alpha$ ); measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(\theta)$ . <sup>250</sup>Bk( $\beta^-$ ); measured  $\gamma(\theta)$ . JOUR PRVCA 79 064322
- <sup>254</sup>No    2008AN16    RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured  $E\alpha$ ,  $I\alpha$ , conversion electrons,  $E\gamma$ ,  $I\gamma$ ,  $\gamma a^-$ , (ce)a-coin,  $T_{1/2}$ . <sup>250</sup>Md; deduced levels, J,  $\pi$ ,  $T_{1/2}$ . JOUR ZAANE 38 219
- 2009NE02    RADIOACTIVITY <sup>266</sup>Mt, <sup>262</sup>Bh, <sup>258</sup>Db, <sup>254</sup>Lr, No, <sup>250</sup>Md, Fm( $\alpha$ ), <sup>254</sup>Lr, <sup>250</sup>Md(EC); measured  $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605
- <sup>254</sup>Lr    2008AN16    RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured  $E\alpha$ ,  $I\alpha$ , conversion electrons,  $E\gamma$ ,  $I\gamma$ ,  $\gamma a^-$ , (ce)a-coin,  $T_{1/2}$ . <sup>250</sup>Md; deduced levels, J,  $\pi$ ,  $T_{1/2}$ . JOUR ZAANE 38 219
- 2009HE20    RADIOACTIVITY <sup>249</sup>Md, <sup>253</sup>Lr, <sup>257,258</sup>Db, <sup>259,260</sup>Sg, <sup>262</sup>Bh, <sup>265</sup>Hs( $\alpha$ ), (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145
- 2009NE02    RADIOACTIVITY <sup>266</sup>Mt, <sup>262</sup>Bh, <sup>258</sup>Db, <sup>254</sup>Lr, No, <sup>250</sup>Md, Fm( $\alpha$ ), <sup>254</sup>Lr, <sup>250</sup>Md(EC); measured  $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605
- <sup>254</sup>Rf    2009F002    RADIOACTIVITY <sup>259</sup>Sg, <sup>258</sup>Sg, <sup>255</sup>Rf( $\alpha$ ), (SF), (EC), <sup>251</sup>No( $\alpha$ ); measured  $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602

**A=255**

- <sup>255</sup>Fm    2009SE09    RADIOACTIVITY <sup>253,254</sup>Es, <sup>255</sup>Fm( $\alpha$ ); measured  $E\alpha$ ,  $I\alpha$ ,  $\alpha(\theta)$ . <sup>250</sup>Bk( $\beta^-$ ); measured  $\gamma(\theta)$ . JOUR PRVCA 79 064322
- <sup>255</sup>No    2007ASZU    RADIOACTIVITY <sup>255</sup>No( $\alpha$ ) [from <sup>248</sup>Cm(<sup>12</sup>C, 5n), E=77 MeV]; measured  $E\alpha$ ,  $I\alpha$ . Using previous measurements of  $\alpha\gamma$ -coin., deduced J,  $\pi$  of <sup>251</sup>Fm. REPT JAEA-Review 2007-046,P42,Asai
- 2008AN16    RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured  $E\alpha$ ,  $I\alpha$ , conversion electrons,  $E\gamma$ ,  $I\gamma$ ,  $\gamma a^-$ , (ce)a-coin,  $T_{1/2}$ . <sup>250</sup>Md; deduced levels, J,  $\pi$ ,  $T_{1/2}$ . JOUR ZAANE 38 219
- 2008HAZU    NUCLEAR REACTIONS <sup>238</sup>U(<sup>22</sup>Ne, 5n), E=113.8 MeV; measured  $E\alpha$ ,  $I\alpha$  using MANON rotating wheel system; deduced <sup>255</sup>No  $T_{1/2}$ . REPT RIKEN 2007 Annual,Pxii,Haba

**A=255 (continued)**

- <sup>255</sup>Lr 2008AN16 RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured E $\alpha$ , I $\alpha$ , conversion electrons, E $\gamma$ , I $\gamma$ ,  $\gamma$ a-, (ce)a-coin, T<sub>1/2</sub>. <sup>250</sup>Md; deduced levels, J,  $\pi$ , T<sub>1/2</sub>. JOUR ZAANE 38 219
- 2008AN16 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>48</sup>Ca, xn)<sup>255</sup>Lr / <sup>256</sup>Lr, E=214, 218 MeV; measured  $\sigma$ . JOUR ZAANE 38 219
- 2009F002 RADIOACTIVITY <sup>259</sup>Sg, <sup>258</sup>Sg, <sup>255</sup>Rf( $\alpha$ ), (SF), (EC), <sup>251</sup>No( $\alpha$ ); measured E $\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602
- 2009JE02 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>48</sup>Ca, 2n), E=222 MeV; measured E $\gamma$ , I $\gamma$ ,  $\gamma\gamma$ , half-lives. <sup>255</sup>Lr; deduced levels, J,  $\pi$ , bands, high-K 3qp isomers and configurations. Comparison with microscopic cranked relativistic Hartree-Bogoliubov (CRHB) calculations. JOUR PRVCA 80 034324
- 2009KE02 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>48</sup>Ca, 2n), E=219, 221 MeV; Measured E $\gamma$ , I $\gamma$ ,  $\alpha\gamma$ -coin; Deduced rotational bands; Calculated rotational bands;<sup>251</sup>Md;<sup>255</sup>Lr; Compared theoretical and experimental results. JOUR PRLTA 102 212501
- <sup>255</sup>Rf 2009DR02 RADIOACTIVITY <sup>263</sup>Hs, <sup>259</sup>Sg, <sup>255</sup>Rf, <sup>251</sup>No, <sup>247</sup>Fm( $\alpha$ ); measured E $\alpha$ , half-lives. JOUR PRVCA 79 011602
- 2009F002 RADIOACTIVITY <sup>259</sup>Sg, <sup>258</sup>Sg, <sup>255</sup>Rf( $\alpha$ ), (SF), (EC), <sup>251</sup>No( $\alpha$ ); measured E $\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602
- 2009HE20 RADIOACTIVITY <sup>249</sup>Md, <sup>253</sup>Lr, <sup>257,258</sup>Db, <sup>259,260</sup>Sg, <sup>262</sup>Bh, <sup>265</sup>Hs( $\alpha$ ), (SF), (EC); measured E $\alpha$ , I $\alpha$ , T<sub>1/2</sub>; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=256**

- <sup>256</sup>No 2008AN16 RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured E $\alpha$ , I $\alpha$ , conversion electrons, E $\gamma$ , I $\gamma$ ,  $\gamma$ a-, (ce)a-coin, T<sub>1/2</sub>. <sup>250</sup>Md; deduced levels, J,  $\pi$ , T<sub>1/2</sub>. JOUR ZAANE 38 219
- <sup>256</sup>Lr 2008AN16 RADIOACTIVITY <sup>250,251</sup>Md, <sup>254,255,256</sup>Lr(EC), ( $\alpha$ ) [from <sup>209</sup>Bi(<sup>48</sup>Ca, xn), E=214-244 MeV and subsequent decays]; measured E $\alpha$ , I $\alpha$ , conversion electrons, E $\gamma$ , I $\gamma$ ,  $\gamma$ a-, (ce)a-coin, T<sub>1/2</sub>. <sup>250</sup>Md; deduced levels, J,  $\pi$ , T<sub>1/2</sub>. JOUR ZAANE 38 219
- 2008AN16 NUCLEAR REACTIONS <sup>209</sup>Bi(<sup>48</sup>Ca, xn)<sup>255</sup>Lr / <sup>256</sup>Lr, E=214, 218 MeV; measured  $\sigma$ . JOUR ZAANE 38 219
- <sup>256</sup>Rf 2009HE20 RADIOACTIVITY <sup>249</sup>Md, <sup>253</sup>Lr, <sup>257,258</sup>Db, <sup>259,260</sup>Sg, <sup>262</sup>Bh, <sup>265</sup>Hs( $\alpha$ ), (SF), (EC); measured E $\alpha$ , I $\alpha$ , T<sub>1/2</sub>; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145
- 2009JE01 NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>50</sup>Ti, 2n), E=243 MeV; measured (recoil)(electron)(fission)-coin, (electron) $\gamma$ -coin, conversion electron spectra, E $\gamma$ , I $\gamma$ , half-lives. <sup>256</sup>Rf; deduced levels, J,  $\pi$ , high-K isomers, configurations. Comparisons with Woods-Saxon potential-energy surface calculations. JOUR PRVCA 79 031303

KEYNUMBERS AND KEYWORDS

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**A=256 (continued)**

2009QI04 RADIOACTIVITY  $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ ,  $^{257m}\text{Rf}(\alpha)(\text{EC})$ ,  $^{257}\text{Lr}(\alpha)$ ,  $^{256}\text{Rf}(\text{SF})$ ,  $^{253}\text{No}(\alpha)(\text{EC})$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios.  $^{253}\text{No}$ ; deduced levels, J,  $\pi$ ,  $\alpha$  hindrance factors, and configurations. JOUR PRVCA 79 064319

**A=257**

$^{257}\text{Lr}$  2009QI04 RADIOACTIVITY  $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ ,  $^{257m}\text{Rf}(\alpha)(\text{EC})$ ,  $^{257}\text{Lr}(\alpha)$ ,  $^{256}\text{Rf}(\text{SF})$ ,  $^{253}\text{No}(\alpha)(\text{EC})$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios.  $^{253}\text{No}$ ; deduced levels, J,  $\pi$ ,  $\alpha$  hindrance factors, and configurations. JOUR PRVCA 79 064319

$^{257}\text{Rf}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

2009QI04 NUCLEAR REACTIONS  $^{208}\text{Pb}(^{50}\text{Ti}, n)$ ,  $E=233$  MeV; measured  $E\alpha$ ,  $I\alpha$ , ce, fission events correlated with evaporation residues,  $E\gamma$ ,  $I\gamma$ , (ce) $\alpha$ -, (ce) $\gamma$ -coin, isomer half-lives, (evaporation residues)-ce- $\alpha$ - $\alpha$  correlations.  $^{257}\text{Rf}$ ; deduced levels, J,  $\pi$ , configurations.  $^{257}\text{Rf}$ ; calculated excitation energies of 1-qp states and rotational bands built on 1-qp and 3-qp bandheads.  $A=245$ - $257$ , odd- $A$  Pu, Cm, Cf, Fm, No, Rf; Nilsson orbital systematics. JOUR PRVCA 79 064319

2009QI04 RADIOACTIVITY  $^{257}\text{Rf}(\alpha)(\text{EC})(\text{SF})$ ,  $^{257m}\text{Rf}(\alpha)(\text{EC})$ ,  $^{257}\text{Lr}(\alpha)$ ,  $^{256}\text{Rf}(\text{SF})$ ,  $^{253}\text{No}(\alpha)(\text{EC})$ ; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , fission events, (ce) $\alpha$ -coin, half-lives, and fission branching ratios.  $^{253}\text{No}$ ; deduced levels, J,  $\pi$ ,  $\alpha$  hindrance factors, and configurations. JOUR PRVCA 79 064319

$^{257}\text{Db}$  2009HE20 NUCLEAR REACTIONS  $^{207}\text{Pb}(^{54}\text{Cr}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{208}\text{Pb}(^{58}\text{Fe}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{209}\text{Bi}(^{54}\text{Cr}, n)$ ,  $(^{50}\text{Ti}, n)$ ,  $(^{50}\text{Ti}, 2n)$ ,  $(^{48}\text{Ca}, 4n)$ ,  $E$  not given; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , (fragment) $\alpha$ -coin,  $\alpha\psi$ -coin,  $\sigma$ ; deduced decay chain properties,  $T_{1/2}$ , levels, J,  $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145

2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=258**

$^{258}\text{Fm}$  2007NIZT NUCLEAR REACTIONS  $^{244}\text{Pu}(^{18}\text{O}, \alpha)$ ,  $E=103$  MeV; measured  $E\alpha$ ,  $I\alpha$ , fragment- $\alpha$ -coin. Measurements of  $\alpha$  at 20 and 160 deg. REPT JAEA-Review 2007-046,P56,Nishinaka

KEYNUMBERS AND KEYWORDS

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**A=258 (continued)**

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| $^{258}\text{No}$ | 2009PE09 | NUCLEAR REACTIONS $^{232}\text{Th}(^{25}\text{Mg}, \text{X})$ , E=132 MeV; $^{232}\text{Th}(^{26}\text{Mg}, \text{X})$ , E=148 MeV; measured $\sigma$ , mass and energy distributions of fission fragments, neutrons by time-of-flight method. $^{258}\text{No}$ ; deduced ratio of widths for neutron emission and fission ( $\Gamma_n / \Gamma_f$ ) for the compound nucleus. Implications for survival probabilities of excited heavy nuclei formed in hot fusion reactions. JOUR PRVCA 79 044607   |
| $^{258}\text{Rf}$ | 2009HE20 | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |
| $^{258}\text{Db}$ | 2009F002 | RADIOACTIVITY $^{259}\text{Sg}$ , $^{258}\text{Sg}$ , $^{255}\text{Rf}(\alpha)$ , (SF), (EC), $^{251}\text{No}(\alpha)$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602   |
|                   | 2009HE20 | NUCLEAR REACTIONS $^{207}\text{Pb}(^{54}\text{Cr}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{209}\text{Bi}(^{54}\text{Cr}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{50}\text{Ti}, 2\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E not given; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , (fragment) $\alpha$ -coin, $\alpha\psi$ -coin, $\sigma$ ; deduced decay chain properties, $T_{1/2}$ , levels, J, $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145 |
|                   | 2009HE20 | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |
|                   | 2009NE02 | RADIOACTIVITY $^{266}\text{Mt}$ , $^{262}\text{Bh}$ , $^{258}\text{Db}$ , $^{254}\text{Lr}$ , $\text{No}$ , $^{250}\text{Md}$ , $\text{Fm}(\alpha)$ , $^{254}\text{Lr}$ , $^{250}\text{Md}(\text{EC})$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605  |
| $^{258}\text{Sg}$ | 2009F002 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{52}\text{Cr}, \text{n})^{259}\text{Sg}$ , E=250.7-266.2 MeV; $^{208}\text{Pb}(^{52}\text{Cr}, 2\text{n})^{258}\text{Sg}$ , E=250.7-266.2 MeV. Measured excitation functions, $\sigma$ . JOUR PRVCA 79 027602  |
|                   | 2009F002 | RADIOACTIVITY $^{259}\text{Sg}$ , $^{258}\text{Sg}$ , $^{255}\text{Rf}(\alpha)$ , (SF), (EC), $^{251}\text{No}(\alpha)$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602   |

**A=259**

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| $^{259}\text{No}$ | 2008ASZY | NUCLEAR REACTIONS $^{248}\text{Cm}(^{18}\text{O}, 3\alpha)$ , E=94 MeV; measured $E\gamma$ , $I\gamma$ , $\alpha\gamma$ -coin., x-rays; deduced J, $\pi$ . REPT JAEA-Review 2008-054,P40,Asai  |
| $^{259}\text{Db}$ | 2009F002 | RADIOACTIVITY $^{259}\text{Sg}$ , $^{258}\text{Sg}$ , $^{255}\text{Rf}(\alpha)$ , (SF), (EC), $^{251}\text{No}(\alpha)$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602   |
|                   | 2009HE20 | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145 |
| $^{259}\text{Sg}$ | 2009DR02 | RADIOACTIVITY $^{263}\text{Hs}$ , $^{259}\text{Sg}$ , $^{255}\text{Rf}$ , $^{251}\text{No}$ , $^{247}\text{Fm}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 011602  |
|                   | 2009F002 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{52}\text{Cr}, \text{n})^{259}\text{Sg}$ , E=250.7-266.2 MeV; $^{208}\text{Pb}(^{52}\text{Cr}, 2\text{n})^{258}\text{Sg}$ , E=250.7-266.2 MeV. Measured excitation functions, $\sigma$ . JOUR PRVCA 79 027602  |
|                   | 2009F002 | RADIOACTIVITY $^{259}\text{Sg}$ , $^{258}\text{Sg}$ , $^{255}\text{Rf}(\alpha)$ , (SF), (EC), $^{251}\text{No}(\alpha)$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027602   |

KEYNUMBERS AND KEYWORDS

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**A=259 (continued)**

- 2009HE20 NUCLEAR REACTIONS  $^{207}\text{Pb}(^{54}\text{Cr}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{208}\text{Pb}(^{58}\text{Fe}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{209}\text{Bi}(^{54}\text{Cr}, n)$ ,  $(^{50}\text{Ti}, n)$ ,  $(^{50}\text{Ti}, 2n)$ ,  $(^{48}\text{Ca}, 4n)$ , E not given; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , (fragment) $\alpha$ -coin,  $\alpha\psi$ -coin,  $\sigma$ ; deduced decay chain properties,  $T_{1/2}$ , levels, J,  $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145
- 2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=260**

- $^{260}\text{Db}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145
- $^{260}\text{Sg}$  2009HE20 NUCLEAR REACTIONS  $^{207}\text{Pb}(^{54}\text{Cr}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{208}\text{Pb}(^{58}\text{Fe}, n)$ ,  $(^{54}\text{Cr}, 2n)$ ,  $^{209}\text{Bi}(^{54}\text{Cr}, n)$ ,  $(^{50}\text{Ti}, n)$ ,  $(^{50}\text{Ti}, 2n)$ ,  $(^{48}\text{Ca}, 4n)$ , E not given; measured  $E\alpha$ ,  $I\alpha$ ,  $E\gamma$ , (fragment) $\alpha$ -coin,  $\alpha\psi$ -coin,  $\sigma$ ; deduced decay chain properties,  $T_{1/2}$ , levels, J,  $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145
- 2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

**A=261**

- $^{261}\text{Sg}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145
- $^{261}\text{Rg}$  2009MA15 ATOMIC MASSES  $^{261,265}\text{Rg}$ ; measured masses and relative abundances using inductively coupled plasma sector field mass spectrometry; deduced  $T_{1/2}$  limit for isomeric states of Rg. JOUR IMPEE 18 621

**A=262**

- $^{262}\text{Db}$  2009M012 RADIOACTIVITY  $^{266}\text{Bh}(\alpha)$ ; measured  $E\alpha$ ,  $I\alpha$ . JOUR JUPSA 78 064201
- $^{262}\text{Sg}$  2009HE20 RADIOACTIVITY  $^{249}\text{Md}$ ,  $^{253}\text{Lr}$ ,  $^{257,258}\text{Db}$ ,  $^{259,260}\text{Sg}$ ,  $^{262}\text{Bh}$ ,  $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured  $E\alpha$ ,  $I\alpha$ ,  $T_{1/2}$ ; deduced levels, J,  $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145

KEYNUMBERS AND KEYWORDS

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**A=262 (continued)**

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| $^{262}\text{Bh}$ | 2009HE20 | NUCLEAR REACTIONS $^{207}\text{Pb}(^{54}\text{Cr}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{209}\text{Bi}(^{54}\text{Cr}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{50}\text{Ti}, 2\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E not given; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , (fragment) $\alpha$ -coin, $\alpha\psi$ -coin, $\sigma$ ; deduced decay chain properties, $T_{1/2}$ , levels, J, $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145 |
|                   | 2009HE20 | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |
|                   | 2009NE02 | RADIOACTIVITY $^{266}\text{Mt}$ , $^{262}\text{Bh}$ , $^{258}\text{Db}$ , $^{254}\text{Lr}$ , No, $^{250}\text{Md}$ , $\text{Fm}(\alpha)$ , $^{254}\text{Lr}$ , $^{250}\text{Md}(\text{EC})$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605  |

**A=263**

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| $^{263}\text{Hs}$ | 2009DR02 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{56}\text{Fe}, \text{n})$ , $E=276.4$ MeV; measured $\sigma$ . JOUR PRVCA 79 011602   |
|                   | 2009DR02 | RADIOACTIVITY $^{263}\text{Hs}$ , $^{259}\text{Sg}$ , $^{255}\text{Rf}$ , $^{251}\text{No}$ , $^{247}\text{Fm}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 011602 |

**A=264**

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| $^{264}\text{No}$ | 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605 |
| $^{264}\text{Lr}$ | 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605 |
| $^{264}\text{Sg}$ | 2009DV01 | RADIOACTIVITY $^{268}\text{Hs}$ , $^{269}\text{Hs}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 037602   |

**A=265**

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|-------------------|----------|--|
| $^{265}\text{Sg}$ | 2009DV01 | RADIOACTIVITY $^{268}\text{Hs}$ , $^{269}\text{Hs}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 037602  |
| $^{265}\text{Bh}$ | 2009HE20 | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145   |
| $^{265}\text{Hs}$ | 2009HE20 | NUCLEAR REACTIONS $^{207}\text{Pb}(^{54}\text{Cr}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{54}\text{Cr}, 2\text{n})$ , $^{209}\text{Bi}(^{54}\text{Cr}, \text{n})$ , $(^{50}\text{Ti}, \text{n})$ , $(^{50}\text{Ti}, 2\text{n})$ , $(^{48}\text{Ca}, 4\text{n})$ , E not given; measured $E\alpha$ , $I\alpha$ , $E\gamma$ , (fragment) $\alpha$ -coin, $\alpha\psi$ -coin, $\sigma$ ; deduced decay chain properties, $T_{1/2}$ , levels, J, $\pi$ . Comparison with other data and calculations. JOUR ZAANE 41 145 |

KEYNUMBERS AND KEYWORDS

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**A=265 (continued)**

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|----------------------------|---|
| 2009HE20                   | RADIOACTIVITY $^{249}\text{Md}$ , $^{253}\text{Lr}$ , $^{257,258}\text{Db}$ , $^{259,260}\text{Sg}$ , $^{262}\text{Bh}$ , $^{265}\text{Hs}(\alpha)$ , (SF), (EC); measured $E\alpha$ , $I\alpha$ , $T_{1/2}$ ; deduced levels, J, $\pi$ . Analysis of decay chains and production routes. Comparison with other data and calculations. JOUR ZAANE 41 145                                  |
| 2009M034                   | NUCLEAR REACTIONS $^{208}\text{Pb}({}^{58}\text{Fe}, n)$ , $({}^{64}\text{Ni}, n)$ , $({}^{70}\text{Zn}, n)$ , $^{209}\text{Bi}({}^{64}\text{Ni}, n)$ , $({}^{70}\text{Zn}, n)$ , E not given; measured reaction fragments, $E\alpha$ , $I\alpha$ ; $^{265}\text{Hs}$ , $^{271}\text{Ds}$ , $^{272}\text{Rg}$ , 27712, 27813 deduced as $\alpha$ -decay chain members. JOUR IMPEE 18 2175 |
| $^{265}\text{Rg}$ 2009MA15 | ATOMIC MASSES $^{261,265}\text{Rg}$ ; measured masses and relative abundances using inductively coupled plasma sector field mass spectrometry; deduced $T_{1/2}$ limit for isomeric states of Rg. JOUR IMPEE 18 621   |

**A=266**

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| $^{266}\text{Bh}$ 2009M012 | NUCLEAR REACTIONS $^{248}\text{Cm}({}^{23}\text{Na}, 4n)$ , $({}^{23}\text{Na}, 5n)$ , E=126, 130, 132 MeV; measured yields. JOUR JUPSA 78 064201   |
| 2009M012                   | RADIOACTIVITY $^{266}\text{Bh}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR JUPSA 78 064201   |
| $^{266}\text{Mt}$ 2009NE02 | NUCLEAR REACTIONS $^{208}\text{Pb}({}^{59}\text{Co}, n)^{266}\text{Mt}$ , E=295 MeV; measured production cross section JOUR PRVCA 79 027605   |
| 2009NE02                   | RADIOACTIVITY $^{266}\text{Mt}$ , $^{262}\text{Bh}$ , $^{258}\text{Db}$ , $^{254}\text{Lr}$ , No, $^{250}\text{Md}$ , $\text{Fm}(\alpha)$ , $^{254}\text{Lr}$ , $^{250}\text{Md}(\text{EC})$ ; measured $E\alpha$ , half-lives, decay modes. JOUR PRVCA 79 027605 |

**A=267**

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|----------------------------|---|
| $^{267}\text{Bh}$ 2009M012 | NUCLEAR REACTIONS $^{248}\text{Cm}({}^{23}\text{Na}, 4n)$ , $({}^{23}\text{Na}, 5n)$ , E=126, 130, 132 MeV; measured yields. JOUR JUPSA 78 064201 |
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**A=268**

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| $^{268}\text{Rf}$ 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605 |
| $^{268}\text{Db}$ 2009DR05 | RADIOACTIVITY $^{268}\text{Db}$ , $^{268}\text{Rf}(\alpha)$ , (SF); measured $E\alpha$ , $I\alpha$ and SF events. $^{212}\text{Bi}$ , $^{208,210,212,216}\text{Po}$ , $^{220}\text{Rn}$ , $^{224}\text{Ra}$ , $^{228,230}\text{Th}$ , $^{231}\text{Pa}$ , $^{237}\text{Np}$ , $^{238,239,240,241,242}\text{Pu}$ , $^{241,243}\text{Am}$ , $^{243,244}\text{Cm}(\alpha)$ ; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 054605 |
| $^{268}\text{Hs}$ 2009DV01 | NUCLEAR REACTIONS $^{248}\text{Cm}({}^{25}\text{Mg}, 4n)^{269}\text{Hs}$ , $({}^{25}\text{Mg}, 5n)^{268}\text{Hs}$ , E(cm)=140 MeV; measured $\alpha$ , fission events, $\alpha$ -SF and $\alpha$ - $\alpha$ correlations, production cross section limits. No events were assigned to $^{268}\text{Hs}$ and $^{269}\text{Hs}$ . JOUR PRVCA 79 037602   |
| 2009DV01                   | RADIOACTIVITY $^{268}\text{Hs}$ , $^{269}\text{Hs}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 037602   |



KEYNUMBERS AND KEYWORDS

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**A=269**

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| $^{269}\text{Hs}$ | 2009DV01 | NUCLEAR REACTIONS $^{248}\text{Cm}(^{25}\text{Mg}, 4n)^{269}\text{Hs}$ , $(^{25}\text{Mg}, 5n)^{268}\text{Hs}$ , $E(\text{cm})=140$ MeV; measured $\alpha$ , fission events, $\alpha$ -SF and $\alpha$ - $\alpha$ correlations, production cross section limits. No events were assigned to $^{268}\text{Hs}$ and $^{269}\text{Hs}$ . JOUR PRVCA 79 037602   |
|                   | 2009DV01 | RADIOACTIVITY $^{268}\text{Hs}$ , $^{269}\text{Hs}(\alpha)$ ; measured $E\alpha$ , half-lives. JOUR PRVCA 79 037602  |
|                   | 2009G03  | NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, \text{xn})^{269}\text{Hs}$ / $^{270}\text{HS}$ / $^{271}\text{Hs}$ , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z=108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, \text{xn})^{168}\text{Os}$ / $^{169}\text{Os}$ / $^{170}\text{Os}$ / $^{171}\text{Os}$ / $^{172}\text{Os}$ / , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608 |

**A=270**

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| $^{270}\text{Hs}$ | 2009G03 | NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, \text{xn})^{269}\text{Hs}$ / $^{270}\text{HS}$ / $^{271}\text{Hs}$ , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z=108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, \text{xn})^{168}\text{Os}$ / $^{169}\text{Os}$ / $^{170}\text{Os}$ / $^{171}\text{Os}$ / $^{172}\text{Os}$ / , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608 |
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**A=271**

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|-------------------|----------|--|
| $^{271}\text{Hs}$ | 2009G03  | NUCLEAR REACTIONS $^{136}\text{Xe}(^{136}\text{Xe}, \text{xn})^{269}\text{Hs}$ / $^{270}\text{HS}$ / $^{271}\text{Hs}$ , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ , upper limit of production $\sigma$ for $Z=108$ element; deduced fusion probability. Calculated excitation functions for one-neutron to four-neutron channels. $\text{Ti}(^{136}\text{Xe}, \text{xn})^{168}\text{Os}$ / $^{169}\text{Os}$ / $^{170}\text{Os}$ / $^{171}\text{Os}$ / $^{172}\text{Os}$ / , $E=750$ MeV; measured $E\alpha$ , $I\alpha$ . JOUR PRVCA 79 024608 |
| $^{271}\text{Ds}$ | 2009M034 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $^{209}\text{Bi}(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $E$ not given; measured reaction fragments, $E\alpha$ , $I\alpha$ ; $^{265}\text{Hs}$ , $^{271}\text{Ds}$ , $^{272}\text{Rg}$ , 27712, 27813 deduced as $\alpha$ -decay chain members. JOUR IMPEE 18 2175   |

**A=272**

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|-------------------|----------|--|
| $^{272}\text{Rg}$ | 2009M034 | NUCLEAR REACTIONS $^{208}\text{Pb}(^{58}\text{Fe}, \text{n})$ , $(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $^{209}\text{Bi}(^{64}\text{Ni}, \text{n})$ , $(^{70}\text{Zn}, \text{n})$ , $E$ not given; measured reaction fragments, $E\alpha$ , $I\alpha$ ; $^{265}\text{Hs}$ , $^{271}\text{Ds}$ , $^{272}\text{Rg}$ , 27712, 27813 deduced as $\alpha$ -decay chain members. JOUR IMPEE 18 2175 |
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**A=273**

No references found

KEYNUMBERS AND KEYWORDS

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**A=274**

No references found

**A=275**

No references found

**A=276**

No references found

**A=277**

<sup>277</sup>112      2009M034      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>58</sup>Fe, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n),  
<sup>209</sup>Bi(<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E not given; measured reaction fragments,  
E $\alpha$ , I $\alpha$ ; <sup>265</sup>Hs, <sup>271</sup>Ds, <sup>272</sup>Rg, 27712, 27813 deduced as  $\alpha$ -decay chain  
members. JOUR IMPEE 18 2175

**A=278**

<sup>278</sup>113      2009M034      NUCLEAR REACTIONS <sup>208</sup>Pb(<sup>58</sup>Fe, n), (<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n),  
<sup>209</sup>Bi(<sup>64</sup>Ni, n), (<sup>70</sup>Zn, n), E not given; measured reaction fragments,  
E $\alpha$ , I $\alpha$ ; <sup>265</sup>Hs, <sup>271</sup>Ds, <sup>272</sup>Rg, 27712, 27813 deduced as  $\alpha$ -decay chain  
members. JOUR IMPEE 18 2175

**A=279**

No references found

**A=280**

No references found

**A=281**

No references found

**A=282**

No references found

**A=283**

No references found

**A=284**

No references found

**A=285**

No references found

**A=286**

<sup>286</sup>114      2009ST21      NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E(cm)=244 MeV; measured E $\alpha$ , I $\alpha$  and  $\alpha$ -decay chains; deduced  $\sigma$ . Berkeley Gas-filled Separator (BGS). JOUR PRLTA 103 132502

**A=287**

<sup>287</sup>114      2009ST21      NUCLEAR REACTIONS <sup>242</sup>Pu(<sup>48</sup>Ca, 3n), (<sup>48</sup>Ca, 4n), E(cm)=244 MeV; measured E $\alpha$ , I $\alpha$  and  $\alpha$ -decay chains; deduced  $\sigma$ . Berkeley Gas-filled Separator (BGS). JOUR PRLTA 103 132502

**A=288**

<sup>288</sup>115      2009DR05      NUCLEAR REACTIONS <sup>243</sup>Am(<sup>48</sup>Ca, 3n)<sup>288</sup>115, E not given; measured delayed  $\alpha$  and SF events from Db and Rf activities formed in successive decays of <sup>288</sup>115. Confirmed synthesis of Z=115 element reported in earlier studies. JOUR PRVCA 79 054605

**A=289**

No references found

**A=290**

No references found

**A=291**

No references found

KEYNUMBERS AND KEYWORDS

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**A=292**

No references found

**A=293**

No references found

**A=294**

No references found

**A=295**

No references found

**A=296**

No references found

**A=297**

No references found

**A=298**

<sup>298</sup> 120	20090G02	NUCLEAR REACTIONS <sup>244</sup> Pu( <sup>58</sup> Fe, xn) <sup>298</sup> 120 / <sup>299</sup> 120, E=330.4 MeV;measured $\alpha$ -particle spectra, (evaporation residues) $\alpha$ -coin, and upper limit of production cross section for Z=120 element. No decay chains for <sup>298</sup> 120 and <sup>299</sup> 120 were observed. JOUR PRVCA 79 024603
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**A=299**

<sup>299</sup> 120	20090G02	NUCLEAR REACTIONS <sup>244</sup> Pu( <sup>58</sup> Fe, xn) <sup>298</sup> 120 / <sup>299</sup> 120, E=330.4 MeV;measured $\alpha$ -particle spectra, (evaporation residues) $\alpha$ -coin, and upper limit of production cross section for Z=120 element. No decay chains for <sup>298</sup> 120 and <sup>299</sup> 120 were observed. JOUR PRVCA 79 024603
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