PHYSICAL REVIEW C™

For editorial and subscription correspondence, please see inside front cover
(ISSN: 0556-2813)

PERIODICALS
Postmaster send address changes to:
PHYSICAL REVIEW C
APS Subscription Services
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 83, NUMBER 2 ***CONTENTS*** **FEBRUARY 2011**

EDITORIALS AND ANNOUNCEMENTS

Editorial: Expanded Open Access and Creative Commons *(2 pages)* 020001

RAPID COMMUNICATIONS

Multiparticle-multihole states around ^{16}O and correlation-energy effect on the shell gap *(5 pages)* . . . . . 021301(R)
Yutaka Utsuno and Satoshi Chiba

Matter radii of $^{32-35}$Mg *(4 pages)* . . . . . 021302(R)
R. Kanungo, A. Prochazka, W. Horiuchi, C. Nociforo, T. Aumann, D. Boutin, D. Cortina-Gil, B. Davids, M. Diakaki, F. Farinon, H. Geissel, R. Gernhäuser, J. Gerl, R. Janik, B. Jonson, B. Kindler, R. Knöbel, R. Krücken, M. Lantz, H. Lenske, Y. Litvinov, B. Lommel, K. Mahata, P. Maierbeck, A. Musumarra, T. Nilsson, C. Perro, C. Scheidenberger, B. Sitar, P. Strmen, B. Sun, Y. Suzuki, I. Szarka, I. Tanihata, Y. Utsuno, H. Weick, and M. Winkler

Bent three-α linear-chain structure of ^{13}C *(5 pages)* . . . . . 021303(R)
N. Furutachi and M. Kimura

Dipole responses in Nd and Sm isotopes with shape transitions *(5 pages)* . . . . . 021304(R)
Kenichi Yoshida and Takashi Nakatsukasa

Closed-shell properties of ^{24}O with *ab initio* coupled-cluster theory *(5 pages)* . . . . . 021305(R)
Ø. Jensen, G. Hagen, M. Hjorth-Jensen, and J. S. Vaagen

Systematics of reactions with ^{4,6}He: Static and dynamic halo effects and evidence for core-halo decoupling *(4 pages)* . . . . . 021601(R)
E. F. Aguilera, I. Martel, A. M. Sánchez-Benítez, and L. Acosta

Color transparency and suppression of high-p_T hadrons in nuclear collisions *(5 pages)* . . . . . 021901(R)
B. Z. Kopeliovich, I. K. Potashnikova, and Iván Schmidt

Elliptic flow in U+U collisions at $\sqrt{s_{NN}} = 200$ GeV and in Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ TeV: Prediction from a hybrid approach *(5 pages)* . . . . . 021902(R)
Tetsufumi Hirano, Pasi Huovinen, and Yasushi Nara

Effects of triangular flow on di-hadron azimuthal correlations in relativistic heavy ion collisions *(4 pages)* . . . . . 021903(R)
Jun Xu and Che Ming Ko

Copyright 2011 by American Physical Society

0556-2813(201102)83:2;1-P

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 83, NUMBER 2** **FEBRUARY 2011**

Evidence for a narrow $N^*(1685)$ resonance in quasifree Compton scattering on the neutron *(4 pages)* ..... 022201(R)
V. Kuznetsov, M. V. Polyakov, V. Bellini, T. Boiko, S. Chebotaryov, H.-S. Dho, G. Gervino, F. Ghio, A. Giusa, A. Kim, W. Kim, F. Mammoliti, E. Milman, A. Ni, I. A. Perevalova, C. Randieri, G. Russo, M. L. Sperduto, C. M. Sutera, and A. N. Vall

Upper bound on parity-violating neutron spin rotation in ^{4}He *(5 pages)* ..... 022501(R)
W. M. Snow, C. D. Bass, T. D. Bass, B. E. Crawford, K. Gan, B. R. Heckel, D. Luo, D. M. Markoff, A. M. Micherdzinska, H. P. Mumm, J. S. Nico, A. K. Opper, M. Sarsour, E. I. Sharapov, H. E. Swanson, S. B. Walbridge, and V. Zhumabekova

ARTICLES

Nucleon-Nucleon Interaction, Few-Body Systems

Nonsymmetrized hyperspherical harmonic basis for an A-body system *(13 pages)* 024001
M. Gattobigio, A. Kievsky, and M. Viviani

Three-body break-up in deuteron-deuteron scattering at 65 MeV/nucleon *(8 pages)* 024002
A. Ramazani-Moghaddam-Arani, H. R. Amir-Ahmadi, A. D. Bacher, C. D. Bailey, A. Biegun, M. Eslami-Kalantari, I. Gašparić, L. Joulaeizadeh, N. Kalantar-Nayestanaki, St. Kistryn, A. Kozela, H. Mardanpour, J. G. Messchendorp, A. M. Micherdzinska, H. Moeini, S. V. Shende, E. Stephan, E. J. Stephenson, and R. Sworst

Perturbative renormalizability of chiral two-pion exchange in nucleon-nucleon scattering *(11 pages)* 024003
M. Pavón Valderrama

Nuclear Structure

Symplectic structure and monopole strength in ^{12}C *(8 pages)* 024301
T. Yoshida, N. Itagaki, and K. Katō

Emergence of generalized seniority in low-lying states with random interactions *(4 pages)* 024302
Y. Lei, Z. Y. Xu, Y. M. Zhao, S. Pittel, and A. Arima

Neutrino and antineutrino charge-exchange reactions on ^{12}C *(19 pages)* 024303
A. R. Samana, F. Krmpotić, N. Paar, and C. A. Bertulani

Graphical method for deriving an effective interaction with a new vertex function *(9 pages)* 024304
K. Suzuki, R. Okamoto, H. Kumagai, and S. Fujii

Possibility of antimagnetic rotation in odd-A Cd isotopes *(3 pages)* 024305
Santosh Roy and S. Chattopadhyay

High-spin spectroscopy in ^{125}Xe *(13 pages)* 024306
A. Al-Khatib, G. B. Hagemann, G. Sletten, A. K. Singh, H. Amro, G. Benzoni, A. Bracco, P. Bringel, F. Camera, M. P. Carpenter, P. Chowdhury, R. M. Clark, C. Engelhardt, P. Fallon, B. Herskind, H. Hübel, R. V. F. Janssens, T. L. Khoo, T. Lauritsen, A. Neußer-Neffgen, and C. Rønn Hansen

Odd-even $^{147-153}$Pm isotopes within the neutron-proton interacting boson-fermion model *(9 pages)* 024307
J. Barea, C. E. Alonso, and J. M. Arias

Latent heat of nuclear matter *(10 pages)* 024308
Arianna Carbone, Artur Polls, Arnau Rios, and Isaac Vidaña

Magnetic rotation in ^{112}In *(7 pages)* 024309
C. Y. He (贺创业), X. Q. Li (李雪琴), L. H. Zhu (竺礼华), X. G. Wu (吴晓光), B. Qi (亓斌), Y. Liu (刘颖), B. Pan (潘波), G. S. Li (李广生), L. H. Li (李立华), Z. M. Wang (王治民), Z. Y. Li (李忠宇), S. Y. Wang (王守宇), Q. Xu (徐强), J. G. Wang (王建国), H. B. Ding (丁怀博), and J. Zhai (翟健)

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 83, NUMBER 2** **FEBRUARY 2011**

Shape coexistence in ^{72}Se investigated following the β decay of ^{72}Br *(12 pages)* 024310
E. A. McCutchan, C. J. Lister, T. Ahn, R. J. Casperson, A. Heinz, G. Ilie, J. Qian, E. Williams, R. Winkler, and V. Werner

Widths in ^{15}C and ^{15}F *(6 pages)* 024311
H. T. Fortune

Level structure and production cross section of $^{12}_{\Xi}$Be studied with coupled-channels antisymmetrized molecular dynamics *(8 pages)* 024312
H. Matsumiya, K. Tsubakihara, M. Kimura, A. Dote, and A. Ohnishi

Excited states in ^{99}Pd *(10 pages)* 024313
S. Sihotra, Z. Naik, S. Kumar, K. Singh, J. Goswamy, N. Singh, R. Kumar, R. P. Singh, S. Muralithar, R. K. Bhowmik, R. Palit, and D. Mehta

Fluctuation properties of the strength function associated with the giant quadrupole resonance in ^{208}Pb *(7 pages)* 024314
Hirokazu Aiba, Masayuki Matsuo, Shigeru Nishizaki, and Toru Suzuki

Renormalized interactions with a realistic single-particle basis *(6 pages)* 024315
Angelo Signoracci, B. Alex Brown, and Morten Hjorth-Jensen

Experimental study of $\Delta I = 1$ bands in ^{111}In *(7 pages)* 024316
P. Banerjee, S. Ganguly, M. K. Pradhan, H. P. Sharma, S. Muralithar, R. P. Singh, and R. K. Bhowmik

Description of pairing correlation in many-body finite systems with density functional theory *(12 pages)* 024317
Guillaume Hupin and Denis Lacroix

Nuclear Reactions

Sensitivity analysis of neutron total and absorption cross sections within the optical model *(10 pages)* 024601
M. T. Pigni, M. Herman, P. Obložinský, and F. S. Dietrich

Influence of dynamical parameters on pre-scission particles and fission probability in heavy-ion collisions *(6 pages)* 024602
M. R. Pahlavani and D. Naderi

Measurements of nuclear γ-ray line emission in interactions of protons and α particles with N, O, Ne, and Si *(15 pages)* 024603
H. Benhabiles-Mezhoud, J. Kiener, J.-P. Thibaud, V. Tatischeff, I. Deloncle, A. Coc, J. Duprat, C. Hamadache, A. Lefebvre-Schuhl, J.-C. Dalouzy, F. de Grancey, F. de Oliveira, F. Dayras, N. de Séréville, M.-G. Pellegriti, L. Lamia, and S. Ouichaoui

Cross section for inelastic neutron "acceleration" by ^{178}Hf^{m2} *(8 pages)* 024604
S. A. Karamian and J. J. Carroll

Evidence of quasifission in the ^{16}O + ^{238}U reaction at sub-barrier energies *(5 pages)* 024605
K. Banerjee, T. K. Ghosh, S. Bhattacharya, C. Bhattacharya, S. Kundu, T. K. Rana, G. Mukherjee, J. K. Meena, J. Sadhukhan, S. Pal, P. Bhattacharya, K. S. Golda, P. Sugathan, and R. P. Singh

Comparison of the ^{7}Li(^{18}O,^{17}N)^{8}Be and ^{18}O(d,^{3}He)^{17}N reactions *(8 pages)* 024606
A. T. Rudchik, Yu. M. Stepanenko, K. W. Kemper, A. A. Rudchik, O. A. Ponkratenko, E. I. Koshchy, S. Kliczewski, K. Rusek, A. Budzanowski, S. Yu. Mezhevych, I. Skwirczyńska, R. Siudak, B. Czech, A. Szczurek, J. Choiński, and L. Głowacka

Breakup threshold anomaly in the near-barrier elastic scattering of ^{6}Li + ^{116,112}Sn *(7 pages)* 024607
N. N. Deshmukh, S. Mukherjee, D. Patel, N. L. Singh, P. K. Rath, B. K. Nayak, D. C. Biswas, S. Santra, E. T. Mirgule, L. S. Danu, Y. K. Gupta, A. Saxena, R. K. Choudhury, R. Kumar, J. Lubian, C. C. Lopes, E. N. Cardozo, and P. R. S. Gomes

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 83, NUMBER 2** **FEBRUARY 2011**

Isospin-dependent multifragmentation of relativistic projectiles *(21 pages)* 024608
R. Ogul *et al.*

Isomeric cross section of the ^{197}Au(n,2n) reaction *(10 pages)* 024609
A. Tsinganis, M. Diakaki, M. Kokkoris, A. Lagoyannis, E. Mara, C. T. Papadopoulos, and R. Vlastou

Relativistic Nuclear Collisions

Strange and multistrange particle production in Au + Au collisions at $\sqrt{s_{NN}} = 62.4$ GeV *(16 pages)* 024901
M. M. Aggarwal *et al.* (STAR Collaboration)

Strong longitudinal color-field effects in pp collisions at energies available at the CERN Large Hadron Collider *(12 pages)* 024902
V. Topor Pop, M. Gyulassy, J. Barrette, C. Gale, and A. Warburton

Double-photon exclusive processes with heavy-quark–heavy-antiquark pairs in high-energy Pb-Pb collisions at energies available at the CERN Large Hadron Collider *(7 pages)* 024903
M. Kłusek-Gawenda, A. Szczurek, M. V. T. Machado, and V. G. Serbo

Dilepton production in schematic causal viscous hydrodynamics *(11 pages)* 024904
Taesoo Song, Kyong Chol Han, and Che Ming Ko

Deciphering azimuthal correlations in relativistic heavy-ion collisions *(8 pages)* 024905
Tomasz Cetner, Katarzyna Grebieszkow, and Stanisław Mrówczyński

Bulk viscosity and relaxation time of causal dissipative relativistic fluid dynamics *(10 pages)* 024906
Xu-Guang Huang, Takeshi Kodama, Tomoi Koide, and Dirk H. Rischke

Nucleus-nucleus interaction between boosted nuclei *(6 pages)* 024907
Wen Hui Long and Carlos A. Bertulani

Path-length dependence of energy loss within in-medium showers *(7 pages)* 024908
Thorsten Renk

Nuclear modification factors of ϕ mesons in d + Au, Cu + Cu, and Au + Au collisions at $\sqrt{s_{NN}} = 200$ GeV *(10 pages)* 024909
A. Adare *et al.* (PHENIX Collaboration)

Indications of early thermalization in relativistic heavy-ion collisions *(6 pages)* 024910
Piotr Bożek and Iwona Wyskiel-Piekarska

Ridge formation induced by jets in pp collisions at 7 TeV *(5 pages)* 024911
Rudolph C. Hwa and C. B. Yang

Viscous QCD matter in a hybrid hydrodynamic+Boltzmann approach *(16 pages)* 024912
Huichao Song, Steffen A. Bass, and Ulrich Heinz

Charged-particle multiplicity and pseudorapidity distributions measured with the PHOBOS detector in Au + Au, Cu + Cu, d + Au, and p + p collisions at ultrarelativistic energies *(24 pages)* 024913
B. Alver *et al.*

Balance functions reexamined *(4 pages)* 024914
A. Bialas

Hadronic Physics and QCD

Exclusive neutral pion electroproduction in the deeply virtual regime *(14 pages)* 025201
E. Fuchey *et al.* (Jefferson Lab Hall A Collaboration)

Polarization effects in the $\bar{N} + N \to \pi + \ell^+ + \ell^-$ reaction: General analysis and numerical estimations *(8 pages)* 025202
G. I. Gakh, A. P. Rekalo, E. Tomasi-Gustafsson, J. Boucher, and A. G. Gakh

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 83, NUMBER 2** **FEBRUARY 2011**

Two-photon exchange in elastic $e\pi$ scattering *(5 pages)* 025203
Dmitry Borisyuk and Alexander Kobushkin

Regions of different critical behavior of the two-flavor Nambu–Jona-Lasinio model *(7 pages)* 025204
Juan Xiong, Meng Jin, and Jiarong Li

Strong $D^* \to D\pi$ and $B^* \to B\pi$ couplings *(5 pages)* 025205
Bruno El-Bennich, Mikhail A. Ivanov, and Craig D. Roberts

Half-Skyrmions, tensor forces, and symmetry energy in cold dense matter *(7 pages)* 025206
Hyun Kyu Lee, Byung-Yoon Park, and Mannque Rho

Scaling and resonances in elementary $K^+\Lambda$ photoproduction *(11 pages)* 025207
R. A. Schumacher and M. M. Sargsian

Regge phenomenology of pion photoproduction off the nucleon at forward angles *(18 pages)* 025208
Byung Geel Yu, Tae Keun Choi, and W. Kim

Electroweak Interaction, Symmetries

Parametric resonance enhancement in neutron interferometry and application for the search for non-Newtonian gravity *(10 pages)* 025501
Vladimir Gudkov, Hirohiko. M. Shimizu, and Geoffrey L. Greene

Nuclear Astrophysics

Stellar weak decay rates in neutron-deficient medium-mass nuclei *(17 pages)* 025801
P. Sarriguren

Theoretical evaluation of the reaction rates for ^{26}Al$(n,p)^{26}$Mg and ^{26}Al$(n,\alpha)^{23}$Na *(9 pages)* 025802
B. M. Oginni, C. Iliadis, and A. E. Champagne

Anisotropic electronic screening and damping in magnetars *(12 pages)* 025803
Rishi Sharma and Sanjay Reddy

Hyperon stars at finite temperature in the Brueckner theory *(6 pages)* 025804
G. F. Burgio, H.-J. Schulze, and A. Li (李昂)

Strange hadronic stars in relativistic mean-field theory with the FSUGold parameter set *(8 pages)* 025805
Chen Wu and Zhongzhou Ren

BRIEF REPORTS

Decay properties of long-lived isomers in the odd-odd $N = 81$ nucleus ^{146}Tb compared to the ^{148}Ho and ^{150}Tm nuclei *(4 pages)* 027301
J. Kownacki, Ch. Droste, T. Morek, E. Ruchowska, R. M. Lieder, M. Kisieliński, M. Kowalczyk, J. Andrzejewski, J. Perkowski, P. J. Napiorkowski, K. Wrzosek-Lipska, M. Zielińska, A. Kordyasz, A. Korman, K. Hadyńska-Klęk, E. Grodner, J. Mierzejewski, and J. Srebrny

Comparison of shell model results for some properties of even-even Ge isotopes *(4 pages)* 027302
S. J. Q. Robinson, L. Zamick, and Y. Y. Sharon

Characterization of isomers in the neutron-rich odd-odd nucleus ^{156}Pm *(4 pages)* 027303
P. C. Sood, M. Sainath, R Gowrishankar, and K. Vijay Sai

Stability against α decay of some recently observed superheavy elements *(4 pages)* 027601
Partha Roy Chowdhury, G. Gangopadhyay, and Abhijit Bhattacharyya

Rigorous pion electromagnetic form factor behavior in the spacelike region *(4 pages)* 028201
M. Bělička, S. Dubnička, A. Z. Dubničková, and A. Liptaj

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 83, NUMBER 2** **FEBRUARY 2011**

Reactions on ^{40}Ar involving solar neutrinos and neutrinos from core-collapsing supernovae *(4 pages)* 028801
Myung-Ki Cheoun, Eunja Ha, and Toshitaka Kajino

ERRATA

Erratum: Decay study of ^{114}Tc with a Penning trap [Phys. Rev. C **83**, 011301(R) (2011)] *(1 page)* . . . . . 029901(E)
J. Rissanen, J. Kurpeta, V.-V. Elomaa, T. Eronen, J. Hakala, A. Jokinen, I. D. Moore, P. Karvonen, A. Płochocki, L. Próchniak, H. Penttilä, S. Rahaman, M. Reponen, A. Saastamoinen, J. Szerypo, W. Urban, C. Weber, and J. Äystö

Erratum: Neutron spin rotation in $\vec{n}$-d scattering [Phys. Rev. C **78**, 014002 (2008)] *(2 pages)* . . . . . 029902(E)
R. Schiavilla, M. Viviani, L. Girlanda, A. Kievsky, and L. E. Marcucci