

PHYSICAL REVIEW CTM

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 2469-9985)

PERIODICALS

Postmaster send address changes to:

PHYSICAL REVIEW C
APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 103, NUMBER 6

CONTENTS

JUNE 2021

EDITORIALS AND ANNOUNCEMENTS

Editorial: PRC's 50th Anniversary 1970–2020 (2 pages) 060001

LETTERS

Nuclear Structure

β -delayed two-proton decay of ^{27}S at the proton-drip line (6 pages) L061301
G. Z. Shi (石国柱) *et al.*

Observation of $^6\text{He} + t$ cluster states in ^9Li (6 pages) L061302
W. H. Ma (马维虎), D. Patel, Y. Y. Yang (杨彦云), J. S. Wang (王建松), Y. Kanada-En'yo,
R. F. Chen (陈若富), J. Lubian, Y. L. Ye (叶沿林), Z. H. Yang (杨再宏), Z. Z. Ren (任中洲),
S. Mukherjee, J. B. Ma (马军兵), S. L. Jin (金仕纶), P. Ma (马朋), J. X. Li (李加兴),
Y. S. Song (宋玉收), Q. Hu (胡强), Z. Bai (白真), M. R. Huang (黄美容), X. Q. Liu (刘星泉),
Y. J. Zhou (周远杰), J. Chen (陈杰), Z. H. Gao (高志浩), F. F. Duan (段芳芳), S. Y. Jin (金树亚),
S. W. Xu (许世伟), G. M. Yu (余功明), G. Z. Shi (石国柱), Q. Wang (王琦), T. F. Wang (王涛峰),
X. Y. Ju (巨欣跃), Z. G. Hu (胡正国), Y. H. Zhang (张玉虎), X. H. Zhou (周小红), H. S. Xu (徐瑚珊),
G. Q. Xiao (肖国青), and W. L. Zhan (詹文龙)

Nuclear Reactions

Nonequilibrium information entropy approach to ternary fission of actinides (6 pages) L061601
G. Röpke, J. B. Natowitz, and H. Pais

ARTICLES

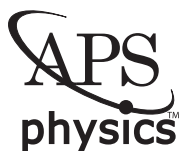
Nucleon-Nucleon Interaction, Few-Body Systems

Efimov resonances above four-boson threshold (5 pages) 064001
A. Deltuva

Constraining the nonanalytic terms in the isospin-asymmetry expansion of the nuclear equation of state (12 pages) 064002
Pengsheng Wen and Jeremy W. Holt

Nuclear Structure

Electric dipole polarizability in neutron-rich Sn isotopes as a probe of nuclear isovector properties (8 pages) 064301
Z. Z. Li (李征征), Y. F. Niu (牛一斐), and W. H. Long (龙文辉)



Copyright 2021 by American Physical Society



2469-9985(202106)103:6;1-1

(Continued)

The editors and referees of PRC find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. C 86, 010001 (2012).

CONTENTS - *Continued*

PHYSICAL REVIEW C

THIRD SERIES, VOLUME 103, NUMBER 6

JUNE 2021

Generator-coordinate methods with symmetry-restored Hartree-Fock-Bogoliubov wave functions for large-scale shell-model calculations (9 pages)	064302
Noritaka Shimizu, Takahiro Mizusaki, Kazunari Kaneko, and Yusuke Tsunoda	
Isomeric states in ^{256}Rf (6 pages)	064303
J. Khuyagbaatar, H. Brand, R. A. Cantemir, Ch. E. Düllmann, M. Götz, S. Götz, F. P. Heßberger, E. Jäger, B. Kindler, J. Krier, N. Kurz, B. Lommel, B. Schausten, and A. Yakushev	
Nuclear ground states in a consistent implementation of the time-dependent density matrix approach (14 pages)	064304
Matthew Barton, Paul Stevenson, and Arnau Rios	
Configuration mixing and K -forbidden $E2$ decays (6 pages)	064305
P. M. Walker and P. D. Stevenson	
Baryonic matter and the medium modification of the baryon masses (14 pages)	064306
Nam-Yong Ghim, Ghil-Seok Yang, Hyun-Chul Kim, and Ulugbek Yakshiev	
Nuclear charge-exchange excitations based on a relativistic density-dependent point-coupling model (17 pages)	064307
D. Vale, Y. F. Niu, and N. Paar	
First spectroscopic study of ^{63}V at the $N = 40$ island of inversion (9 pages)	064308
M. M. Juhász <i>et al.</i>	
$^{50}\text{Ti}(d, p)^{51}\text{Ti}$: Single-neutron energies in the $N = 29$ isotones, and the $N = 32$ subshell closure (8 pages)	064309
L. A. Riley, J. M. Nebel-Crosson, K. T. Macon, G. W. McCann, L. T. Baby, D. Caussyn, P. D. Cottle, J. Esparza, K. Hanselman, K. W. Kemper, E. Temanson, and I. Wiedenhöver	
State densities of heavy nuclei in the static-path plus random-phase approximation (13 pages)	064310
P. Fanto and Y. Alhassid	
Cluster correlation and nuclear vorticity in low-lying 1^- states of ^{24}Mg (7 pages)	064311
Yohei Chiba, Yoshiko Kanada-En'yo, and Yuki Shikata	
Microscopic study of structure of light- and medium-mass even-even cadmium isotopes (9 pages)	064312
Shivali Sharma, Rani Devi, and S. K. Khosa	
Microscopic analysis of low-energy spin and orbital magnetic dipole excitations in deformed nuclei (14 pages)	064313
V. O. Nesterenko, P. I. Vishnevskiy, J. Kvasil, A. Repko, and W. Kleinig	
Finite-size instabilities in finite-range forces (7 pages)	064314
C. Gonzalez-Boquera, M. Centelles, X. Viñas, and L. M. Robledo	
Role of tensor terms of the Skyrme energy-density functional on neutron deformed magic numbers in the rare-earth region (9 pages)	064315
Kai-Wen Kelvin-Lee (李凯文), Meng-Hock Koh (辜明福), and L. Bonneau	
Beam-normal single-spin asymmetry in elastic scattering of electrons from a spin-0 nucleus (12 pages)	064316
Oleksandr Koshchii, Mikhail Gorchtein, Xavier Roca-Maza, and Hubert Spiesberger	
Application of an <i>ab-initio</i> -inspired energy density functional to nuclei: Impact of the effective mass and the slope of the symmetry energy on bulk and surface properties (13 pages)	064317
Stefano Burrello, Jérémy Bonnard, and Marcella Grasso	
Spectroscopy of ^{33}Mg with knockout reactions (11 pages)	064318
D. Bazin, N. Aoi, H. Baba, J. Chen, H. Crawford, P. Doornenbal, P. Fallon, K. Li, J. Lee, M. Matsushita, T. Motobayashi, H. Sakurai, H. Scheit, D. Steppenbeck, R. Stroberg, S. Takeuchi, H. Wang, K. Yoneda, and C. X. Yuan	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW C

THIRD SERIES, VOLUME 103, NUMBER 6

JUNE 2021

Microscopic investigation on the existence of transverse wobbling under the effect of rotational alignment: The ^{136}Nd case (9 pages)	064319
Fang-Qi Chen and C. M. Petrache	
Configuration mixing in ^{28}Mg and the $^{26}\text{Mg}(t, p)^{28}\text{Mg}$ reaction (13 pages)	064320
D. G. McNeel, A. H. Wuosmaa, S. A. Kuvvin, J. Smith, B. B. Back, J. Chen, C. R. Hoffman, B. P. Kay, G. L. Wilson, D. K. Sharp, R. M. Clark, H. L. Crawford, P. Fallon, and A. O. Macchiavelli	
Learning about the structure of giant resonances from their γ decay (8 pages)	064321
W. L. Lv (吕万里), Y. F. Niu (牛一斐), and G. Colò	
Microscopic structure and mathematical background of the multiconfigurational dynamical symmetry (8 pages)	064322
J. Cseh	
Nuclear symmetry energy from neutron skins and pure neutron matter in a Bayesian framework (18 pages)	064323
William G. Newton and Gabriel Crocombe	
Reexamining the variational two-particle reduced density matrix for nuclear systems (13 pages)	064324
J. G. Li, N. Michel, W. Zuo, and F. R. Xu	
Structure of $^{46,47}\text{Ca}$ from the β^- decay of $^{46,47}\text{K}$ in the framework of the nuclear shell model (10 pages)	064325
Priyanka Choudhary, Anil Kumar, Praveen C. Srivastava, and Toshio Suzuki	
Tensor-force effects on shell-structure evolution in $N = 82$ isotones and $Z = 50$ isotopes in the relativistic Hartree-Fock theory (14 pages)	064326
Zhiheng Wang (王之恒), Tomoya Naito (内藤智也), and Haozhao Liang (梁豪兆)	
Tensor force role in β decays analyzed within the Gogny-interaction shell model (7 pages)	064327
B. Dai, B. S. Hu, Y. Z. Ma, J. G. Li, S. M. Wang, C. W. Johnson, and F. R. Xu	
Persistence of the $Z = 28$ shell gap in $A = 75$ isobars: Identification of a possible $(1/2^-)$ μs isomer in ^{75}Co and β decay to ^{75}Ni (12 pages)	064328
S. Escrig <i>et al.</i>	
Nuclear Reactions	
Evidence of the effect of strong stripping channels on the dynamics of the $^8\text{Li} + ^{58}\text{Ni}$ reaction (10 pages)	064601
O. C. B. Santos, R. Lichtenthaler, K. C. C. Pires, U. Umbelino, E. O. N. Zevallos, A. L. de Lara, A. S. Serra, V. Scardueli, J. Alcantara-Nunez, V. Guimaraes, A. Lepine-Szily, J. C. Zamora, A. M. Moro, S. Appannababu, M. Assuncao, A. Barioni, R. Linares, V. A. B. Zagatto, P. N. de Faria, M. C. Morais, V. Morcelle, J. M. B. Shorto, and Jin Lei	
Coupling dynamical and statistical mechanisms for baryonic cluster production in nucleus collisions of intermediate and high energies (16 pages)	064602
A. S. Botvina, N. Buyukcizmeci, and M. Bleicher	
Modeling quasielastic interactions of monoenergetic kaon decay-at-rest neutrinos (19 pages)	064603
A. Nikolakopoulos, V. Pandey, J. Spitz, and N. Jachowicz	
Symmetry potentials and in-medium nucleon-nucleon cross sections within the Nambu–Jona-Lasinio model in relativistic impulse approximation (10 pages)	064604
Si-Na Wei, Rong-Yao Yang, Jing Ye, Niu Li, and Wei-Zhou Jiang	
$^6,7\text{Li} + ^{27}\text{Al}$ reactions close to and below the Coulomb barrier (8 pages)	064605
J. Kuhntreiber, P. Hille, O. Forstner, H. Friedmann, A. Pavlik, and A. Priller	
Assessing the impact of valence sd neutrons and protons on fusion (8 pages)	064606
Varinderjit Singh, J. Vadas, T. K. Steinbach, B. B. Wiggins, S. Hudan, and R. T. deSouza	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW C

THIRD SERIES, VOLUME 103, NUMBER 6

JUNE 2021

$^{13}\text{C}(n, 2n\gamma) ^{12}\text{C}$ γ -ray production in the 14–16 MeV incident neutron energy range (8 pages)	064607
A. M. McEvoy, H. W. Herrmann, Y. Kim, T. S. Sedillo, H. Geppert-Kleinrath, C. R. Brune, T. N. Massey, A. V. Voinov, C. E. Parker, M. S. Rubery, and W. Stoeffl	
 Shadow poles in the alternative parametrization of R -matrix theory (22 pages)	064608
Pablo Ducru, Benoit Forget, Vladimir Sobes, Gerald Hale, and Mark Paris	
Scattering matrix pole expansions for complex wave numbers in R -matrix theory (22 pages)	064609
Pablo Ducru, Benoit Forget, Vladimir Sobes, Gerald Hale, and Mark Paris	
Windowed multipole representation of R -matrix cross sections (31 pages)	064610
Pablo Ducru, Abdulla Alhajri, Isaac Meyer, Benoit Forget, Vladimir Sobes, Colin Josey, and Jingang Liang	
Coulomb corrections to two-particle interactions in artificial traps (9 pages)	064611
Peng Guo	
Radioactive decay of $^{288-296}\text{Og}$ via heavy cluster emission within a modified generalized liquid drop model with a Q -value-dependent preformation factor (13 pages)	064612
K. P. Santhosh, Tinu Ann Jose, and N. K. Deepak	
Influence of entrance channel on multinucleon transfer cross sections (7 pages)	064613
Zhi Cheng (成智) and Xiao Jun Bao (包小军)	
Detailed study of the eikonal reaction theory for the breakup of one-neutron halo nuclei (8 pages)	064614
C. Hebborn and P. Capel	
Impact of noncoplanar degrees of freedom on quasifission contributions with the estimation of unobserved decay channels for the study of $^{196}\text{Pt}^*$ using the dynamical cluster-decay model (8 pages)	064615
Sahila Chopra, Manoj K. Sharma, Peter Oto Hess, Hemdeep, and NeetuMaan	
Theoretical study of evaporation-residue cross sections of superheavy nuclei (8 pages)	064616
Xing-Jian Lv (吕行健), Zi-Yang Yue (岳子洋), Wei-Juan Zhao (赵维娟), and Bing Wang (王兵)	
Production cross section measurements of proton-induced reactions on Nb at energies of 58 to 100 MeV (11 pages)	064617
M. Bakhtiari, L. Mokhtari Oranj, N. S. Jung, and H. S. Lee	
Relativistic Nuclear Collisions	
Exploring theoretical uncertainties in the hydrodynamic description of relativistic heavy-ion collisions (12 pages)	064901
Cheng Chiu and Chun Shen	
Maximum entropy kinetic matching conditions for heavy-ion collisions (12 pages)	064902
Derek Everett, Chandrodoy Chattopadhyay, and Ulrich Heinz	
Modified equilibrium distributions for Cooper-Frye particlization (21 pages)	064903
M. McNelis and U. Heinz	
Probes of the quark-gluon plasma and plasma instabilities (17 pages)	064904
Sigtryggur Hauksson, Sangyong Jeon, and Charles Gale	
Measurement of the prompt-production cross-section ratio $\sigma(\chi_{c2})/\sigma(\chi_{c1})$ in $p\text{Pb}$ collisions at $\sqrt{s_{NN}} = 8.16$ TeV (10 pages)	064905
R. Aaij <i>et al.</i> (LHCb Collaboration)	
Exploring origins for correlations between flow harmonics and transverse momentum in small collision systems (12 pages)	064906
S. H. Lim and J. L. Nagle	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW C

THIRD SERIES, VOLUME 103, NUMBER 6

JUNE 2021

Azimuthal anisotropy measurements of strange and multistrange hadrons in U + U collisions at $\sqrt{s_{NN}} = 193$ GeV at the BNL Relativistic Heavy Ion Collider (20 pages)	064907
M. S. Abdallah <i>et al.</i> (STAR Collaboration)	
Momentum dependence of light nuclei production in p - p , p -Pb, and Pb-Pb collisions at energies available at the CERN Large Hadron Collider (10 pages)	064908
Rui-Qin Wang, Feng-Lan Shao, and Jun Song	
Light nuclei production in a multiphase transport model for relativistic heavy ion collisions (5 pages)	064909
Kai-Jia Sun, Che Ming Ko, and Zi-Wei Lin	
Hadronic effects on charmonium elliptic flows in heavy-ion collisions (5 pages)	064910
Baoyi Chen, Liu Jiang, and Yunpeng Liu	
Fluid velocity from transverse momentum spectra (11 pages)	064911
Anthony Guillen and Jean-Yves Ollitrault	
Hadronic Physics and QCD	
Phase diagram of interacting pion matter and isospin charge fluctuations (11 pages)	065201
O. S. Stashko, O. V. Savchuk, R. V. Poberezhnyuk, V. Vovchenko, and M. I. Gorenstein	
Color dipole model bounds with the gluon-gluon recombination correction (9 pages)	065202
G. R. Boroun and B. Rezaei	
Constituent counting rule and ω photoproduction (6 pages)	065203
Trevor Reed, Christopher Leon, Frank Vera, Lei Guo, and Brian Raue	
Jülich-Bonn-Washington model for pion electroproduction multipoles (22 pages)	065204
M. Mai, M. Döring, C. Granados, H. Haberzettl, Ulf-G. Meißner, D. Rönchen, I. Strakovsky, and R. Workman (Jülich-Bonn-Washington Collaboration)	
Effect of deuteron breakup on the deuteron- Ξ correlation function (12 pages)	065205
Kazuyuki Ogata, Tokuro Fukui, Yuki Kamiya, and Akira Ohnishi	
Electroweak Interaction, Symmetries	
Bayesian analysis of a future β decay experiment's sensitivity to neutrino mass scale and ordering (15 pages)	065501
A. Ashtari Esfahani <i>et al.</i>	
Direct measurement of the mass difference of ^{72}As - ^{72}Ge rules out ^{72}As as a promising β -decay candidate to determine the neutrino mass (8 pages)	065502
Z. Ge, T. Eronen, A. de Roubin, D. A. Nesterenko, M. Hukkanen, O. Beliuskina, R. de Groote, S. Geldhof, W. Gins, A. Kankainen, Á. Koszorús, J. Kotila, J. Kostensalo, I. D. Moore, A. Raggio, S. Rinta-Antila, J. Suhonen, V. Virtanen, A. P. Weaver, A. Zadornaya, and A. Jokinen	
Nuclear Astrophysics	
Investigation of secondary γ -ray angular distributions using the $^{15}\text{N}(p, \alpha_1\gamma)^{12}\text{C}^*$ reaction (16 pages)	065801
R. J. deBoer, A. Boeltzig, K. T. Macon, S. Aguilar, O. Gomez, B. Frentz, S. L. Henderson, R. Kelmar, M. Renaud, G. Seymour, B. Vande Kolk, M. Wiescher, C. R. Brune, S. P. Burcher, K. L. Jones, J. M. Kovoer, M. Febbraro, G. Imbriani, S. Mosby, K. Smith, and R. Toomey	
Roton instabilities in the superfluid outer core of neutron stars (12 pages)	065803
J. A. Gil Granados, A. Muñoz Mateo, and X. Viñas	
Constraining three-nucleon forces with multimessenger data (6 pages)	065804
Andrea Maselli, Andrea Sabatucci, and Omar Benhar	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW C

THIRD SERIES, VOLUME 103, NUMBER 6

JUNE 2021

Determination of the $^{209}\text{Bi}(n, \gamma)^{210\text{g}}\text{Bi}$ cross section using the NICE detector (<i>10 pages</i>)	065805
K. Al-Khasawneh, E. Borris, B. Brückner, P. Erbacher, S. Fiebiger, K. Göbel, T. Heftrich, T. Kisselbach, D. Kurtulgil, C. Langer, M. Reich, R. Reifarh, B. Thomas, M. Volkandt, M. Weigand, K. Eberhardt, and R. Gernhäuser	

COMMENTS

Comment on “Improved many-body expansions from eigenvector continuation” (<i>3 pages</i>)	069801
Péter R. Surján and Ágnes Szabados	