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 76, NUMBER 6 *CONTENTS* **DECEMBER 2007**

EDITORIALS AND ANNOUNCEMENTS

Editorial: Which Wei Wang? *(1 page)* 060001

RAPID COMMUNICATIONS

Z dependence of the $N = 152$ deformed shell gap: In-beam γ-ray spectroscopy of neutron-rich ^{245,246}Pu *(5 pages)* 061301(R)
H. Makii, T. Ishii, M. Asai, K. Tsukada, A. Toyoshima, M. Matsuda, A. Makishima, J. Kaneko, H. Toume, S. Ichikawa, S. Shigematsu, T. Kohno, and M. Ogawa

Inverse-kinematics one-proton pickup with intermediate-energy beams: The ^{9}Be(^{20}Ne,^{21}Na + γ)X reaction *(5 pages)* . . . . . 061302(R)
A. Gade, P. Adrich, D. Bazin, M. D. Bowen, B. A. Brown, C. M. Campbell, J. M. Cook, T. Glasmacher, K. Hosier, S. McDaniel, D. McGlinchery, A. Obertelli, L. A. Riley, K. Siwek, J. A. Tostevin, and D. Weisshaar

Long standing problem of ^{210}Bi and the realistic proton-neutron effective interaction *(4 pages)* . . . . . 061303(R)
L. Coraggio, A. Covello, A. Gargano, and N. Itaco

Distinctive features of Coulomb-related emissions in peripheral heavy ion collisions at Fermi energies *(5 pages)* . . . . . 061601(R)
S. Piantelli, P. R. Maurenzig, A. Olmi, L. Bardelli, M. Bini, G. Casini, A. Mangiarotti, G. Pasquali, G. Poggi, and A. A. Stefanini

Electromagnetic form factors and the hypercentral constituent quark model *(5 pages)* . . . . . 062201(R)
M. De Sanctis, M. M. Giannini, E. Santopinto, and A. Vassallo

ARTICLES

Nucleon-Nucleon Interaction, Few-Body Systems

Low energy proton-proton scattering in effective field theory *(12 pages)* 064001
Shung-ichi Ando, Jae Won Shin, Chang Ho Hyun, and Seung-Woo Hong

Equivalent hyperon-nucleon interactions in low-momentum space *(8 pages)* 064002
M. Kohno, R. Okamoto, H. Kamada, and Y. Fujiwara

Wilsonian renormalization group equation for nuclear current operators *(5 pages)* 064003
A. N. Kvinikhidze and B. Blankleider

Copyright 2007 by The American Physical Society

0556-2813(200712)76:6;1-3

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 6** **DECEMBER 2007**

Nuclear Structure

γ-ray spectroscopy of the neutron-rich nuclei ^{89}Rb, ^{92}Y, and ^{93}Y with multinucleon transfer reactions *(10 pages)* 064301
D. Bucurescu, C. Rusu, N. Mărginean, C. A. Ur, G. de Angelis, L. Corradi, D. Bazzacco, S. Beghini, F. Della Vedova, G. Duchene, E. Farnea, T. Faul, E. Fioretto, A. Gadea, W. Gelletly, B. Guiot, M. Ionescu-Bujor, A. Iordăchescu, S. D. Landown, S. M. Lenzi, S. Lunardi, P. Mason, C. Mihai, R. Mărginean, R. Menegazzo, G. Montagnoli, D. Napoli, Zs. Podolyák, P. H. Regan, F. Scarlassara, A. M. Stefanini, G. Suliman, S. Szilner, M. Trotta, J. J. Valiente-Dobón, and Y. H. Zhang

Intrinsic state lifetimes in ^{103}Pd and ^{106,107}Cd *(8 pages)* 064302
S. F. Ashley, P. H. Regan, K. Andgren, E. A. McCutchan, N. V. Zamfir, L. Amon, R. B. Cakirli, R. F. Casten, R. M. Clark, W. Gelletly, G. Gürdal, K. L. Keyes, D. A. Meyer, M. N. Erduran, A. Papenberg, N. Pietralla, C. Plettner, G. Rainovski, R. V. Ribas, N. J. Thomas, J. Vinson, D. D. Warner, V. Werner, E. Williams, H. L. Liu, and F. R. Xu

E(5) and X(5) shape phase transitions within a Skyrme-Hartree-Fock + BCS approach *(8 pages)* 064303
R. Rodríguez-Guzmán and P. Sarriguren

Measurement of conversion electrons with the ^{208}Pb(p, n)^{208}Bi reaction and derivation of the shell model proton neutron hole interaction from the properties of ^{208}Bi *(24 pages)* 064304
K. H. Maier, T. Kibédi, G. D. Dracoulis, P. Boutachkov, A. Aprahamian, A. P. Byrne, P. M. Davidson, G. J. Lane, M. Marie-Jeanne, P. Nieminen, and H. Watanabe

Random interactions with isospin *(8 pages)* 064305
Michael W. Kirson and Jonathan A. Mizrahi

Particle-number conservation in static-path approximation for thermal superfluid systems *(6 pages)* 064306
K. Kaneko and A. Schiller

β decay study of ^{168}Hf and a test of new geometrical models *(12 pages)* 064307
E. A. McCutchan, R. F. Casten, V. Werner, A. Wolf, Z. Berant, R. J. Casperson, A. Heinz, R. Lüttke, B. Shoraka, J. R. Terry, E. Williams, and R. Winkler

Reevaluation of the reported observation of the $^{\ 4}_{\Lambda\Lambda}$H hypernucleus *(10 pages)* 064308
S. D. Randeniya and E. V. Hungerford

Semiclassical description of a triaxial rigid rotor *(9 pages)* 064309
A. A. Raduta, R. Budaca, and C. M. Raduta

Validating relativistic models of nuclear structure against theoretical, experimental, and observational constraints *(7 pages)* 064310
J. Piekarewicz

State-dependent calculation of three-body cluster energy for nuclear matter and the validity of the lowest order constrained variational formalism *(8 pages)* 064311
M. Modarres, A. Rajabi, and H. R. Moshfegh

Exactly separable version of the Bohr Hamiltonian with the Davidson potential *(17 pages)* 064312
Dennis Bonatsos, E. A. McCutchan, N. Minkov, R. F. Casten, P. Yotov, D. Lenis, D. Petrellis, and I. Yigitoglu

Particle decay of ^{12}Be excited states *(10 pages)* 064313
R. J. Charity, S. A. Komarov, L. G. Sobotka, J. Clifford, D. Bazin, A. Gade, Jenny Lee, S. M. Lukyanov, W. G. Lynch, M. Mocko, S. P. Lobastov, A. M. Rogers, A. Sanetullaev, M. B. Tsang, M. S. Wallace, S. Hudan, C. Metelko, M. A. Famiano, A. H. Wuosmaa, and M. J. van Goethem

Generalized Wick's theorem for multiquasiparticle overlaps as a limit of Gaudin's theorem *(12 pages)* 064314
Sara Perez-Martin and Luis M. Robledo

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 6** **DECEMBER 2007**

Low-lying collective excitations of nuclei as a semiclassical response *(16 pages)* 064315
A. M. Gzhebinsky, A. G. Magner, and S. N. Fedotkin

BCS-BEC crossover of neutron pairs in symmetric and asymmetric nuclear matter *(11 pages)* 064316
J. Margueron, H. Sagawa, and K. Hagino

Spin and parity assignments for ^{94,95}Mo neutron resonances *(10 pages)* 064317
S. A. Sheets, U. Agvaanluvsan, J. A. Becker, F. Bečvář, T. A. Bredeweg, R. C. Haight, M. Krtička, M. Jandel, G. E. Mitchell, J. M. O'Donnell, W. E. Parker, R. Reifarth, R. S. Rundberg, E. I. Sharapov, I. Tomandl, J. L. Ullmann, D. J. Vieira, J. M. Wouters, J. B. Wilhelmy, and C. Y. Wu

Reexamining the neutron skin thickness within a density dependent hadronic model *(7 pages)* 064318
S. S. Avancini, J. R. Marinelli, D. P. Menezes, M. M. W. Moraes, and A. S. Schneider

Quantum Monte Carlo calculations of electroweak transition matrix elements in $A = 6, 7$ nuclei *(9 pages)* 064319
Muslema Pervin, Steven C. Pieper, and R. B. Wiringa

Particle-number-projected thermal pairing *(13 pages)* 064320
Nguyen Dinh Dang

Nuclear shapes of highly deformed bands in ^{171,172}Hf and neighboring Hf isotopes *(10 pages)* 064321
Y. C. Zhang, W. C. Ma, A. V. Afanasjev, G. B. Hagemann, J. Begnaud, M. P. Carpenter, P. Chowdhury, D. M. Cullen, M. K. Djongolov, D. J. Hartley, R. V. F. Janssens, T. L. Khoo, F. G. Kondev, T. Lauritsen, E. F. Moore, E. Ngijoi-Yogo, S. Ødegård, L. L. Riedinger, S. V. Rigby, D. G. Roux, D. T. Scholes, R. B. Yadav, Jing-Ye Zhang, and S. Zhu

Nuclear Reactions

Formation of the isomeric pairs ^{139}Nd^{m,g} and ^{141}Nd^{m,g} in proton and ^{3}He-particle-induced nuclear reactions *(6 pages)* 064601
K. Hilgers, S. Sudár, and S. M. Qaim

Three-body description of direct nuclear reactions: Comparison with the continuum discretized coupled channels method *(11 pages)* 064602
A. Deltuva, A. M. Moro, E. Cravo, F. M. Nunes, and A. C. Fonseca

Investigation of β decay of ^{113}Cd *(10 pages)* 064603
P. Belli, R. Bernabei, N. Bukilic, F. Cappella, R. Cerulli, C. J. Dai, F. A. Danevich, J. R. de Laeter, A. Incicchitti, V. V. Kobychev, S. S. Nagorny, S. Nisi, F. Nozzoli, D. V. Poda, D. Prosperi, V. I. Tretyak, and S. S. Yurchenko

Fission rate and transient time with a quantum master equation *(7 pages)* 064604
V. V. Sargsyan, Yu. V. Palchikov, Z. Kanokov, G. G. Adamian, and N. V. Antonenko

Critical view of WKB decay widths *(8 pages)* 064605
N. G. Kelkar and H. M. Castañeda

Thermal and chemical freeze-out in spectator fragmentation *(13 pages)* 064606
W. Trautmann *et al.* (ALADIN Collaboration)

Hard pion bremsstrahlung in the Coulomb region *(7 pages)* 064607
Göran Fäldt and Ulla Tengblad

Landau-Zener effect in fission *(11 pages)* 064608
M. Mirea, L. Tassan-Got, C. Stephan, C. O. Bacri, and R. C. Bobulescu

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 76, NUMBER 6 DECEMBER 2007

Measurement of the complete nuclide production and kinetic energies of the system ^{136}Xe+hydrogen at 1 GeV per nucleon *(16 pages)* 064609
P. Napolitani, K.-H. Schmidt, L. Tassan-Got, P. Armbruster, T. Enqvist, A. Heinz, V. Henzl, D. Henzlova, A. Kelić, R. Pleskač, M. V. Ricciardi, C. Schmitt, O. Yordanov, L. Audouin, M. Bernas, A. Lafriaskh, F. Rejmund, C. Stéphan, J. Benlliure, E. Casarejos, M. Fernandez Ordonez, J. Pereira, A. Boudard, B. Fernandez, S. Leray, C. Villagrasa, and C. Volant

Photonuclear reactions of actinide and pre-actinide nuclei at intermediate energies *(5 pages)* 064610
Tapan Mukhopadhyay and D. N. Basu

Ergodicity of the Δ_3 statistic and purity of neutron resonance data *(11 pages)* 064611
Declan Mulhall, Zachary Huard, and Vladimir Zelevinsky

Three-body continuum energy correlations in Borromean halo nuclei. III. Short-range external fields *(14 pages)* 064612
B. V. Danilin, J. S. Vaagen, T. Rogde, S. N. Ershov, I. J. Thompson, and M. V. Zhukov

Relativistic Nuclear Collisions

Forward-backward rapidity correlations at all rapidities *(4 pages)* 064901
P. Brogueira, J. Dias de Deus, and José Guilherme Milhano

Constraining relativistic models through heavy ion collisions *(7 pages)* 064902
D. P. Menezes, C. Providência, M. Chiapparini, M. E. Bracco, A. Delfino, and M. Malheiro

Chemical equilibrium in collisions of small systems *(8 pages)* 064903
I. Kraus, J. Cleymans, H. Oeschler, K. Redlich, and S. Wheaton

Forward Λ production and nuclear stopping power in d+Au collisions at $\sqrt{s_{NN}} = 200$ GeV *(11 pages)* 064904
B. I. Abelev *et al.* (STAR Collaboration)

Phenomenology of elastic energy loss *(6 pages)* 064905
Thorsten Renk

J/ψ suppression and the decrease of nuclear absorption with increasing energy *(6 pages)* 064906
A. Capella and E. G. Ferreiro

Radiative jet energy loss in a three-dimensional hydrodynamical medium and high p_T azimuthal asymmetry of π_0 suppression at mid and forward rapidity in Au+Au collisions at $\sqrt{s_{NN}} = 200$ GeV *(9 pages)* 064907
Guang-You Qin, Jörg Ruppert, Simon Turbide, Charles Gale, Chiho Nonaka, and Steffen A. Bass

Influence of impact parameter fluctuations on transverse momentum fluctuations *(10 pages)* 064908
Katarzyna Grebieszkow

Hadronic Physics and QCD

Dynamical coupled-channels model of πN scattering in the $W \leqslant 2$ GeV nucleon resonance region *(13 pages)* 065201
B. Juliá-Díaz, T.-S. H. Lee, A. Matsuyama, and T. Sato

Analysis of the consistency of kaon photoproduction data with Λ in the final state *(7 pages)* 065202
P. Bydžovský and T. Mart

Simple parameterization of nuclear attenuation data *(6 pages)* 065203
N. Akopov, L. Grigoryan, and Z. Akopov

Spectral functions of scalar mesons *(10 pages)* 065204
Francesco Giacosa and Giuseppe Pagliara

The $\pi^- p \to \eta n$ reaction at low energies in a chiral constituent quark model *(11 pages)* 065205
Xian-Hui Zhong, Qiang Zhao, Jun He, and Bijan Saghai

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 76, NUMBER 6 DECEMBER 2007

Influence of meson widths on Yukawa-like potentials and lattice correlation functions *(7 pages)* 065206
V. V. Flambaum and E. V. Shuryak

Determination of nuclear parton distribution functions and their uncertainties at next-to-leading order *(16 pages)* 065207
M. Hirai, S. Kumano, and T.-H. Nagai

Inclusive electron spectrum in the region of pion production in electron-nucleus scattering and the effect of the quasi-elastic interaction *(4 pages)* 065208
Hiroki Nakamura, Tadaaki Nasu, Makoto Sakuda, and Omar Benhar

Densities, parton distributions, and measuring the nonspherical shape of the nucleon *(5 pages)* 065209
Gerald A. Miller

Mass and width of strange baryon resonances using QCD sum rules *(7 pages)* 065210
Janardan P. Singh and Frank X. Lee

In-medium modification and decay asymmetry of ω mesons in cold nuclear matter *(8 pages)* 065211
A. I. Titov and B. Kämpfer

Existence of mesons after deconfinement *(6 pages)* 065212
Fabian Brau and Fabien Buisseret

Nuclear Astrophysics

Triaxial nuclear models and the outer crust of nonaccreting cold neutron stars *(6 pages)* 065801
Lu Guo, M. Hempel, J. Schaffner-Bielich, and J. A. Maruhn

Remarks concerning kaon condensation in neutron stars *(9 pages)* 065802
Guo-hua Wang, Wei-jie Fu, and Yu-xin Liu

Measurement of ^{23}Mg$(p,\gamma)^{24}$Al resonance energies *(5 pages)* 065803
D. W. Visser, C. Wrede, J. A. Caggiano, J. A. Clark, C. Deibel, R. Lewis, A. Parikh, and P. D. Parker

Astrophysical $S(E)$ factor of the ^{15}N$(p,\alpha)^{12}$C reaction at sub-Coulomb energies via the Trojan horse method *(15 pages)* 065804
M. La Cognata, S. Romano, C. Spitaleri, S. Cherubini, V. Crucillà, M. Gulino, L. Lamia, R. G. Pizzone, A. Tumino, R. Tribble, Changbo Fu, V. Z. Goldberg, A. M. Mukhamedzhanov, D. Schmidt, G. Tabacaru, L. Trache, and B. F. Irgaziev

BRIEF REPORTS

Structure of the negative parity bands in ^{125}Xe *(4 pages)* 067301
C.-B. Moon, C. S. Lee, T. Komatsubara, Y. Sasaki, and K. Furuno

Density functional theory for self-bound systems *(3 pages)* 067302
Nir Barnea

Cross sections of neutron-rich nuclei from projectile fragmentation: Canonical thermodynamic model estimates *(4 pages)* 067601
G. Chaudhuri, S. Das Gupta, W. G. Lynch, M. Mocko, and M. B. Tsang

Measurement of the thermal neutron capture cross section of ^{180}W *(4 pages)* 067602
W. G. Kang, Y. D. Kim, J. I. Lee, I. S. Hahn, A. R. Kim, and H. J. Kim

Threshold anomaly in the elastic scattering of ^{6}He on ^{209}Bi *(4 pages)* 067603
A. R. Garcia, J. Lubian, I. Padron, P. R. S. Gomes, T. Lacerda, V. N. Garcia, A. Gómez Camacho, and E. F. Aguilera

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 6** **DECEMBER 2007**

Σ-nuclear spin-orbit coupling from two-pion exchange *(4 pages)* 068201
N. Kaiser

Λd correlations from the ^{4}He(stopped-K^-, d) reaction *(4 pages)* 068202
T. Suzuki, H. Bhang, J. Chiba, S. Choi, Y. Fukuda, T. Hanaki, R. S. Hayano, M. Iio, T. Ishikawa, S. Ishimoto, T. Ishiwatari, K. Itahashi, M. Iwai, M. Iwasaki, P. Kienle, J. H. Kim, Y. Matsuda, H. Ohnishi, S. Okada, H. Outa, M. Sato, S. Suzuki, D. Tomono, E. Widmann, T. Yamazaki, and H. Yim (KEK-PS E549 Collaboration)

Neutral current coherent pion production *(4 pages)* 068501
L. Alvarez-Ruso, L. S. Geng, and M. J. Vicente Vacas

COMMENTS

Comment on "Hadronic ^{3}Heη production near threshold" *(2 pages)* 069801
K. P. Khemchandani, N. G. Kelkar, and B. K. Jain

ERRATA

Erratum: Two- and three-charged-particles nuclear scattering in momentum space: A two-potential theory and a boundary condition model [Phys. Rev. C **73**, 054001 (2006)] *(1 page)* . . . . . 069901(E)
Shinsho Oryu

Erratum: Renormalization group analysis of nuclear current operators [Phys. Rev. C **74**, 034004 (2006)] *(1 page)* . . . . . 069902(E)
Satoshi X. Nakamura and Shung-ichi Ando

Publisher's Note: Selection of special orientations in relativistic collisions of deformed heavy nuclei [Phys. Rev. C **76**, 051902 (2007)] *(1 page)* . . . . . 069903(E)
C. Nepali, G. Fai, and D. Keane

Publisher's Note: Hot QCD equations of state and relativistic heavy ion collisions [Phys. Rev. C **76**, 054909 (2007)] *(1 page)* . . . . . 069904(E)
Vinod Chandra, Ravindra Kumar, and V. Ravishankar

Publisher's Note: Yrast studies of ^{80,82}Se using deep-inelastic reactions [Phys. Rev. C **76**, 054317 (2007)] *(1 page)* . . . . . 069905(E)
G. A. Jones, P. H. Regan, Zs. Podolyák, N. Yoshinaga, K. Higashiyama, G. de Angelis, Y. H. Zhang, A. Gadea, C. A. Ur, M. Axiotis, D. Bazzacco, D. Bucurescu, E. Farnea, W. Gelletly, M. Ionescu-Bujor, A. Iordachescu, Th. Kröll, S. D. Langdown, S. Lenzi, S. Lunardi, N. Marginean, T. Martinez, N. H. Medina, R. Menegazzo, D. R. Napoli, B. Quintana, B. Rubio, C. Rusu, R. Schwengner, D. Tonev, J. J. Valiente Dobón, and W. von Oertzen