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 2 ***CONTENTS*** **AUGUST 2007**

RAPID COMMUNICATIONS

Ab initio four-body calculation of n-^{3}He, p-^{3}H, and d-d scattering *(4 pages)* ..... 021001(R)
A. Deltuva and A. C. Fonseca

Competition between normal and intruder states inside the "island of inversion" *(5 pages)* ..... 021301(R)
Vandana Tripathi, S. L. Tabor, P. F. Mantica, Y. Utsuno, P. Bender, J. Cook, C. R. Hoffman, Sangjin Lee, T. Otsuka, J. Pereira, M. Perry, K. Pepper, J. S. Pinter, J. Stoker, A. Volya, and D. Weisshaar

$2_1^+ \rightarrow 0_1^+$ transition strengths in Sn nuclei *(4 pages)* ..... 021302(R)
J. N. Orce, S. N. Choudry, B. Crider, E. Elhami, S. Mukhopadhyay, M. Scheck, M. T. McEllistrem, and S. W. Yates

Existence of long-lived isomeric states in naturally-occurring neutron-deficient Th isotopes *(5 pages)* ..... 021303(R)
A. Marinov, I. Rodushkin, Y. Kashiv, L. Halicz, I. Segal, A. Pape, R. V. Gentry, H. W. Miller, D. Kolb, and R. Brandt

Shell evolution and the $N = 34$ "magic number" *(5 pages)* ..... 021304(R)
M. Rejmund, S. Bhattacharyya, A. Navin, W. Mittig, L. Gaudefroy, M. Gelin, G. Mukherjee, F. Rejmund, P. Roussel-Chomaz, and Ch. Theisen

Analog of the giant dipole resonance in ^{4}He *(4 pages)* ..... 021305(R)
S. Nakayama, E. Matsumoto, R. Hayami, K. Fushimi, H. Kawasuso, K. Yasuda, T. Yamagata, H. Akimune, H. Ikemizu, M. Fujiwara, M. Yosoi, K. Nakanishi, K. Kawase, H. Hashimoto, T. Oota, K. Sagara, T. Kudoh, S. Asaji, T. Ishida, M. Tanaka, and M. B. Greenfield

Potential inversion with sub-barrier fusion data reexamined *(4 pages)* ..... 021601(R)
K. Hagino and Y. Watanabe

Quenching of the analyzing power for inclusive quasielastic $(\vec{p}, p')$ scattering *(5 pages)* ..... 021602(R)
K. Ogata, G. C. Hillhouse, and B. I. S. van der Ventel

Single and double proton emissions from the $^{14}\mathrm{O} + {}^4\mathrm{He}$ interaction *(4 pages)* ..... 021603(R)
Changbo Fu, V. Z. Goldberg, A. M. Mukhamedzhanov, G. G. Chubarian, G. V. Rogachev, B. Skorodumov, M. McCleskey, Y. Zhai, T. Al-Abdullah, G. Tabacaru, L. Trache, and R. E. Tribble

Effect of isospin on the evaporation residue cross section *(4 pages)* ..... 021604(R)
W. Ye

Copyright 2007 by The American Physical Society

0556-2813(200708)76:2;1-R

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

New insight into the low-energy ^{9}He spectrum *(5 pages)* . . . . . 021605(R)
M. S. Golovkov, L. V. Grigorenko, A. S. Fomichev, A. V. Gorshkov, V. A. Gorshkov, S. A. Krupko, Yu. Ts. Oganessian, A. M. Rodin, S. I. Sidorchuk, R. S. Slepnev, S. V. Stepantsov, G. M. Ter-Akopian, R. Wolski, A. A. Korsheninnikov, E. Yu. Nikolskii, V. A. Kuzmin, B. G. Novatskii, D. N. Stepanov, P. Roussel-Chomaz, and W. Mittig

How much entropy is produced in strongly coupled quark-gluon plasma (sQGP) by dissipative effects? *(4 pages)* . . . . . 021901(R)
M. Lublinsky and E. Shuryak

Initial fields and instabilities in the classical model of relativistic heavy-ion collisions *(5 pages)* . . . . . 021902(R)
Kenji Fukushima

Phenomenological analysis of two-photon exchange effects in proton form factor measurements *(3 pages)* . . . . . 022201(R)
Dmitry Borisyuk and Alexander Kobushkin

Neutron-induced reactions using a γ-ray detector in a ^{12}C(α, γ)^{16}O reaction study *(5 pages)* . . . . . 022801(R)
H. Makii, Y. Nagai, K. Mishima, M. Segawa, T. Shima, and M. Igashira

Neutron capture cross sections of ^{186}Os, ^{187}Os, and ^{189}Os for the Re-Os chronology *(5 pages)* . . . . . 022802(R)
M. Segawa, T. Masaki, Y. Nagai, Y. Temma, T. Shima, K. Mishima, M. Igashira, S. Goriely, A. Koning, and S. Hilaire

ARTICLES

Nucleon-Nucleon Interaction, Few-Body Systems

Resonant relativistic corrections and the A_y problem *(7 pages)* 024001
G. A. Miller and A. Schwenk

Nuclear Structure

Charge exchange spin-dipole excitations in ^{90}Zr and ^{208}Pb and the neutron matter equation of state *(12 pages)* . . . 024301
H. Sagawa, Satoshi Yoshida, Xian-Rong Zhou, K. Yako, and H. Sakai

Charge radius and dipole response of ^{11}Li *(6 pages)* 024302
H. Esbensen, K. Hagino, P. Mueller, and H. Sagawa

Testing approximations beyond the proton-neutron quasiparticle random phase approximation *(7 pages)* 024303
O. Civitarese, J. G. Hirsch, A. Mariano, and M. Reboiro

α-decay half-life of ^{253}Es in metallic Fe at temperatures between 4 K and 50 mK *(4 pages)* 024304
N. Severijns, A. A. Belyaev, A. L. Erzinkyan, P.-D. Eversheim, V. T. Filimonov, V. V. Golovko, G. M. Gurevich, P. Herzog, I. S. Kraev, A. A. Lukhanin, V. I. Noga, V. P. Parfenova, T. Phalet, A. V. Rusakov, Yu. G. Toporov, C. Tramm, V. N. Vyachin, F. Wauters, D. Zákoucký, and E. Zotov

Roles of tensor and pairing correlations on halo formation in ^{11}Li *(8 pages)* 024305
Takayuki Myo, Kiyoshi Katō, Hiroshi Toki, and Kiyomi Ikeda

Staggering in γ-band energies and the transition between different structural symmetries in nuclei *(10 pages)* 024306
E. A. McCutchan, Dennis Bonatsos, N. V. Zamfir, and R. F. Casten

High-spin structure of ^{105}Ag: Search for chiral doublet bands *(11 pages)* 024307
J. Timár, T. Koike, N. Pietralla, G. Rainovski, D. Sohler, T. Ahn, G. Berek, A. Costin, K. Dusling, T. C. Li, E. S. Paul, K. Starosta, and C. Vaman

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Evidence for a breakdown of the isobaric multiplet mass equation: A study of the $A = 35$, $T = 3/2$ isospin quartet *(8 pages)* 024308
C. Yazidjian, G. Audi, D. Beck, K. Blaum, S. George, C. Guénaut, F. Herfurth, A. Herlert, A. Kellerbauer, H.-J. Kluge, D. Lunney, and L. Schweikhard

Bohr Hamiltonian with different mass coefficients for the ground- and γ bands from experimental data *(6 pages)* 024309
R. V. Jolos and P. von Brentano

Generic strong coupling behavior of Cooper pairs on the surface of superfluid nuclei *(6 pages)* 024310
N. Pillet, N. Sandulescu, and P. Schuck

Momentum distribution and correlation of two-nucleon relative motion in ^{6}He and ^{6}Li *(13 pages)* 024311
W. Horiuchi and Y. Suzuki

Nuclear matter in the crust of neutron stars *(12 pages)* 024312
P. Gögelein and H. Müther

Effective interactions and shell model studies of heavy tin isotopes *(8 pages)* 024313
M. P. Kartamyshev, T. Engeland, M. Hjorth-Jensen, and E. Osnes

Low-lying resonant states in ^{16}F using a ^{15}O radioactive ion beam *(8 pages)* 024314
D. W. Lee, K. Peräjärvi, J. Powell, J. P. O'Neil, D. M. Moltz, V. Z. Goldberg, and Joseph Cerny

Nuclear matrix elements of $0\nu\beta\beta$ decay with improved short-range correlations *(6 pages)* 024315
Markus Kortelainen and Jouni Suhonen

Compressibility and equation of state of finite nuclei *(3 pages)* 024316
A. S. Umar and V. E. Oberacker

Spectroscopy of ^{20}Mg: The isobaric mass multiplet equation for the 2^{+} states of the $A = 20$, $T = 2$ quintet and distant mirror nuclei *(4 pages)* 024317
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, and D. Weisshaar

Finite amplitude method for the solution of the random-phase approximation *(9 pages)* 024318
Takashi Nakatsukasa, Tsunenori Inakura, and Kazuhiro Yabana

Thermodynamics of pairing in mesoscopic systems *(18 pages)* 024319
Tony Sumaryada and Alexander Volya

Global microscopic calculations of ground-state spins and parities for odd-mass nuclei *(5 pages)* 024320
L. Bonneau, P. Quentin, and P. Möller

Bandcrossing of magnetic rotation bands in ^{137}Pr *(8 pages)* 024321
Priyanka Agarwal, Suresh Kumar, Sukhjeet Singh, Rishi Kumar Sinha, Anukul Dhal, S. Muralithar, R. P. Singh, N. Madhavan, Rakesh Kumar, R. K. Bhowmik, S. S. Malik, S. C. Pancholi, L. Chaturvedi, H. C. Jain, and A. K. Jain

Nuclear Reactions

Strong pickup-channel coupling effects in proton scattering: The case of $p+^{10}$Be *(6 pages)* 024601
R. S. Mackintosh and N. Keeley

Searching for statistical equilibrium in a dynamical multifragmentation path *(7 pages)* 024602
A. H. Raduta, M. Colonna, and M. Di Toro

Probing the nuclear matter isospin asymmetry by nucleon-induced reactions at Fermi energies *(8 pages)* 024603
F. Sébille, V. de la Mota, I. C. Sagrado Garcia, J. F. Lecolley, and V. Blideanu

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

Multinucleon transfer reactions in closed-shell nuclei *(9 pages)* 024604
S. Szilner, C. A. Ur, L. Corradi, N. Mărginean, G. Pollarolo, A. M. Stefanini, S. Beghini, B. R. Behera, E. Fioretto, A. Gadea, B. Guiot, A. Latina, P. Mason, G. Montagnoli, F. Scarlassara, M. Trotta, G. de Angelis, F. Della Vedova, E. Farnea, F. Haas, S. Lenzi, S. Lunardi, R. Mărginean, R. Menegazzo, D. R. Napoli, M. Nespolo, I. V. Pokrovsky, F. Recchia, M. Romoli, M.-D. Salsac, N. Soić, and J. J. Valiente-Dobón

Consistent analysis of fusion data without adjustable parameters for systems involving odd nuclei *(10 pages)* 024605
G. P. A. Nobre, C. P. Silva, L. C. Chamon, and B. V. Carlson

Density dependence of the symmetry energy and the nuclear equation of state: A dynamical and statistical model perspective *(15 pages)* 024606
D. V. Shetty, S. J. Yennello, and G. A. Souliotis

Isospin effect in statistical sequential decay *(8 pages)* 024607
W. D. Tian, Y. G. Ma, X. Z. Cai, D. Q. Fang, W. Guo, W. Q. Shen, K. Wang, H. W. Wang, and M. Veselsky

Analysis of Coulomb breakup experiments of ^{8}B with a dynamical eikonal approximation *(13 pages)* 024608
G. Goldstein, P. Capel, and D. Baye

Fusion process studied with a preequilibrium giant dipole resonance in time-dependent Hartree-Fock theory *(14 pages)* 024609
C. Simenel, Ph. Chomaz, and G. de France

Elastic and inelastic scattering of π^+ and π^- on ^{12}C at 995 MeV/*c* *(13 pages)* 024610
K. Aoki, H. Sakaguchi, N. Nose-Togawa, T. Takahashi, T. Hasegawa, O. Hashimoto, T. Nagae, M. Sekimoto, A. Ohkusu, H. Bhang, H. Yu, and Y. Gavrilov

Comparison of multifragmentation dynamical models *(9 pages)* 024611
J. Rizzo, M. Colonna, and A. Ono

Systematic study of the nuclear potential through high precision back-angle quasi-elastic scattering measurements *(9 pages)* 024612
L. R. Gasques, M. Evers, D. J. Hinde, M. Dasgupta, P. R. S. Gomes, R. M. Anjos, M. L. Brown, M. D. Rodríguez, R. G. Thomas, and K. Hagino

Extended optical model analyses of elastic scattering and fusion cross section data for the ^{7}Li + ^{208}Pb system at near-Coulomb-barrier energies using a folding potential *(8 pages)* 024613
W. Y. So, T. Udagawa, K. S. Kim, S. W. Hong, and B. T. Kim

Effects of geometric constraints on the nuclear multifragmentation process *(6 pages)* 024614
S. R. Souza, R. Donangelo, W. G. Lynch, and M. B. Tsang

Relativistic Nuclear Collisions

Particle number fluctuations in nuclear collisions within an excluded volume hadron gas model *(9 pages)* 024901
M. I. Gorenstein, M. Hauer, and D. O. Nikolajenko

Multiplicity fluctuations in relativistic nuclear collisions: Statistical model versus experimental data *(12 pages)* 024902
V. V. Begun, M. Gaździcki, M. I. Gorenstein, M. Hauer, V. P. Konchakovski, and B. Lungwitz

Scaling of v_2 in heavy ion collisions *(8 pages)* 024903
Giorgio Torrieri

Particles associated with Ω produced at intermediate p_T *(5 pages)* 024904
Charles B. Chiu and Rudolph C. Hwa

Centrality dependence of elliptic flow, the hydrodynamic limit, and the viscosity of hot QCD *(5 pages)* 024905
Hans-Joachim Drescher, Adrian Dumitru, Clément Gombeaud, and Jean-Yves Ollitrault

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 76, NUMBER 2 AUGUST 2007

K^0 and Λ production in Ni+Ni collisions near threshold *(9 pages)* 024906
M. Merschmeyer *et al.* (FOPI Collaboration)

Method for determining event-by-event elliptic flow fluctuations based on the first-order event plane in heavy-ion collisions *(4 pages)* 024907
Gang Wang, Declan Keane, Aihong Tang, and Sergei A. Voloshin

Effect of geometrical size of the particles in a hot and dense hadron gas *(9 pages)* 024908
M. Mishra and C. P. Singh

Production of hypernuclei in multifragmentation of nuclear spectator matter *(4 pages)* 024909
A. S. Botvina and J. Pochodzalla

Entropy production in high-energy heavy-ion collisions and the correlation of shear viscosity and thermalization time *(9 pages)* 024910
A. Dumitru, E. Molnár, and Y. Nara

Transport rates and momentum isotropization of gluon matter in ultrarelativistic heavy-ion collisions *(18 pages)* 024911
Zhe Xu and Carsten Greiner

Pseudorapidity shape of elliptic flow as signature for fast equilibration in relativistic heavy-ion collisions at energies up to $\sqrt{s_{NN}} = 200$ GeV *(6 pages)* 024912
J. Bleibel, G. Burau, Amand Faessler, and C. Fuchs

Fully nonlinear excitations of non-Abelian plasmas *(4 pages)* 024913
Vishnu M. Bannur

Rapidity and energy dependence of the electric charge correlations in $A+A$ collisions from 20A to 158A GeV *(7 pages)* 024914
C. Alt *et al.* (NA49 Collaboration)

Global polarization measurement in Au+Au collisions *(10 pages)* 024915
B. I. Abelev *et al.* (STAR Collaboration)

Hadronic Physics and QCD

Soliton in the global color model with a sophisticated effective gluon propagator *(6 pages)* 025201
Bin Wang, Huan Chen, Lei Chang, and Yu-xin Liu

Global analysis of nucleon strange form factors at low Q^2 *(8 pages)* 025202
Jianglai Liu, Robert D. McKeown, and Michael J. Ramsey-Musolf

Subtleties of Lorentz invariance and shapes of the nucleon *(6 pages)* 025203
Alexander Kvinikhidze and Gerald A. Miller

Covariant calculation of nonstrange decays of strange baryon resonances *(8 pages)* 025204
T. Melde, W. Plessas, and B. Sengl

Predictions for two-pion correlations for $\sqrt{s} = 14$ TeV proton-proton collisions *(11 pages)* 025205
T. J. Humanic

Meson and glueball spectra with the relativistic flux tube model *(13 pages)* 025206
Fabien Buisseret

Structure and decay constant of the ρ meson within the Bethe-Salpeter equation *(6 pages)* 025207
Z. G. Wang and S. L. Wan

Cascade production in the reactions $\gamma p \to K^+K^+(X)$ and $\gamma p \to K^+K^+\pi^-(X)$ *(11 pages)* 025208
L. Guo *et al.* (CLAS Collaboration)

Updated analysis of NN elastic scattering to 3 GeV *(10 pages)* 025209
R. A. Arndt, W. J. Briscoe, I. I. Strakovsky, and R. L. Workman

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 76, NUMBER 2 AUGUST 2007

Production of polarized vector mesons off nuclei *(21 pages)* 025210
B. Z. Kopeliovich, J. Nemchik, and Ivan Schmidt

π^0 photoproduction on the proton for photon energies from 0.675 to 2.875 GeV *(16 pages)* 025211
M. Dugger *et al*. (CLAS Collaboration)

Electroexcitation of the Roper resonance in relativistic quark models *(6 pages)* 025212
I. G. Aznauryan

Role of the ρ meson in the description of pion electroproduction experiments *(12 pages)* 025213
Amand Faessler, Thomas Gutsche, Valery E. Lyubovitskij, and Igor T. Obukhovsky

Electroweak Interaction, Symmetries

First results on double β-decay modes of Cd, Te, and Zn Isotopes *(7 pages)* 025501
T. Bloxham, A. Boston, J. Dawson, D. Dobos, S. P. Fox, M. Freer, B. R. Fulton, C. Gößling, P. F. Harrison, M. Junker, H. Kiel, J. McGrath, B. Morgan, D. Münstermann, P. Nolan, S. Oehl, Y. Ramachers, C. Reeve, D. Stewart, R. Wadsworth, J. R. Wilson, and K. Zuber

Confirmation of parity violation in the γ decay of $^{180}\mathrm{Hf}^m$ *(13 pages)* 025502
J. R. Stone, G. Goldring, N. J. Stone, N. Severijns, M. Hass, D. Zakoucky, T. Giles, U. Köster, I. S. Kraev, S. Lakshmi, M. Lindroos, and F. Wauters

Half-life of the superallowed β^+ emitter ^{18}Ne *(6 pages)* 025503
G. F. Grinyer, M. B. Smith, C. Andreoiu, A. N. Andreyev, G. C. Ball, P. Bricault, R. S. Chakrawarthy, J. J. Daoud, P. Finlay, P. E. Garrett, G. Hackman, B. Hyland, J. R. Leslie, A. C. Morton, C. J. Pearson, A. A. Phillips, M. A. Schumaker, C. E. Svensson, J. J. Valiente-Dobón, S. J. Williams, and E. F. Zganjar

Conversion of electron spectrum associated with fission into the antineutrino spectrum *(5 pages)* 025504
Petr Vogel

Nuclear Astrophysics

Nuclear symmetry energy and stability of matter in neutron stars *(5 pages)* 025801
Sebastian Kubis

Experimental evidence for a natural parity state in ^{26}Mg and its impact on the production of neutrons for the *s* process *(6 pages)* 025802
C. Ugalde, A. E. Champagne, S. Daigle, C. Iliadis, R. Longland, J. R. Newton, E. Osenbaugh-Stewart, J. A. Clark, C. Deibel, A. Parikh, P. D. Parker, and C. Wrede

Upper edge of the neutron star inner crust: The drip point and its vicinity *(8 pages)* 025803
M. Baldo, E. E. Saperstein, and S. V. Tolokonnikov

Spin measurements for $^{147}\mathrm{Sm} + n$ resonances: Further evidence for nonstatistical effects *(15 pages)* 025804
P. E. Koehler, J. L. Ullmann, T. A. Bredeweg, J. M. O'Donnell, R. Reifarth, R. S. Rundberg, D. J. Vieira, and J. M. Wouters

Thermal effects on nuclear symmetry energy with a momentum-dependent effective interaction *(11 pages)* 025805
Ch. C. Moustakidis

BRIEF REPORTS

Single proton energies in the Si isotopes and the $Z = 14$ subshell closure *(4 pages)* 027301
P. D. Cottle

New excited states in ^{82}Ge: Possible weakening of the $N = 50$ closed shell *(4 pages)* 027302
T. Rząca-Urban, W. Urban, J. L. Durell, A. G. Smith, and I. Ahmad

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 76, NUMBER 2** **AUGUST 2007**

α-decay studies of the exotic $N = 125$, 126, and 127 isotones *(4 pages)* 027303
Chang Xu and Zhongzhou Ren

Isoscalar giant resonance strength in ^{28}Si *(4 pages)* 027304
D. H. Youngblood, Y.-W. Lui, and H. L. Clark

Derivation of the surface diffuseness of the nucleus-nucleus interaction potential using large-angle quasielastic scattering at deep sub-barrier energies *(3 pages)* 027601
D. S. Monteiro, J. M. B. Shorto, J. F. P. Huiza, P. R. S. Gomes, and E. Crema

Width of ^{11}B($\frac{1}{2}^+$, $T = \frac{3}{2}$) *(4 pages)* 027602
F. C. Barker

Experimental investigation of fusion of ^{7}Li+^{28}Si above the Coulomb barrier *(4 pages)* 027603
Mandira Sinha, H. Majumdar, R. Bhattacharya, P. Basu, Subinit Roy, M. Biswas, R. Palit, I. Mazumdar, P. K. Joshi, H. C. Jain, and S. Kailas

Proton-antiproton suppression in 200*A* GeV Au-Au collisions *(3 pages)* 027901
Thorsten Renk and Kari J. Eskola

Schiff screening of relativistic nucleon electric-dipole moments by electrons *(2 pages)* 028501
C.-P. Liu and J. Engel

ERRATA

Erratum: Effect of breakup on elastic scattering for the ^{6,7}Li + ^{59}Co systems [Phys. Rev. C **75**, 044601 (2007)] *(2 pages)* ..... 029901(E)
F. A. Souza, L. A. S. Leal, N. Carlin, M. G. Munhoz, R. Liguori Neto, M. M. de Moura, A. A. P. Suaide, E. M. Szanto, A. Szanto de Toledo, and J. Takahashi

Erratum: Sensitivity of neutron radii in a ^{208}Pb nucleus and a neutron star to nucleon-σ-ρ coupling corrections in relativistic mean field theory [Phys. Rev. C **71**, 015802 (2005)] *(2 pages)* ..... 029902(E)
G. Shen, J. Li, G. C. Hillhouse, and J. Meng