PHYSICAL REVIEW C

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

PERIODICALS
Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 62, NUMBER 3 *CONTENTS* **SEPTEMBER 2000**

RAPID COMMUNICATIONS

Core polarization in the light of new experimental g factors of fp shell, $N=28$, isotones *(4 pages)* . . . . . 031301(R)
K.-H. Speidel, R. Ernst, O. Kenn, J. Gerber, P. Maier-Komor, N. Benczer-Koller, G. Kumbartzki, L. Zamick, M. S. Fayache, and Y. Y. Sharon

Time-odd mean fields in the rotating frame: Microscopic nature of nuclear magnetism *(5 pages)* . . . . . 031302(R)
A. V. Afanasjev and P. Ring

Normal and anomalous K-hindered decays from four-quasiparticle isomers in ^{176}Lu *(5 pages)* . . . . . 031303(R)
T. R. McGoram, G. D. Dracoulis, T. Kibédi, A. P. Byrne, R. A. Bark, A. M. Baxter, and S. M. Mullins

Highly deformed rotational structures in ^{136}Pm *(5 pages)* . . . . . 031304(R)
J. Pfohl, R. W. Laird, M. A. Riley, F. G. Kondev, D. E. Archer, T. B. Brown, R. M. Clark, M. Devlin, P. Fallon, D. J. Hartley, I. M. Hibbert, D. T. Joss, D. R. LaFosse, P. J. Nolan, N. J. O'Brien, E. S. Paul, D. G. Sarantites, R. K. Sheline, S. L. Shepherd, J. Simpson, R. Wadsworth, Y. Sun, A. V. Afanasjev, and I. Ragnarsson

Effect of projectile ground state spin on fission fragment anisotropies in ^{10}B, ^{11}B+^{232}Th reactions *(5 pages)* . . . . . 031601(R)
B. K. Nayak, R. G. Thomas, R. K. Choudhury, A. Saxena, P. K. Sahu, S. S. Kapoor, Raghav Varma, and D. Umakanth

Low energy onset of nuclear shadowing in photoabsorption *(4 pages)* . . . . . 031602(R)
T. Falter, S. Leupold, and U. Mosel

Neutron-proton asymmetry of the midvelocity material in an intermediate-energy heavy-ion collision *(5 pages)* . . . . . 031603(R)
L. G. Sobotka, R. J. Charity, D. K. Agnihotri, W. Gawlikowicz, T. X. Liu, W. Lynch, U. Schröder, J. Tõke, and H. S. Xu

Thermal expansion effects in the 8 GeV/c π^- + ^{197}Au reaction *(5 pages)* . . . . . 031604(R)
T. Lefort, L. Beaulieu, A. Botvina, D. Durand, K. Kwiatkowski, W.-c. Hsi, L. Pienkowski, H. Breuer, R. G. Korteling, R. Laforest, E. Martin, E. Ramakrishnan, D. Rowland, A. Ruangma, V. E. Viola, E. Winchester, and S. J. Yennello

Choice of colliding beams to study deformation effects in relativistic heavy ion collisions *(2 pages)* . . . . . 031901(R)
S. Das Gupta and C. Gale

ARTICLES

Nucleon-Nucleon Interaction, Few-Body Systems

Double-pion production induced by deuteron-proton collisions in the incident deuteron momentum range 2.1–3.8 GeV/c *(9 pages)* 034001
Toru Tsuboyama, Fuminori Sai, Nobu Katayama, Takashi Kishida, and Sukeyasu Steven Yamamoto

Copyright 2000 by The American Physical Society

(Continued)

0556-2813(200009)62:3;1-E

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 62, NUMBER 3** **SEPTEMBER 2000**

Chiral quark model study of the *NN* system within a Lippmann-Schwinger resonating group method *(18 pages)* 034002
D. R. Entem, F. Fernández, and A. Valcarce
Field transformations and simple models illustrating the impossibility of measuring off-shell effects *(11 pages)* 034003
H. W. Fearing and S. Scherer
Realistic ghost state: Pauli forbidden state from rigorous solution of the α particle *(5 pages)* 034004
H. Kamada, S. Oryu, and A. Nogga
Nucleon-nucleon elastic scattering to 3 GeV *(16 pages)* 034005
Richard A. Arndt, Igor I. Strakovsky, and Ron L. Workman

Nuclear Structure

Important role of the spin-orbit interaction in forming the $1/2^+$ orbital structure in Be isotopes *(8 pages)* 034301
N. Itagaki, S. Okabe, and K. Ikeda
Relativistic nuclear structure effects in $(e,e'\vec{p})$ *(13 pages)* 034302
J. M. Udías and Javier R. Vignote
Search for very long-lived isomers in the hafnium-tungsten region *(10 pages)* 034303
Zs. Podolyák, P. M. Walker, D. M. Cullen, G. D. Dracoulis, P. Fallon, B. Fairchild, K. Hauschild, A. O. Macchiavelli, D. P. McNabb, A. Savelius, D. Ward, and C. Wheldon
Two-nucleon spectral function in infinite nuclear matter *(8 pages)* 034304
Omar Benhar and Adelchi Fabrocini
s-wave halo effect and the Coulomb barrier top effect on the mirror state of a halo *(7 pages)* 034305
Shigeyoshi Aoyama
$B(E2;0^+_{\text{g.s.}}\rightarrow 2^+_1)$ in ^{18}Ne and isospin purity in $A=18$ nuclei *(6 pages)* 034306
L. A. Riley, P. D. Cottle, M. Fauerbach, T. Glasmacher, K. W. Kemper, B. V. Pritychenko, and H. Scheit
Transverse electron scattering form factors at low momentum transfer: Sensitivity to in-medium modifications of vector mesons? *(6 pages)* 034307
P. von Neumann-Cosel, F. Neumeyer, B. Reitz, A. Richter, and J. Wambach
Crossing the dripline to ^{11}N using elastic resonance scattering *(12 pages)* 034308
K. Markenroth, L. Axelsson, S. Baxter, M. J. G. Borge, C. Donzaud, S. Fayans, H. O. U. Fynbo, V. Z. Goldberg, S. Grévy, D. Guillemaud-Mueller, B. Jonson, K.-M. Källman, S. Leenhardt, M. Lewitowicz, T. Lönnroth, P. Manngård, I. Martel, A. C. Mueller, I. Mukha, T. Nilsson, G. Nyman, N. A. Orr, K. Riisager, G. V. Rogachev, M.-G. Saint-Laurent, I. N. Serikov, N. B. Shul'gina, O. Sorlin, M. Steiner, O. Tengblad, M. Thoennessen, E. Tryggestad, W. H. Trzaska, F. Wenander, J. S. Winfield, and R. Wolski
High-spin states in the ^{94}Nb nucleus *(5 pages)* 034309
N. Mărginean, D. Bucurescu, Ghe. Căta-Danil, I. Căta-Danil, M. Ivaşcu, and C. A. Ur
$U(1/2)$ supersymmetry without dynamical symmetry *(7 pages)* 034310
R. V. Jolos and P. von Brentano
Properties of strange hadronic matter in bulk and in finite systems *(8 pages)* 034311
Jürgen Schaffner-Bielich and Avraham Gal
Structure and decay of a three-quasiparticle isomer in ^{153}Eu *(9 pages)* 034312
J. F. Smith, S. J. Dorning, B. J. Varley, W. R. Phillips, Ch-. Vieu, J. S. Dionisio, C. Schuck, and M. Pautrat
Lifetimes of negative parity states in ^{168}Er *(8 pages)* 034313
L. Genilloud, J. Jolie, H. G. Börner, H. Lehmann, F. Bečvář, M. Krtička, N. V. Zamfir, and R. F. Casten
BCS theory of *q*-deformed nucleon pairs: *q*BCS *(4 pages)* 034314
S. Shelly Sharma and N. K. Sharma

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 62, NUMBER 3** **SEPTEMBER 2000**

Smooth band termination in odd mass La nuclei: ^{127,129,131}La *(7 pages)* 034315
R. Wadsworth, E. S. Paul, A. Astier, D. Bazzacco, A. J. Boston, N. Buforn, C. J. Chiara, D. B. Fossan, C. Fox, J. Gizon, D. G. Jenkins, N. S. Kelsall, T. Koike, D. R. LaFosse, S. Lunardi, P. J. Nolan, B. M. Nyakó, C. M. Petrache, H. Scraggs, K. Starosta, J. Timár, A. Walker, A. N. Wilson, L. Zolnai, B. G. Dong, and I. Ragnarsson

High-spin excitations in ^{158,159,160}Hf from recoil-decay tagging *(14 pages)* 034316
K. Y. Ding, J. A. Cizewski, D. Seweryniak, H. Amro, M. P. Carpenter, C. N. Davids, N. Fotiades, R. V. F. Janssens, T. Lauritsen, C. J. Lister, D. Nisius, P. Reiter, J. Uusitalo, I. Wiedenhöver, and A. O. Macchiavelli

Preservation of orientation of fusion-evaporation reaction residues recoiling into vacuum in a level mixing spectroscopy experiment *(10 pages)* 034317
K. Vyvey, G. Neyens, N. Coulier, R. Coussement, G. Georgiev, S. Ternier, S. Teughels, A. Lépine-Szily, and D. L. Balabanski

One-body density matrix and momentum distribution in s-p and s-d shell nuclei *(7 pages)* 034318
Ch. C. Moustakidis and S. E. Massen

Structure of light $S=-2$ nuclei and hyperon mixing *(17 pages)* 034319
Taiichi Yamada and Choki Nakamoto

Nuclear Reactions

Reaction mechanisms and multifragmentation processes in ^{64}Zn+^{58}Ni at 35A–79A MeV *(19 pages)* 034601
R. Wada, K. Hagel, J. Cibor, M. Gonin, Th. Keutgen, M. Murray, J. B. Natowitz, A. Ono, J. C. Steckmeyer, A. Kerambrum, J. C. Angélique, A. Auger, G. Bizard, R. Brou, C. Cabot, E. Crema, D. Cussol, D. Durand, Y. El Masri, P. Eudes, Z. Y. He, S. C. Jeong, C. Lebrun, J. P. Patry, A. Péghaire, J. Peter, R. Régimbart, E. Rosato, F. Saint-Laurent, B. Tamain, and E. Vient (The GANIL E-160 Collaboration)

R ratios and moments of nuclear structure functions *(5 pages)* 034602
A. S. Rinat and M. F. Taragin

Reaction mechanism populating ^{12}C+^{16}O breakup states in ^{28}Si *(10 pages)* 034603
N. Curtis, M. Shawcross, W. N. Catford, B. R. Fulton, N. M. Clarke, S. J. Hall, J. T. Murgatroyd, S. P. G. Chappell, R. L. Cowin, G. Dillon, and D. L. Watson

Precompound Monte-Carlo model for cluster induced reactions *(5 pages)* 034604
M. Blann and M. B. Chadwick

Preserving the gauge invariance of meson production currents in the presence of explicit final-state interactions *(5 pages)* 034605
Helmut Haberzettl

Finite formation time effects in quasielastic (e,e') scattering on nuclear targets *(12 pages)* 034606
Mikhail A. Braun, Claudio Ciofi degli Atti, and Daniele Treleani

Light particle probes of expansion and temperature evolution: Coalescence model analyses of heavy ion collisions at 47A MeV *(19 pages)* 034607
K. Hagel, R. Wada, J. Cibor, M. Lunardon, N. Marie, R. Alfaro, W. Shen, B. Xiao, Y. Zhao, Z. Majka, J. Li, P. Staszel, B.-A. Li, M. Murray, T. Keutgen, A. Bonasera, and J. B. Natowitz

Scatterings of complex nuclei in the Glauber model *(12 pages)* 034608
B. Abu-Ibrahim and Y. Suzuki

Relativistic Nuclear Collisions

Unusual bound states of quark matter within the Nambu–Jona-Lasinio model *(13 pages)* 034901
I. N. Mishustin, L. M. Satarov, H. Stöcker, and W. Greiner

Is the analysis of flow at the CERN Super Proton Synchrotron reliable? *(11 pages)* 034902
Nicolas Borghini, Phuong Mai Dinh, and Jean-Yves Ollitrault

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 62, NUMBER 3 SEPTEMBER 2000

Model for J/ψ absorption in hadronic matter *(11 pages)* 034903
Ziwei Lin and C. M. Ko

Hadronic Physics and QCD

In-medium meson propagators in relativistic nonlinear models *(6 pages)* 035201
J. C. Caillon and J. Labarsouque
Critical line for *H* superfluidity in strange quark matter? *(11 pages)* 035202
Robert D. Pisarski
Phase transition in warm nuclear matter *(8 pages)* 035203
Guo Hua, Liu Bo, and M. Di Toro
Nuclear shadowing and coherence length for longitudinal and transverse photons *(13 pages)* 035204
Boris Kopeliovich,, Jörg Raufeisen, and Alexander Tarasov

Electroweak Interaction, Symmetries

Weak interaction rates of neutron-rich nuclei and the *r*-process nucleosynthesis *(14 pages)* 035501
I. N. Borzov and S. Goriely
Realistic nuclear matrix elements for the lepton-flavor violating $\mu^- \rightarrow e^-$ conversion in ^{27}Al and ^{48}Ti *(7 pages)* 035502
T. Siiskonen, J. Suhonen, and T. S. Kosmas

Nuclear Astrophysics

Hyperon-hyperon interactions and properties of neutron star matter *(8 pages)* 035801
I. Vidaña, A. Polls, A. Ramos, L. Engvik, and M. Hjorth-Jensen
μ and τ neutrino thermalization and production in supernovae: Processes and time scales *(18 pages)* 035802
Todd A. Thompson, Adam Burrows, and Jorge E. Horvath
Kaon condensation in proto-neutron star matter *(20 pages)* 035803
José A. Pons, Sanjay Reddy, Paul J. Ellis, Madappa Prakash, and James M. Lattimer

BRIEF REPORTS

Conversion coefficients and band assignments in ^{180}Ta *(4 pages)* 037301
G. D. Dracoulis, T. Kibédi, A. P. Byrne, R. A. Bark, and A. M. Baxter
First order optical potentials and 25 to 40 MeV proton elastic scattering *(4 pages)* 037601
P. K. Deb, K. Amos, and S. Karataglidis
Absorption matrix for fusion in coupled reaction channel calculations *(4 pages)* 037602
S. V. S. Sastry
Neutron-neutron intensity interferometry in $E/A = 45$ MeV ^{58}Ni+ ^{27}Al, ^{nat}Ni, and ^{197}Au reactions *(4 pages)* 037603
R. Ghetti, N. Colonna, B. Jakobsson, J. Helgesson, J. Mårtensson, E. De Filippo, G. Tagliente, G. Lanzanò, A. Pantaleo, V. Bellini, A. Anzalone, S. Cavallaro, L. Celano, G. D'Erasmo, D. Di Santo, E. M. Fiore, M. Geraci, F. Giustolisi, A. Kuznetsov, D. Mahboub, F. Merchez, M. Palomba, V. Paticchio, G. Riera, M. L. Sperduto, C. Sutera, and M. Urrata (CHIC Collaboration)
Renormalization group analysis of ρ-meson properties at finite density *(4 pages)* 037901
Youngman Kim and Hyun Kyu Lee
Maximum fluctuations of charged particle densities in narrow pseudorapidity space at ultrarelativistic nuclear collisions *(3 pages)* 037902
Dipak Ghosh, Argha Deb, Jayita Ghosh, Rini Chattopadhyay, Madhumita Lahiri, Abdul Kayum Jafri, Sunil Das, and Md. Azizar Rahman
Causality in an excluded volume model *(3 pages)* 037903
Nirvikar Prasad, K. K. Singh, and C. P. Singh

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 62, NUMBER 3** **SEPTEMBER 2000**

Role of $P_{13}(1720)$ in $K\Sigma$ photoproduction *(4 pages)* 038201
T. Mart

COMMENTS

Comment on ''Nucleon form factors and a nonpointlike diquark'' *(2 pages)* 039801
B. Blankleider and A. N. Kvinikhidze

ERRATA

Erratum: Supercooling in viscous hydrodynamics for QCD phase transition [Phys. Rev. C **59**, 914 (1999)] *(1 page)* . . . . . 039901(E)
P. Shukla, S. K. Gupta, and A. K. Mohanty

Selected Abstracts from Other Physical Review Journals i
Cumulative Author Index iv