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 63, NUMBER 5 ***CONTENTS*** **MAY 2001**

RAPID COMMUNICATIONS

Empirical analysis for differential cross section measurements of $\vec{p}\vec{p}\rightarrow pp\pi^0$ *(5 pages)* . . . . . 051001(R)
G. Ramachandran and P. N. Deepak

Neutrinoless double β decay within the self-consistent renormalized quasiparticle random phase approximation and inclusion of induced nucleon currents *(5 pages)* . . . . . 051301(R)
A. Bobyk, W. A. Kamiński, and F. Šimkovic

Evidence for chiral symmetry breaking in ^{136}Pm and ^{138}Eu *(4 pages)* . . . . . 051302(R)
A. A. Hecht, C. W. Beausang, K. E. Zyromski, D. L. Balabanski, C. J. Barton, M. A. Caprio, R. F. Casten, J. R. Cooper, D. J. Hartley, R. Krücken, D. Meyer, H. Newman, J. R. Novak, E. S. Paul, N. Pietralla, A. Wolf, N. V. Zamfir, Jing-Ye Zhang, and F. Dönau

Corrections to the one-photon approximation in the $0^+\rightarrow 2^+$ transition of ^{12}C *(3 pages)* . . . . . 051303(R)
P. Guèye, M. Bernheim, J. F. Danel, J. E. Ducret, L. Lakéhal-Ayat, J. M. Le Goff, A. Magnon, C. Marchand, J. Morgenstern, J. Marroncle, P. Vernin, A. Zghiche-Lakéhal-Ayat, V. Breton, S. Frullani, F. Garibaldi, F. Ghio, M. Jodice, Z. E. Meziani, E. Offermann, and M. Traini

Coulomb and nuclear breakup effects in the single neutron removal reaction ^{197}Au(^{17}C,^{16}Cγ)X *(5 pages)* . . . 051601(R)
V. Maddalena and R. Shyam

ARTICLES

Nucleon-Nucleon Interaction, Few-Body Systems

Polarization phenomena in the reaction $p+\alpha\rightarrow p+\pi^0+\alpha$ *(5 pages)* 054001
Michail P. Rekalo and Egle Tomasi-Gustafsson

Radiative α-capture cross sections from realistic nucleon-nucleon interactions and variational Monte Carlo wave functions *(13 pages)* 054002
Kenneth M. Nollett

New forms of deuteron equations and wave function representations *(14 pages)* 054003
I. Fachruddin, Ch. Elster, and W. Glöckle

Nuclear Structure

Level density parameter in $A\sim 108-204$ nuclei at medium excitation energy *(6 pages)* 054301
Bency John, R. K. Choudhury, B. K. Nayak, A. Saxena, and D. C. Biswas

Identical transitions in the strongly deformed ^{99}Sr and ^{100}Sr *(13 pages)* 054302
G. Lhersonneau, B. Pfeiffer, H. Gabelmann, K.-L. Kratz, and the ISOLDE Collaboration

SU(3) density matrix theory *(18 pages)* 054303
Ts. Dankova and G. Rosensteel

Copyright 2001 by The American Physical Society

(Continued)

0556-2813(200105)63:5;1-K

PHYSICAL REVIEW C THIRD SERIES, VOLUME 63, NUMBER 5 MAY 2001

Proton versus neutron excitations in the high-spin spectrum of ^{102}Cd *(6 pages)* 054304
K. P. Lieb, D. Kast, A. Jungclaus, I. P. Johnstone, G. de Angelis, C. Fahlander, M. de Poli, P. G. Bizzeti, A. Dewald, R. Peusquens, H. Tiesler, M. Górska, and H. Grawe
Orbital and spin magnetic quadrupole response in heavy nuclei *(11 pages)* 054305
J. Kvasil, N. Lo Iudice, V. O. Nesterenko, A. Macková, and P. Alexa
Octupole correlations in the transitional actinides and the $spdf$ interacting boson model *(9 pages)* 054306
N. V. Zamfir and Dimitri Kusnezov
High-spin structures and alignment properties in ^{126}Ce *(11 pages)* 054307
A. N. Wilson, R. Wadsworth, J. F. Smith, S. J. Freeman, M. J. Leddy, C. J. Chiara, D. B. Fossan, D. R. LaFosse, K. Starosta, M. Devlin, D. G. Sarantites, J. N. Wilson, M. P. Carpenter, C. N. Davids, R. V. F. Janssens, D. Seweryniak, and R. Wyss
Collective spectra of α-like giant trinuclear molecules *(7 pages)* 054308
Ş. Mişicu, P. O. Hess, and W. Greiner
Many-body perturbation calculation of spherical nuclei with a separable monopole interaction *(11 pages)* . . . 054309
P. Stevenson, M. R. Strayer, and J. Rikovska Stone
Radius of ^{8}B halo from the asymptotic normalization coefficient *(6 pages)* 054310
F. Carstoiu, L. Trache, C. A. Gagliardi, R. E. Tribble, and A. M. Mukhamedzhanov
Effect of deformation on the twist and other dipole modes *(5 pages)* 054311
Shadow J. Q. Robinson and Larry Zamick
Interacting boson model for exotic nuclei at low isospin *(5 pages)* 054312
O. Juillet, P. Van Isacker, and D. D. Warner
Analysis of ^{6}He Coulomb breakup in the complex scaling method *(10 pages)* 054313
Takayuki Myo, Kiyoshi Katō, Shigeyoshi Aoyama, and Kiyomi Ikeda
Description of superdeformed identical bands of odd-A nuclei in the $A\sim 190$ mass region *(5 pages)* 054314
Yu-xin Liu, Di Sun, Jia-jun Wang, and En-guang Zhao
Conversion electron measurements of isomeric transitions in ^{130,132}Te and ^{134}Xe *(6 pages)* 054315
J. Genevey, J. A. Pinston, C. Foin, M. Rejmund, R. F. Casten, H. Faust, and S. Oberstedt

Nuclear Reactions

Coherent ρ^0 production in the (p,p') reaction *(5 pages)* 054601
Swapan Das and B. K. Jain
Collectivity against nucleon transfer in sub-barrier fusion of ^{12}C+^{194,198}Pt *(9 pages)* 054602
A. Shrivastava, S. Kailas, A. Chatterjee, A. Navin, A. M. Samant, P. Singh, S. Santra, K. Mahata, B. S. Tomar, and G. Pollarolo
Momentum dependent interactions and the asymmetry of the reaction: Multifragmentation as an example *(8 pages)* 054603
Jaivir Singh, Suneel Kumar, and Rajeev K. Puri
Liquid-gas phase transition in nuclei in the relativistic Thomas-Fermi theory *(9 pages)* 054604
Tapas Sil, B. K. Agrawal, J. N. De, and S. K. Samaddar
β-level mixing resonance: A method to study the spin alignment and spin polarization of projectile fragments *(7 pages)* 054605
N. Coulier, G. Neyens, D. L. Balabanski, D. Borremans, R. Coussement, J. M. Daugas, G. Georgiev, S. Teughels, and K. Vyvey
Measurement of the cross section asymmetry of the reaction $\gamma p\rightarrow\pi^{\circ}p$ in the resonance energy region $E_{\gamma}=0.5-1.1$ GeV *(8 pages)* 054606
F. V. Adamian, A. Yu. Buniatian, G. S. Frangulian, P. I. Galumian, V. H. Grabski, A. V. Hairapetian, H. H. Hakopian, V. K. Hoktanian, J. V. Manukian, A. M. Sirunian, A. H. Vartapetian, H. H. Vartapetian, V. G. Volchinsky, R. A. Arndt, I. I. Strakovsky, and R. L. Workman
Analysis of the ^{12}C+^{12}C reaction using a new type of coupling potential *(8 pages)* 054607
I. Boztosun and W. D. M. Rae

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 63, NUMBER 5** **MAY 2001**

Core excitation in Coulomb breakup reactions *(9 pages)* 054608
R. Shyam and P. Danielewicz
Normalization of the (^{6}He,^{4}He) cross sections in the distorted-wave Born approximation *(11 pages)* 054609
N. K. Timofeyuk
Three-dimensional Langevin calculations of fission fragment mass-energy distribution from excited compound nuclei *(15 pages)* 054610
A. V. Karpov, P. N. Nadtochy, D. V. Vanin, and G. D. Adeev
Sub-barrier fusion of ^{37}Cl+ ^{70,72,73,74,76}Ge *(9 pages)* 054611
E. Martínez-Quiroz, E. F. Aguilera, J. J. Kolata, and M. Zahar
Isospin effect on the process of multifragmentation and dissipation at intermediate energy heavy ion collisions *(8 pages)* 054612
Jian-Ye Liu, Yan-Fang Yang, Wei Zuo, Shun-Jin Wang, Qiang Zhao, Wen-Jun Guo, and Bo Chen

Relativistic Nuclear Collisions

(Anti)proton and pion source sizes and phase space densities in heavy ion collisions *(5 pages)* 054901
Michael Murray and Barbara Holzer
Jet quenching and azimuthal anisotropy of large p_T spectra in noncentral high-energy heavy-ion collisions *(9 pages)* 054902
Xin-Nian Wang
Search for strange quark matter produced in relativistic heavy ion collisions *(18 pages)* 054903
T. A. Armstrong, K. N. Barish, S. Batsouli, S. J. Bennett, M. Bertaina, A. Chikanian, S. D. Coe, T. M. Cormier, R. R. Davies, G. DeCataldo, P. Dee, G. E. Diebold, C. B. Dover, P. Fachini, B. Fadem, L. E. Finch, N. K. George, N. Giglietto, S. V. Greene, P. Haridas, J. C. Hill, A. S. Hirsch, R. A. Hoversten, H. Z. Huang, H. Jaradat, B. Kim, B. S. Kumar, T. Lainis, J. G. Lajoie, R. A. Lewis, Q. Li, B. Libby, R. D. Majka, T. E. Miller, M. G. Munhoz, J. L. Nagle, I. A. Pless, J. K. Pope, N. T. Porile, C. A. Pruneau, M. S. Z. Rabin, J. D. Reid, A. Rimai, A. Rose, F. S. Rotondo, J. Sandweiss, R. P. Scharenberg, A. J. Slaughter, G. A. Smith, P. Spinelli, M. L. Tincknell, W. S. Toothacker, G. Van Buren, W. K. Wilson, F. K. Wohn, E. J. Wolin, Z. Xu, and K. Zhao (The E864 Collaboration)
Quantum corrections for pion correlations involving resonance decays *(9 pages)* 054904
Sen Cheng and Scott Pratt
Enhanced J/ψ production in deconfined quark matter *(5 pages)* 054905
Robert L. Thews, Martin Schroedter, and Johann Rafelski
New method for measuring azimuthal distributions in nucleus-nucleus collisions *(26 pages)* 054906
Nicolas Borghini, Phuong Mai Dinh, and Jean-Yves Ollitrault
Signatures of thermal dilepton radiation at ultrarelativistic energies *(13 pages)* 054907
Ralf Rapp

Hadronic Physics and QCD

Dynamical study of the Δ excitation in $N(e,e'\pi)$ reactions *(13 pages)* 055201
T. Sato and T.-S. H. Lee
Chiral symmetry and quantum hadrodynamics *(10 pages)* 055202
G. Chanfray, M. Ericson, and P. A. M. Guichon
Quark mean field model with density dependent couplings for finite nuclei *(7 pages)* 055203
Y. H. Tan, H. Shen, and P. Z. Ning

Electroweak Interaction, Symmetries

Renormalization of the weak hadronic current in the nuclear medium *(12 pages)* 055501
T. Siiskonen, M. Hjorth-Jensen, and J. Suhonen

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 63, NUMBER 5 MAY 2001

Magnetic trapping of ultracold neutrons *(15 pages)* 055502
C. R. Brome, J. S. Butterworth, S. N. Dzhosyuk, C. E. H. Mattoni, D. N. McKinsey, J. M. Doyle, P. R. Huffman, M. S. Dewey, F. E. Wietfeldt, R. Golub, K. Habicht, G. L. Greene, S. K. Lamoreaux, and K. J. Coakley

$\beta\beta 2\nu$ decay in ^{48}Ca *(10 pages)* 055503
M. T. Capilla, B. Desplanques, and S. Noguera

Nuclear Astrophysics

''Trojan horse'' method applied to ^{2}H(^{6}Li,α)^{4}He at astrophysical energies *(7 pages)* 055801
C. Spitaleri, S. Typel, R. G. Pizzone, M. Aliotta, S. Blagus, M. Bogovac, S. Cherubini, P. Figuera, M. Lattuada, M. Milin, D. Miljanić, A. Musumarra, M. G. Pellegriti, D. Rendić, C. Rolfs, S. Romano, N. Soić, A. Tumino, H. H. Wolter, and M. Zadro

Measurement of the (γ,n) reaction rates of the nuclides ^{190}Pt, ^{192}Pt, and ^{198}Pt in the astrophysical γ process *(10 pages)* 055802
K. Vogt, P. Mohr, M. Babilon, J. Enders, T. Hartmann, C. Hutter, T. Rauscher, S. Volz, and A. Zilges

Asymptotic normalization coefficients and the ^{7}Be$(p,\gamma)^{8}$B astrophysical S factor *(11 pages)* 055803
A. Azhari, V. Burjan, F. Carstoiu, C. A. Gagliardi, V. Kroha, A. M. Mukhamedzhanov, F. M. Nunes, X. Tang, L. Trache, and R. E. Tribble

BRIEF REPORTS

Variational separable expansion scheme for two-body Coulomb-scattering problems *(3 pages)* 057001
J. Darai, B. Gyarmati, B. Kónya, and Z. Papp

Total ^{4}He photoabsorption cross section reexamined: Correlated versus effective interaction hyperspherical harmonics *(4 pages)* 057002
Nir Barnea, Victor D. Efros, Winfried Leidemann, and Giuseppina Orlandini

Structure of the nearly degenerate 6_1^+ and 6_2^+ states in ^{48}Ti *(3 pages)* 057301
Shadow J. Q. Robinson and Larry Zamick

γ-ray spectroscopy of odd-odd ^{62}Cu *(4 pages)* 057302
B. Mukherjee, S. Muralithar, R. P. Singh, R. Kumar, K. Rani, and R. K. Bhowmik

Nuclear fragmentation by tunneling *(4 pages)* 057601
Toshiki Maruyama, Aldo Bonasera, and Satoshi Chiba

Role of knockout contributions in giant resonance studies with $(p,p'x)$ reactions *(4 pages)* 057602
J. Carter, A. A. Cowley, H. Diesener, R. W. Fearick, S. V. Förtsch, J. J. Lawrie, P. von Neumann-Cosel, J. V. Pilcher, A. Richter, K. Schweda, F. D. Smit, G. F. Steyn, and S. Strauch

Effect of form factors in fits to photoproduction data *(4 pages)* 058201
R. M. Davidson and Ron Workman

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