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 70, NUMBER 6 *CONTENTS* **DECEMBER 2004**

RAPID COMMUNICATIONS

Six-Body variational Monte Carlo study of ${}^{6}_{\Lambda\Lambda}$He *(5 pages)* . . . . . 061001(R)
Q. N. Usmani, A. R. Bodmer, and Bhupali Sharma

Low-momentum interaction in few-nucleon systems *(4 pages)* . . . . . 061002(R)
Andreas Nogga, Scott K. Bogner, and Achim Schwenk

Proton emission from triaxial nuclei *(5 pages)* . . . . . 061301(R)
D. S. Delion, R. Wyss, D. Karlgren, and R. J. Liotta

Continuum-discretized coupled-channels method for four-body nuclear breakup in ^{6}He+^{12}C scattering *(5 pages)* . . . . . 061601(R)
T. Matsumoto, E. Hiyama, K. Ogata, Y. Iseri, M. Kamimura, S. Chiba, and M. Yahiro

Pseudorapidity dependence of charged hadron transverse momentum spectra in d+Au collisions at $\sqrt{s_{NN}}$=200 GeV *(3 pages)* . . . . . 061901(R)
B. B. Back, M. D. Baker, M. Ballintijn, D. S. Barton, B. Becker, R. R. Betts, A. A. Bickley, R. Bindel, W. Busza, A. Carroll, M. P. Decowski, E. García, T. Gburek, N. George, K. Gulbrandsen, S. Gushue, C. Halliwell, J. Hamblen, A. S. Harrington, C. Henderson, D. J. Hofman, R. S. Hollis, R. Hołyński, B. Holzman, A. Iordanova, E. Johnson, J. L. Kane, N. Khan, P. Kulinich, C. M. Kuo, J. W. Lee, W. T. Lin, S. Manly, A. C. Mignerey, R. Nouicer, A. Olszewski, R. Pak, I. C. Park, H. Pernegger, C. Reed, C. Roland, G. Roland, J. Sagerer, P. Sarin, I. Sedykh, W. Skulski, C. E. Smith, P. Steinberg, G. S. F. Stephans, A. Sukhanov, M. B. Tonjes, A. Trzupek, C. Vale, G. J. van Nieuwenhuizen, R. Verdier, G. I. Veres, F. L. H. Wolfs, B. Wosiek, K. Woźniak, B. Wysłouch, and J. Zhang (PHOBOS Collaboration)

ARTICLES

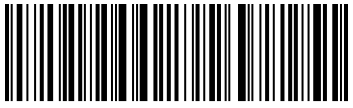
Nucleon-Nucleon Interaction, Few-Body Systems

Peculiar properties of the cluster-cluster interaction induced by the Pauli exclusion principle *(17 pages)* 064001
Gennady Filippov and Yuliya Lashko

Inequalities for low-energy symmetric nuclear matter *(4 pages)* 064002
Dean Lee



Copyright 2004 by The American Physical Society



(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 70, NUMBER 6 DECEMBER 2004

Complete measurement of three-body photodisintegration of ^{3}He for photon energies between 0.35 and 1.55 GeV *(18 pages)* 064003

S. Niccolai, G. Audit, B. L. Berman, J. M. Laget, S. Strauch, G. Adams, A. Afanasev, P. Ambrozewicz, M. Anghinolfi, J. R. M. Annand, C. Armstrong, B. Asavapibhop, H. Avakian, H. Bagdasaryan, J. P. Ball, S. Barrow, M. Battaglieri, K. Beard, M. Bektasoglu, M. Bellis, N. Benmouna, N. Bianchi, A. S. Biselli, S. Boiarinov, B. E. Bonner, S. Bouchigny, R. Bradford, D. Branford, W. J. Briscoe, W. K. Brooks, V. D. Burkert, C. Butuceanu, J. R. Calarco, D. S. Carman, B. Carnahan, S. Chen, P. L. Cole, A. Coleman, D. Cords, P. Corvisiero, D. Crabb, H. Crannell, J. P. Cummings, E. De Sanctis, R. DeVita, P. V. Degtyarenko, H. Denizli, L. Dennis, K. V. Dharmawardane, K. S. Dhuga, C. Djalali, G. E. Dodge, D. Doughty, P. Dragovitsch, M. Dugger, S. Dytman, O. P. Dzyubak, H. Egiyan, K. S. Egiyan, L. Elouadrhiri, A. Empl, R. Ent, P. Eugenio, R. Fatemi, G. Fedotov, G. Feldman, R. J. Feuerbach, J. Ficenec, T. A. Forest, H. Funsten, G. Gavalian, G. P. Gilfoyle, K. L. Giovanetti, E. Golovatch, C. I. O. Gordon, R. W. Gothe, K. Griffioen, M. Guidal, M. Guillo, N. Guler, L. Guo, V. Gyurjyan, C. Hadjidakis, R. S. Hakobyan, J. Hardie, D. Heddle, P. Heimberg, F. W. Hersman, K. Hicks, K. Hleiqawi, M. Holtrop, J. Hu, M. Huertas, C. E. Hyde-Wright, Y. Y. llieva, D. Ireland, M. M. Ito, D. Jenkins, H. S. Jo, K. Joo, H. G. Juengst, J. Kellie, M. Khandaker, K. Y. Kim, K. Kim, W. Kim, A. Klein, F. J. Klein, A. V. Klimenko, M. Klusman, M. Kossov, L. H. Kramer, Y. Kuang, S. E. Kuhn, J. Kuhn, J. Lachniet, J. Langheinrich, D. Lawrence, Ji Li, A. C. S. Lima, K. Livingston, K. Lukashin, J. J. Manak, C. Marchand, S. McAleer, J. W. C. McNabb, B. A. Mecking, J. J. Melone, M. D. Mestayer, C. A. Meyer, K. Mikhailov, R. Minehart, M. Mirazita, R. Miskimen, L. Morand, S. A. Morrow, V. Muccifora, J. Mueller, L. Y. Murphy, G. S. Mutchler, J. Napolitano, R. Naseripour, G. Niculescu, I. Niculescu, B. B. Niczyporuk, R. A. Niyazov, M. Nozar, J. T. O'Brien, G. V. O'Rielly, M. Osipenko, A. Ostrovidov, K. Park, E. Pasyuk, S. A. Philips, N. Pivnyuk, D. Pocanic, O. Pogorelko, E. Polli, I. Popa, S. Pozdniakov, B. M. Preedom, J. W. Price, Y. Prok, D. Protopopescu, L. M. Qin, B. A. Raue, G. Riccardi, G. Ricco, M. Ripani, B. G. Ritchie, F. Ronchetti, G. Rosner, P. Rossi, D. Rowntree, P. D. Rubin, F. Sabatié, C. Salgado, J. P. Santoro, V. Sapunenko, R. A. Schumacher, V. S. Serov, A. Shafi, Y. G. Sharabian, J. Shaw, A. V. Skabelin, E. S. Smith, L. C. Smith, D. I. Sober, A. Stavinsky, S. Stepanyan, P. Stoler, I. I. Strakovsky, R. Suleiman, M. Taiuti, S. Taylor, D. J. Tedeschi, U. Thoma, R. Thompson, R. Tkabladze, L. Todor, C. Tur, M. Ungaro, M. F. Vineyard, A. V. Vlassov, K. Wang, L. B. Weinstein, D. P. Weygand, C. S. Whisnant, M. Williams, E. Wolin, M. H. Wood, A. Yegneswaran, J. Yun, and L. Zana (The CLAS Collaboration)

NK and ΔK states in the chiral SU(3) quark model *(7 pages)* 064004

F. Huang and Z. Y. Zhang

Nuclear Structure

β decay of ^{148}Dy: Study of the Gamow-Teller giant state by means of total absorption spectroscopy *(5 pages)* 064301

A. Algora, E. Nácher, B. Rubio, D. Cano-Ott, J. L. Taín, A. Gadea, J. Agramunt, M. Karny, Z. Janas, K. Rykaczewski, R. Collatz, M. Hellström, Z. Hu, R. Kirchner, E. Roeckl, M. Shibata, L. Batist, F. Moroz, and V. Wittmann

Dynamical symmetry of isobaric analog 0^+ states in medium mass nuclei *(6 pages)* 064302

K. D. Sviratcheva, A. I. Georgieva, and J. P. Draayer

Development of shell closures at $N=32,34$. I. β decay of neutron-rich Sc isotopes *(9 pages)* 064303

S. N. Liddick, P. F. Mantica, R. Broda, B. A. Brown, M. P. Carpenter, A. D. Davies, B. Fornal, T. Glasmacher, D. E. Groh, M. Honma, M. Horoi, R. V. F. Janssens, T. Mizusaki, D. J. Morrissey, A. C. Morton, W. F. Mueller, T. Otsuka, J. Pavan, H. Schatz, A. Stolz, S. L. Tabor, B. E. Tomlin, and M. Wiedeking

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 70, NUMBER 6 DECEMBER 2004

Development of shell closures at $N=32,34$. II. Lowest yrast excitations in even-even Ti isotopes from deep-inelastic heavy-ion collisions *(6 pages)* 064304
B. Fornal, S. Zhu, R. V. F. Janssens, M. Honma, R. Broda, P. F. Mantica, B. A. Brown, M. P. Carpenter, P. J. Daly, S. J. Freeman, Z. W. Grabowski, N. J. Hammond, F. G. Kondev, W. Królas, T. Lauritsen, S. N. Liddick, C. J. Lister, E. F. Moore, T. Otsuka, T. Pawłat, D. Seweryniak, B. E. Tomlin, and J. Wrzesiński

Compton scattering of polarized γ rays by ^{16}O for $E_\gamma=25$–40 MeV *(7 pages)* 064305
B. A. Perdue, M. W. Ahmed, A. P. Tonchev, H. R. Weller, G. Feldman, V. N. Litvinenko, I. V. Pinayev, B. E. Norum, R. M. Prior, M. C. Spraker, and B. D. Sawatzky

Observation of the $\pi h_{11/2}\otimes\nu i_{13/2}$ band in odd-odd ^{170}Re *(5 pages)* 064306
H. L. Wang, Y. H. Zhang, X. H. Zhou, M. Moyo Ndontchueng, Y. X. Guo, X. G. Lei, M. L. Liu, L. Peng, C. Y. Xie, L. T. Song, H. P. Yu, Y. Zheng, W. T. Guo, S. X. Wen, L. H. Zhu, X. G. Wu, and F. R. Xu

Dipole and quadrupole excitations in ^{88}Sr up to 6.8 MeV *(10 pages)* 064307
L. Käubler, H. Schnare, R. Schwengner, H. Prade, F. Dönau, P. von Brentano, J. Eberth, J. Enders, A. Fitzler, C. Fransen, M. Grinberg, R.-D. Herzberg, H. Kaiser, P. von Neumann-Cosel, N. Pietralla, A. Richter, G. Rusev, Ch. Stoyanov, and I. Wiedenhöver

α decay and recoil decay tagging studies of ^{183}Tl *(8 pages)* 064308
P. M. Raddon, D. G. Jenkins, C. D. O'Leary, A. J. Simons, R. Wadsworth, A. N. Andreyev, R. D. Page, M. P. Carpenter, F. G. Kondev, T. Enqvist, P. T. Greenlees, P. M. Jones, R. Julin, S. Juutinen, H. Kettunen, M. Leino, A.-P. Leppänen, P. Nieminen, J. Pakarinen, P. Rahkila, J. Uusitalo, and D. T. Joss

Deformed quasiparticle random phase approximation formalism for single- and two-neutrino double β decay *(13 pages)* 064309
R. Álvarez-Rodríguez, P. Sarriguren, E. Moya de Guerra, L. Pacearescu, Amand Faessler, and F. Šimkovic

Antiferromagnetic spin phase transition in nuclear matter with effective Gogny interaction *(6 pages)* 064310
A. A. Isayev and J. Yang

^{8}Be+^{8}Be decay of excited states in ^{16}O *(8 pages)* 064311
M. Freer, M. P. Nicoli, S. M. Singer, C. A. Bremner, S. P. G. Chappell, W. D. M. Rae, I. Boztosun, B. R. Fulton, D. L. Watson, B. J. Greenhalgh, G. K. Dillon, R. L. Cowin, and D. C. Weisser

Multifaceted yrast structure and the onset of deformation in ^{96,97}Sr and ^{98,99}Zr *(9 pages)* 064312
C. Y. Wu, H. Hua, D. Cline, A. B. Hayes, R. Teng, R. M. Clark, P. Fallon, A. Goergen, A. O. Macchiavelli, and K. Vetter

Proton-neutron coupling in the Gamow shell model: The lithium chain *(11 pages)* 064313
N. Michel, W. Nazarewicz, and M. Płoszajczak

First identification of γ-ray transitions in ^{107}Te *(4 pages)* 064314
B. Hadinia, B. Cederwall, K. Lagergren, J. Blomqvist, T. Bäck, S. Eeckhaudt, T. Grahn, P. Greenlees, A. Johnson, D. T. Joss, R. Julin, S. Juutinen, H. Kettunen, M. Leino, A.-P. Leppänen, R. J. Liotta, P. Nieminen, M. Nyman, J. Pakarinen, E. S. Paul, P. Rahkila, C. Scholey, J. Uusitalo, R. Wadsworth, and D. R. Wiseman

Superdeformed band at very high spin in ^{140}Nd *(6 pages)* 064315
A. Neußer, H. Hübel, A. Al-Khatib, P. Bringel, A. Bürger, N. Nenoff, G. Schönwaßer, A. K. Singh, C. M. Petrache, G. Lo Bianco, I. Ragnarsson, G. B. Hagemann, B. Herskind, D. R. Jensen, G. Sletten, P. Fallon, A. Görgen, P. Bednarczyk, D. Curien, G. Gangopadhyay, A. Korichi, A. Lopez-Martens, B. V. T. Rao, T. S. Reddy, and Nirmal Singh

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 70, NUMBER 6 DECEMBER 2004

Microscopic structure of low-lying 0^+ states in the deformed ^{158}Gd *(9 pages)* 064316
N. Lo Iudice, A. V. Sushkov, and N. Yu. Shirikova

Probing nuclear shapes close to the fission limit with the giant dipole resonance in ^{216}Rn *(9 pages)* 064317
M. Kmiecik, A. Maj, B. Million, M. Brekiesz, W. Królas, W. Męczyński, J. Styczeń, M. Zięblíński, A. Bracco, F. Camera, G. Benzoni, S. Leoni, O. Wieland, S. Brambilla, B. Herskind, M. Kicińska-Habior, N. Dubray, J. Dudek, and N. Schunck

Cluster interpretation of parity doublet rotational bands in odd-mass nuclei *(9 pages)* 064318
G. G. Adamian, N. V. Antonenko, R. V. Jolos, and T. M. Shneidman

Description of nuclear octupole and quadrupole deformation close to the axial symmetry and phase transitions in the octupole mode *(18 pages)* 064319
P. G. Bizzeti and A. M. Bizzeti-Sona

Pushing the pseudo-SU(3) model towards its limits: Excited bands in even-even Dy isotopes *(9 pages)* 064320
Carlos E. Vargas and Jorge G. Hirsch

$E2$ excitation strength in ^{55}Ni: Coupling of the ^{56}Ni 2_1^+ collective core vibration to the $f_{7/2}$ odd neutron hole *(4 pages)* 064321
K. L. Yurkewicz, D. Bazin, B. A. Brown, C. M. Campbell, J. A. Church, D.-C. Dinca, A. Gade, T. Glasmacher, M. Honma, T. Mizusaki, W. F. Mueller, H. Olliver, T. Otsuka, L. A. Riley, and J. R. Terry

Relativistic Hartree approach with exact treatment of vacuum polarization for finite nuclei *(9 pages)* 064322
Akihiro Haga, Setsuo Tamenaga, Hiroshi Toki, and Yataro Horikawa

Nuclear Reactions

Experimental and theoretical study of the ^{2}H$(\vec{d},\gamma)^4$He reaction below $E_{\text{c.m.}}=60$ keV *(5 pages)* 064601
K. Sabourov, M. W. Ahmed, S. R. Canon, B. Crowley, K. Joshi, J. H. Kelley, S. O. Nelson, B. A. Perdue, E. C. Schreiber, A. Sabourov, A. Tonchev, H. R. Weller, E. A. Wulf, R. M. Prior, M. C. Spraker, H. M. Hofmann, and M. Trini

Correlated two-nucleon stripping reactions *(9 pages)* 064602
J. A. Tostevin, G. Podolyák, B. A. Brown, and P. G. Hansen

Enhanced nuclear level decay in hot dense plasmas *(9 pages)* 064603
G. Gosselin and P. Morel

Spin-spin interaction between polarized neutrons and polarized ^{27}Al, ^{59}Co, and ^{93}Nb from dispersive optical model and coupled-channel analyses *(5 pages)* 064604
M. M. Nagadi, G. J. Weisel, R. L. Walter, J. P. Delaroche, and P. Romain

Time-dependent analysis of the breakup of ^{11}Be on ^{12}C at 67 MeV/nucleon *(9 pages)* 064605
P. Capel, G. Goldstein, and D. Baye

Detection of the natural α decay of tungsten *(6 pages)* 064606
C. Cozzini, G. Angloher, C. Bucci, F. von Feilitzsch, D. Hauff, S. Henry, Th. Jagemann, J. Jochum, H. Kraus, B. Majorovits, V. Mikhailik, J. Ninkovic, F. Petricca, W. Potzel, F. Pröbst, Y. Ramachers, W. Rau, M. Razeti, W. Seidel, M. Stark, L. Stodolsky, A. J. B. Tolhurst, W. Westphal, and H. Wulandari

Measurements of the breakup and neutron removal cross sections for ^{16}C *(5 pages)* 064607
N. I. Ashwood, M. Freer, J. C. Angélique, V. Bouchat, W. N. Catford, N. M. Clarke, N. Curtis, O. Dorvaux, F. Hanappe, Y. Kerckx, M. Labiche, J. L. Lecouey, F. M. Marqués, T. Materna, A. Ninane, G. Normand, N. A. Orr, S. Pain, N. Soić, L. Stuttgé, C. Timis, A. Unshakova, and V. A. Ziman

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 70, NUMBER 6 DECEMBER 2004

Isotopic and velocity distributions of $_{83}$Bi produced in charge-pickup reactions of $^{208}_{82}$Pb at 1*A* GeV *(12 pages)* 064608
A. Kelić, K.-H. Schmidt, T. Enqvist, A. Boudard, P. Armbruster, J. Benlliure, M. Bernas, S. Czajkowski, R. Legrain, S. Leray, B. Mustapha, M. Pravikoff, F. Rejmund, C. Stéphan, J. Taïeb, L. Tassan-Got, C. Volant, and W. Wlazło

Measurements of cross sections and decay properties of the isotopes of elements 112, 114, and 116 produced in the fusion reactions ^{233,238}U, ^{242}Pu, and ^{248}Cm+^{48}Ca *(14 pages)* 064609
Yu. Ts. Oganessian, V. K. Utyonkov, Yu. V. Lobanov, F. Sh. Abdullin, A. N. Polyakov, I. V. Shirokovsky, Yu. S. Tsyganov, G. G. Gulbekian, S. L. Bogomolov, B. N. Gikal, A. N. Mezentsev, S. Iliev, V. G. Subbotin, A. M. Sukhov, A. A. Voinov, G. V. Buklanov, K. Subotic, V. I. Zagrebaev, M. G. Itkis, J. B. Patin, K. J. Moody, J. F. Wild, M. A. Stoyer, N. J. Stoyer, D. A. Shaughnessy, J. M. Kenneally, P. A. Wilk, R. W. Lougheed, R. I. Il'kaev, and S. P. Vesnovskii

Radial flow has little effect on clusterization at intermediate energies in the framework of the lattice gas model *(4 pages)* 064610
C. B. Das, L. Shi, and S. Das Gupta

Search for the three-body photodisintegration of Be *(5 pages)* 064611
D. E. Alburger, R. E. Chrien, R. J. Sutter, and J. F. Wishart

Relativistic Nuclear Collisions

Phase-space densities and effects of resonance decays in a hydrodynamic approach to heavy ion collisions *(17 pages)* 064901
S. V. Akkelin and Yu. M. Sinyukov

Shadowing effects on the nuclear suppression factor, $R_{d\mathrm{Au}}$, in d+Au interactions *(6 pages)* 064902
R. Vogt

Electric charge fluctuations in central Pb+Pb collisions at 20*A*, 30*A*, 40*A*, 80*A*, and 158*A* GeV *(7 pages)* 064903
C. Alt, T. Anticic, B. Baatar, D. Barna, J. Bartke, M. Behler, L. Betev, H. Białkowska, A. Billmeier, C. Blume, B. Boimska, M. Botje, J. Bracinik, R. Bramm, R. Brun, P. Bunčić, V. Cerny, P. Christakoglou, O. Chvala, J. G. Cramer, P. Csató, N. Darmenov, A. Dimitrov, P. Dinkelaker, V. Eckardt, P. Filip, D. Flierl, Z. Fodor, P. Foka, P. Freund, V. Friese, J. Gál, M. Gaździcki, G. Georgopoulos, E. Gładysz, K. Grebieszkow, S. Hegyi, C. Höhne, K. Kadija, A. Karev, M. Kliemant, S. Kniege, V. I. Kolesnikov, T. Kollegger, E. Kornas, R. Korus, M. Kowalski, I. Kraus, M. Kreps, M. van Leeuwen, P. Lévai, L. Litov, B. Lungwitz, M. Makariev, A. I. Malakhov, C. Markert, M. Mateev, B. W. Mayes, G. L. Melkumov, C. Meurer, A. Mischke, M. Mitrovski, J. Molnár, St. Mrówczyński, G. Pálla, A. D. Panagiotou, D. Panayotov, A. Petridis, M. Pikna, L. Pinsky, F. Pühlhofer, J. G. Reid, R. Renfordt, A. Richard, C. Roland, G. Roland, M. Rybczyński, A. Rybicki, A. Sandoval, H. Sann, N. Schmitz, P. Seyboth, F. Siklér, B. Sitar, E. Skrzypczak, G. Stefanek, R. Stock, H. Ströbele, T. Susa, I. Szentpétery, J. Sziklai, T. A. Trainor, D. Varga, M. Vassiliou, G. I. Veres, G. Vesztergombi, D. Vranic, A. Wetzler, Z. Włodarczyk, I. K. Yoo, J. Zaranek, and J. Zimányi (NA49 collaboration)

Signature of granular structures by single-event intensity interferometry *(15 pages)* 064904
Cheuk-Yin Wong and Wei-Ning Zhang

Azimuthally sensitive correlations in nucleus-nucleus collisions *(9 pages)* 064905
N. Borghini and J.-Y. Ollitrault

Baryon junction loops and the baryon-meson anomaly at high energies *(11 pages)* 064906
V. Topor Pop, M. Gyulassy, J. Barrette, C. Gale, X. N. Wang, and N. Xu

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 70, NUMBER 6** **DECEMBER 2004**

Pseudorapidity asymmetry and centrality dependence of charged hadron spectra in d+Au collisions at $\sqrt{s_{NN}}$=200 GeV *(7 pages)* 064907

J. Adams, M. M. Aggarwal, Z. Ahammed, J. Amonett, B. D. Anderson, D. Arkhipkin, G. S. Averichev, Y. Bai, J. Balewski, O. Barannikova, L. S. Barnby, J. Baudot, S. Bekele, V. V. Belaga, R. Bellwied, J. Berger, B. I. Bezverkhny, S. Bharadwaj, A. Bhasin, A. K. Bhati, V. S. Bhatia, H. Bichsel, A. Billmeier, L. C. Bland, C. O. Blyth, B. E. Bonner, M. Botje, A. Boucham, A. V. Brandin, A. Bravar, M. Bystersky, R. V. Cadman, X. Z. Cai, H. Caines, M. Calderón de la Barca Sánchez, J. Castillo, D. Cebra, Z. Chajecki, P. Chaloupka, S. Chattopdhyay, H. F. Chen, Y. Chen, J. Cheng, M. Cherney, A. Chikanian, W. Christie, J. P. Coffin, T. M. Cormier, J. G. Cramer, H. J. Crawford, D. Das, S. Das, M. M. de Moura, A. A. Derevschikov, L. Didenko, T. Dietel, S. M. Dogra, W. J. Dong, X. Dong, J. E. Draper, F. Du, A. K. Dubey, V. B. Dunin, J. C. Dunlop, M. R. Dutta Mazumdar, V. Eckardt, W. R. Edwards, L. G. Efimov, V. Emelianov, J. Engelage, G. Eppley, B. Erazmus, M. Estienne, P. Fachini, J. Faivre, R. Fatemi, J. Fedorisin, K. Filimonov, P. Filip, E. Finch, V. Fine, Y. Fisyak, K. Fomenko, J. Fu, C. A. Gagliardi, L. Gaillard, J. Gans, M. S. Ganti, L. Gaudichet, F. Geurts, V. Ghazikhanian, P. Ghosh, J. E. Gonzalez, O. Grachov, O. Grebenyuk, D. Grosnick, S. M. Guertin, Y. Guo, A. Gupta, T. D. Gutierrez, T. J. Hallman, A. Hamed, D. Hardtke, J. W. Harris, M. Heinz, T. W. Henry, S. Hepplemann, B. Hippolyte, A. Hirsch, E. Hjort, G. W. Hoffmann, H. Z. Huang, S. L. Huang, E. W. Hughes, T. J. Humanic, G. Igo, A. Ishihara, P. Jacobs, W. W. Jacobs, M. Janik, H. Jiang, P. G. Jones, E. G. Judd, S. Kabana, K. Kang, M. Kaplan, D. Keane, V. Yu. Khodyrev, J. Kiryluk, A. Kisiel, E. M. Kislov, J. Klay, S. R. Klein, D. D. Koetke, T. Kollegger, M. Kopytine, L. Kotchenda, M. Kramer, P. Kravtsov, V. I. Kravtsov, K. Krueger, C. Kuhn, A. I. Kulikov, A. Kumar, R. Kh. Kutuev, A. A. Kuznetsov, M. A. C. Lamont, J. M. Landgraf, S. Lange, F. Laue, J. Lauret, A. Lebedev, R. Lednicky, S. Lehocka, M. J. LeVine, C. Li, Q. Li, Y. Li, G. Lin, S. J. Lindenbaum, M. A. Lisa, F. Liu, L. Liu, Q. J. Liu, Z. Liu, T. Ljubicic, W. J. Llope, H. Long, R. S. Longacre, M. Lopez-Noriega, W. A. Love, Y. Lu, T. Ludlam, D. Lynn, G. L. Ma, J. G. Ma, Y. G. Ma, D. Magestro, S. Mahajan, D. P. Mahapatra, R. Majka, L. K. Mangotra, R. Manweiler, S. Margetis, C. Markert, L. Martin, J. N. Marx, H. S. Matis, Yu. A. Matulenko, C. J. McClain, T. S. McShane, F. Meissner, Yu. Melnick, A. Meschanin, M. L. Miller, N. G. Minaev, C. Mironov, A. Mischke, D. K. Mishra, J. Mitchell, B. Mohanty, L. Molnar, C. F. Moore, M. J. Mora-Corral, D. A. Morozov, M. G. Munhoz, B. K. Nandi, S. K. Nayak, T. K. Nayak, J. M. Nelson, P. K. Netrakanti, V. A. Nikitin, L. V. Nogach, S. B. Nurushev, G. Odyniec, A. Ogawa, V. Okorokov, M. Oldenburg, D. Olson, S. K. Pal, Y. Panebratsev, S. Y. Panitkin, A. I. Pavlinov, T. Pawlak, T. Peitzmann, V. Perevoztchikov, C. Perkins, W. Peryt, V. A. Petrov, S. C. Phatak, R. Picha, M. Planinic, J. Pluta, N. Porile, J. Porter, A. M. Poskanzer, M. Potekhin, E. Potrebenikova, B. V. K. S. Potukuchi, D. Prindle, C. Pruneau, J. Putschke, G. Rakness, R. Raniwala, S. Raniwala, O. Ravel, R. L. Ray, S. V. Razin, D. Reichhold, J. G. Reid, G. Renault, F. Retiere, A. Ridiger, H. G. Ritter, J. B. Roberts, O. V. Rogachevskiy, J. L. Romero, A. Rose, C. Roy, L. Ruan, R. Sahoo, I. Sakrejda, S. Salur, J. Sandweiss, M. Sarsour, I. Savin, P. S. Sazhin, J. Schambach, R. P. Scharenberg, N. Schmitz, K. Schweda, J. Seger, P. Seyboth, E. Shahaliev, M. Shao, W. Shao, M. Sharma, W. Q. Shen, K. E. Shestermanov, S. S. Shimanskiy, E. Sichtermann, F. Simon, R. N. Singaraju, G. Skoro, N. Smirnov, R. Snellings, G. Sood, P. Sorensen, J. Sowinski, J. Speltz, H. M. Spinka, B. Srivastava, A. Stadnik, T. D. S. Stanislaus, R. Stock, A. Stolpovsky, M. Strikhanov, B. Stringfellow, A. A. P. Suaide, E. Sugarbaker, C. Suire, M. Sumbera, B. Surrow, T. J. M. Symons, A. Szanto de Toledo, P. Szarwas, A. Tai, J. Takahashi, A. H. Tang, T. Tarnowsky, D. Thein, J. H. Thomas, S. Timoshenko, M. Tokarev, T. A. Trainor, S. Trentalange, R. E. Tribble, O. D. Tsai, J. Ulery, T. Ullrich, D. G. Underwood, A. Urkinbaev, G. Van Buren, M. van Leeuwen, A. M. Vander Molen, R. Varma, I. M. Vasilevski, A. N. Vasiliev, R. Vernet, S. E. Vigdor, Y. P. Viyogi, S. Vokal, S. A. Voloshin, M. Vznuzdaev, W. T. Waggoner, F. Wang, G. Wang, G. Wang, X. L. Wang, Y. Wang, Y. Wang, Z. M. Wang, H. Ward, J. W. Watson, J. C. Webb, R. Wells, G. D. Westfall, A. Wetzler, C. Whitten, Jr., H. Wieman, S. W. Wissink, R. Witt, J. Wood, J. Wu, N. Xu, Z. Xu, Z. Z. Xu,

(Continued)

PHYSICAL REVIEW C THIRD SERIES, VOLUME 70, NUMBER 6 DECEMBER 2004

E. Yamamoto, P. Yepes, V. I. Yurevich, Y. V. Zanevsky, H. Zhang, W. M. Zhang, Z. P. Zhang, R. Zoulkarneev, Y. Zoulkarneeva, and A. N. Zubarev (STAR Collaboration)

Hadronic Physics and QCD

Phenomenological Lagrangian approach to two kaon photoproduction and pentaquark searches *(15 pages)* 065201
W. Roberts

$\Lambda(1405)$ and $\bar{\Lambda}(1405)$ in J/ψ four-body decays *(8 pages)* 065202
Chiangbing Li and E. Oset

Baryon structure in a quark-confining nonlocal Nambu–Jona–Lasinio model *(15 pages)* 065203
Amir H. Rezaeian, Niels R. Walet, and Michael C. Birse

Superconvergence relations and parity violating analog of Gerasimov-Drell-Hearn sum rule *(7 pages)* 065204
Krzysztof Kurek and Leszek Lukaszuk

Chiral solitons in nuclei: Electromagnetic form factors *(6 pages)* 065205
Jason R. Smith and Gerald A. Miller

QCD sum rule description of nucleons in asymmetric nuclear matter *(13 pages)* 065206
E. G. Drukarev, M. G. Ryskin, and V. A. Sadovnikova

Precision measurement of the neutron spin asymmetries and spin-dependent structure functions in the valence quark region *(25 pages)* 065207
X. Zheng, K. Aniol, D. S. Armstrong, T. D. Averett, W. Bertozzi, S. Binet, E. Burtin, E. Busato, C. Butuceanu, J. Calarco, A. Camsonne, G. D. Cates, Z. Chai, J.-P. Chen, Seonho Choi, E. Chudakov, F. Cusanno, R. De Leo, A. Deur, S. Dieterich, D. Dutta, J. M. Finn, S. Frullani, H. Gao, J. Gao, F. Garibaldi, S. Gilad, R. Gilman, J. Gomez, J.-O. Hansen, D. W. Higinbotham, W. Hinton, T. Horn, C. W. de Jager, X. Jiang, L. Kaufman, J. Kelly, W. Korsch, K. Kramer, J. LeRose, D. Lhuillier, N. Liyanage, D. J. Margaziotis, F. Marie, P. Markowitz, K. McCormick, Z.-E. Meziani, R. Michaels, B. Moffit, S. Nanda, D. Neyret, S. K. Phillips, A. Powell, T. Pussieux, B. Reitz, J. Roche, R. Roché, M. Roedelbronn, G. Ron, M. Rvachev, A. Saha, N. Savvinov, J. Singh, S. Širca, K. Slifer, P. Solvignon, P. Souder, D. J. Steiner, S. Strauch, V. Sulkosky, A. Tobias, G. Urciuoli, A. Vacheret, B. Wojtsekhowski, H. Xiang, Y. Xiao, F. Xiong, B. Zhang, L. Zhu, X. Zhu, and P. A. Żołnierczuk (Jefferson Lab Hall A Collaboration)

Electroweak Interaction, Symmetries

Nuclear (μ^-, e^+) conversion mediated by Majorana neutrinos *(14 pages)* 065501
P. Domin, S. Kovalenko, Amand Faessler, and F. Šimkovic

Nuclear Astrophysics

$^1S_0$ proton superfluidity in neutron star matter: Impact of bulk properties *(7 pages)* 065801
Tomonori Tanigawa, Masayuki Matsuzaki, and Satoshi Chiba

Reanalysis of the $^7\mathrm{Be}(p,\gamma)^8\mathrm{B}$ S factor in a microscopic model *(10 pages)* 065802
P. Descouvemont

Nucleosynthesis at the termination point of the *s* process *(10 pages)* 065803
U. Ratzel, C. Arlandini, F. Käppeler, A. Couture, M. Wiescher, R. Reifarth, R. Gallino, A. Mengoni, and C. Travaglio

(Continued)

PHYSICAL REVIEW C **THIRD SERIES, VOLUME 70, NUMBER 6** **DECEMBER 2004**

Diffusive instability of a kaon condensate in neutron star matter *(9 pages)* 065804
Sebastian Kubis

Astrophysically important ^{26}Si states studied with the (^{3}He,n) reaction and the ^{25}Al(p,γ)^{26}Si reaction rates in explosive hydrogen burning environments *(9 pages)* 065805
Y. Parpottas, S. M. Grimes, S. Al-Quraishi, C. R. Brune, T. N. Massey, J. E. Oldendick, A. Salas, and R. T. Wheeler

Nonuniform neutron-rich matter and coherent neutrino scattering *(15 pages)* 065806
C. J. Horowitz, M. A. Pérez-García, J. Carriere, D. K. Berry, and J. Piekarewicz

BRIEF REPORTS

Deuteron elastic and inelastic scattering at intermediate energies from nuclei in the mass range $6 \leqslant A \leqslant 116$ *(4 pages)* 067601
A. Korff, P. Haefner, C. Bäumer, A. M. van den Berg, N. Blasi, B. Davids, D. De Frenne, R. de Leo, D. Frekers, E.-W. Grewe, M. N. Harakeh, F. Hofmann, M. Hunyadi, E. Jacobs, B. C. Junk, A. Negret, P. von Neumann-Cosel, L. Popescu, S. Rakers, A. Richter, and H. J. Wörtche

Study of the ^{124}Sn(d,p) reaction in inverse kinematics close to the Coulomb barrier *(4 pages)* 067602
K. L. Jones, R. L. Kozub, C. Baktash, D. W. Bardayan, J. C. Blackmon, W. N. Catford, J. A. Cizewski, R. P. Fitzgerald, M. S. Johnson, R. J. Livesay, Z. Ma, C. D. Nesaraja, D. Shapira, M. S. Smith, J. S. Thomas, and D. W. Visser

Comparison of models of critical opacity in the quark-gluon plasma *(3 pages)* 068201
Xiangdong Li and C. M. Shakin

Simple parametrization of nucleon form factors *(3 pages)* 068202
J. J. Kelly

Neutron fraction and neutrino mean free path predictions in relativistic mean field models *(4 pages)* 068801
P. T. P. Hutauruk, C. K. Williams, A. Sulaksono, and T. Mart

Selected Abstracts from Other Physical Review Journals i

Cumulative Author Index viii