

## Physics Division Published Journal Articles, July-December 2014

PHY-13696-ME-2014

Probing the Repulsive Core of the Nucleon-Nucleon Interaction Via the  ${}^4\text{He} (e, e'pN)$  Triple-Coincidence Reaction

I. Korover *et al.* (Jefferson Lab Hall A Collaboration)  
Phys. Rev. Lett. **113**, 022501/1-5 (2014)

PHY-13752-HI-2014

Fusion Hindrance for a Positive- $Q$ -Value System -  ${}^{24}\text{Mg} + {}^{30}\text{Si}$

C. L. Jiang, A. M. Stefanini, H. Esbensen, K. E. Rehm, S. Almaraz-Calderon, B. B. Back, L. Corradi, E. Fioretto, G. Montagnoli, F. Scarlassara, D. Montanari, S. Courtin, D. Bourgin, F. Haas, A. Goasduff, S. Szilner, and T. Mijatovic  
Phys. Rev. Lett. **113**, 02270/1-5 (2014)

PHY-13946-ME-2014

Strangeness Suppression of  $q\bar{q}$  Creation Observed in Exclusive Reactions

M. D. Mestayer *et al.* (CLAS Collaboration)  
Phys. Rev. Lett. **113**, 152004/1-6 (2014)

PHY-13852-HI-2014

Fission Barrier of Super-Heavy Nuclei and Persistence of Shell Effects at High Spins: Cases of  ${}^{254}\text{No}$  and  ${}^{220}\text{Th}$

Greg Henning, T. L. Khoo, A. Lopez-Martens, D. Seweryniak, M. Alcorta, M. Asai, B. B. Back, P. F. Bertone, D. Boilley, M. P. Carpenter, C. J. Chiara, P. Chowdhury, B. Gall, P. T. Greenlees, G. Gürdal, K. Hauschild, A. Heinz, C. R. Hoffman, R. V. F. Janssens, A. V. Karpov, B. P. Kay, F. G. Kondev, S. Lakshmi, T. Lauritsen, C. J. Lister, E. A. McCutchan, C. Nair, J. Piot, D. Potterveld, P. Reiter, A. M. Rogers, N. Rowley, and S. Zhu  
Phys. Rev. Lett. **113**, 262505/1-6 (2014)

PHY-13887-HI-2014

$N = 151$  Pu, Cm and Cf Nuclei Under Rotational Stress: Role of Higher-Order Deformations

S. S. Hota, P. Chowdhury, T. L. Khoo, M. P. Carpenter, R. V. F. Janssens, Y. Qiu, I. Ahmad, J. P. Greene, S. K. Tandel, D. Seweryniak, S. Zhu, P. F. Bertone, C. J. Chiara, A. Y. Deo, N. D'Olympia, S. Gros, C. J. Guess, T. Harrington, D. J. Hartley, G. Henning, C. R. Hoffman, E. G. Jackson, F. G. Kondev, S. Lakshmi, T. Lauritsen, C. J. Lister, E. A. McCutchan, K. Moran, C. Nair, D. Peterson, U. Shirwadkar, and I. Stefanescu  
Phys. Lett. **B739**, 13-18 (2014)

PHY-13880-HI-2014

Low-Lying Isomeric States in  $^{80}\text{Ga}$  from the  $\beta^-$  Decay of  $^{80}\text{Zn}$

R. Lica, N. Marginean, D. G. Ghita, H. Mach, L. M. Fraile, G. S. Simpson, A. Aprahamian, C. Bernards, J. A. Briz, B. Bucher, C. J. Chiara, Z. Dlouhy, I. Gheorghe, P. Hoff, J. Jolie, U. Koster, W. Kurcewicz, R. Marginean, B. Olaizola, V. Pazyi, J. M. Regis, M. Rudigier, T. Sava, M. Stanoiu, L. Stroe, and W. B. Walters  
Phys. Rev. C **90**, 014320/1-7 (2014)

PHY-13748-HI-2014

High-Spin Structure of Odd-Odd  $^{172}\text{Re}$

D. J. Hartley, R. V. F. Janssens, L. L. Riedinger, M. A. Riley, X. Wang, S. Miller, A. D. Ayangeakaa, M. P. Carpenter, J. J. Carroll, J. Cavey, C. J. Chiara, P. Chowdhury, U. Garg, S. S. Hota, E. G. Jackson, F. G. Kondev, T. Lauritsen, M. Litz, W. C. Ma, J. Matta, E. S. Paul, E. E. Pedicini, J. Simpson, J. R. Vanhoy, and S. Zhu  
Phys. Rev. C **90**, 017301/1-5 (2014)

PHY-13761-TH-2014

Quantum Monte Carlo Calculations of Electromagnetic Transitions in  $^8\text{Be}$  with Meson-Exchange Currents Derived from Chiral Effective Field Theory

S. Pastore, R. B. Wiringa, Steven C. Pieper, and R. Schiavilla  
Phys. Rev. C **90**, 024321/1-12 (2014)

PHY-13755-HI-2014

Revised Level Structure of  $^{120}\text{Te}$

Somnath Nag, Purnima Singh, A. K. Singh, A. Bürger, M. P. Carpenter, S. Chmel, P. Fallon, G. B. Hagemann, B. Herskind, H. Hübel, R. V. F. Janssens, K. Juhász, T. L. Khoo, F. G. Kondev, A. Korichi, T. Lauritsen, B. M. Nyakó, I. Ragnarsson, J. Rogers, G. Sletten, J. Timár, A. N. Wilson, and S. Zhu  
Phys. Rev. C **90**, 037302/1-5 (2014)

PHY-13793-HI-2014

Characterization of Octupole-Type Structure in  $^{221}\text{Th}$

W. Reviol, R. V. F. Janssens, S. Frauendorf, D. G. Sarantites, M. P. Carpenter, X. Chen, C. J. Chiara, D. J. Hartley, K. Hauschild, T. Lauritsen, A. Lopez-Martens, M. Montero, O. L. Pechenaya, D. Seweryniak, J. B. Snyder, and S. Zhu  
Phys. Rev. C **90**, 044318/1-18 (2014)

PHY-13903-TH-2014

Fusion of  $^{28}\text{Si} + ^{28,30}\text{Si}$ : Different Trends at Sub-Barrier Energies

G. Montagnoli, A. M. Stefanini, H. Esbensen, C. L. Jiang, L. Corradi, S. Courtin, E. Fioretto, J. Grebosz, F. Haas, H. M. Jia, M. Mazzocco, C. Michelagnoli, T. Mijatović, D. Montanari, C. Parascandolo, F. Scarlassara, E. Strano, S. Szilner, and D. Torresi  
Phys. Rev. C **90**, 044608/1-8 (2014)

PHY-13891-HI-2014

Multiple Excitation Modes in  $^{163}\text{Hf}$

R. B. Yadav, W. C. Ma, J. C. Marsh, Q. A. Ijaz, R. V. F. Janssens, M. P. Carpenter, C. R. Hoffman, T. Lauritsen, S. Zhu, F. G. Kondev, G. Gürdal, G. B. Hagemann, D. J. Hartley, L. L. Riedinger, and S. Mukhopadhyay  
Phys. Rev. C **90**, 054325/1-12 (2014)

PHY-13708-TH-2014

Finite-Volume Hamiltonian Method for Coupled-Channels Interactions in Lattice QCD

Jia-Jun Wu, T.-S. H. Lee, A. W. Thomas, and R. D. Young  
Phys. Rev. C **90**, 055206/1-14 (2014)

PHY-13843-TH-2014

Dynamical Coupled-Channels Model of  $K^-p$  Reactions: Determination of Partial-Wave Amplitudes

H. Kamano, S. X. Nakamura, T.-S. H. Lee, and T. Sato  
Phys. Rev. C **90**, 065204/1-40 (2014)

PHY-13787-TH-2014

Parton Distribution Amplitudes of Light Vector Mesons

Fei Gao, Lei Chang, Yu-Xin Liu, Craig D. Roberts, and Sebastian M. Schmidt  
Phys. Rev. D **90**, 014011/1-14 (2014)

PHY-13780-ME-2014

Transverse Polarisation of  $\Lambda$  Hyperons from Quasireal Photoproduction on Nuclei

A. Airapetian *et al.* (HERMES Collaboration)  
Phys. Rev. D **90**, 072007/1-7 (2014)

PHY-13697-RI-2014

Design and Multiphysics Analysis of a 176 MHz Continuous-Wave Radio-Frequency Quadrupole

S. V. Kutsaev, B. Mustapha, P. N. Ostroumov, A. Barcikowski, D. Schrage, J. Rodnizki, and D. Berkovits  
Phys. Rev. ST-AB **17**, 072001/1-11 (2014)

PHY-13800-TH-2014

Non-Exponential and Oscillatory Decays in Quantum Mechanics

Murray Peshkin, Alexander Volya, and Vladimir Zelevinsky  
Europhysics Letters **107**, 40001/1-7 (2014)

PHY-13889-TH-2014

Nucleon and  $\Delta$  Elastic and Transition Form Factors

Jorge Segovia, Ian C. Cloët, Craig D. Roberts, and Sebastian M. Schmidt  
Few-Body Syst. **55**, 1185-1222 (2014)

PHY-13429-ME-2013

Measurement of the  $^{12}\text{C}(e,e'p)^{11}\text{B}$  Two-Body Breakup Reaction at High Missing Momentum

P. Monaghan *et al.*

J. Phys. G. **41**, 105109/1-11 (2014)

PHY-13882-HI-2014

First Application of the  $\gamma$ -Summing Technique in Inverse Kinematics

S. J. Quinn, A. Spyrou, A. Simon, A. Battaglia, M. Bowers, B. Bucher, C. Casarella, M. Couder, P. A. DeYoung, A. C. Dombos, J. P. Greene, J. Gorres, A. Kontos, Q. Li, A. Long, M. Moran, N. Paul, J. Pereira, D. Robertson, K. Smith, and M. K. Smith

Nucl. Instrum. Methods **A757**, 62-66 (2014)

PHY-13883-HI-2014

The X-Array and SATURN: A New Decay-Spectroscopy Station for CARIBU

A. J. Mitchell, P. F. Bertone, B. DiGiovine, C. J. Lister, M. P. Carpenter, P. Chowdhury, J. A. Clark, N. D'Olympia, A. Y. Deo, F. G. Kondev, E. A. McCutchan, J. Rohrer, G. Savard, D. Seweryniak, and S. Zhu

Nucl. Instrum. Methods **A763**, 232-239 (2014)

PHY-13884-HI-2014

Extraction of Thermalized Projectile Fragments from a Large Volume Gas Cell

K. Cooper, C. S. Sumithrarachchi, D. J. Morrissey, A. Levand, J. A. Rodriguez, G. Savard, S. Schwarz, and B. Zabransky

Nucl. Instrum. Methods **A763**, 543-546 (2014)

PHY-13970-ME-2014

The Large-Area Hybrid-Optics CLAS12 RICH Detector: Tests of Innovative Components

M. Contalbrigo, N. Baltzell, F. Benmokhtar, L. Barion, E. Cisbani, A. El Alaoui, K. Hafidi, M. Hoek, V. Kubarovsky, L. Lagamba, V. Lucherini, R. Malaguti, M. Mirazita, R. Montgomery, A. Movsisyan, P. Musico, D. Orecchini, A. Orlandi, L. L. Pappalardo, S. Pereira, R. Perrino, J. Phillips, S. Pisano, P. Rossi, S. Squerzanti, S. Tomassini, M. Turisini, and A. Viticchiè

Nucl. Instrum. Methods **A766**, 22-27 (2014)

PHY-13630-TH-2013

Explanation and Prediction of Observables Using Continuum Strong QCD

Ian C. Cloët and Craig D. Roberts

Prog. Part. Nucl. Phys. **77**, 1-69 (2014)