Physics Division Published Journal Articles, January-June 2014

PHY-13709-ME-2014
Measurement of Parity Violation in Electron-Quark Scattering
D. Wang *et al.* (Jefferson Lab PVDIS Collaboration)
Nature **506**, 67-70 (2014)

PHY-13771-ME-2014
Spin and Parity Measurement of the Λ(1405) Baryon
K. Moriya *et al.* (CLAS Collaboration)
Phys. Rev. Lett. **112**, 082004/1-6 (2014)

PHY-13589-HI-2013
Blurring the Boundaries: Decays of Multiparticle Isomers at the Proton Drip Line
R. J. Carroll, R. D. Page, D. T. Joss, J. Uusitalo, I. G. Darby, K. Andgren, B. Cederwall, S. Eeckhaudt, T. Grahn, C. Gray-Jones, P. T. Greenlees, B. Hadinia, P. M. Jones, R. Julin, S. Juutinen, M. Leino, A.-P. Leppänen, M. Nyman, D. O'Donnell, J. Pakarinen, P. Rahkila, M. Sandzelius, J. Sarén, C. Scholey, D. Seweryniak, and J. Simpson
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PHY-13628-TH-2013
Two-Body and Three-Body Contacts for Identical Bosons Near Unitarity
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PHY-13677-HI-2014
Nuclear Structure Towards $N = 40$ ^{60}Ca: In Beam γ-Ray Spectroscopy of ^{58,60}Ti
A. Gade, R. V. F. Janssens, D. Weisshaar, B. A. Brown, E. Lunderberg, M. Albers, V. M. Bader, T. Baugher, D. Bazin, J. S. Berryman, C. M. Campbell, M. P. Carpenter, C. J. Chiara, H. L. Crawford, M. Cromaz, U. Garg, C. R. Hoffman, F. G. Kondev, C. Langer, T. Lauritsen, I. Y. Lee, S. M. Lenzi, J. T. Matta, F. Nowacki, F. Recchia, K. Sieja, S. R. Stroberg, J. A. Tostevin, S. J. Williams, K. Wimmer, and S. Zhu
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PHY-13629-ME-2013
JLab Measurement of the ^{4}He Charge Form Factor at Large Momentum Transfers
A. Camsonne *et al.*
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PHY-13667-HI-2013

Direct Measurement of the ^{23}Na(α,p)^{26}Mg Reaction Cross Section at Energies Relevant for the Production of Galactic ^{26}Al

S. Almaraz-Calderon, P. F. Bertone, M. Alcorta, M. Albers, C. M. Deibel, C. R. Hoffman, C. L. Jiang, S. T. Marley, K. E. Rehm, and C. Ugalde

Phys. Rev. Lett. **112**, 152701/1-5 (2014)

PHY-13808-HI-2014

Measurement of the Survival Probabilities for Hot Fusion Reactions

R. Yanez, W. Loveland, L. Yao, J. S. Barrett, S. Zhu, B. B. Back, T. L. Khoo, M. Alcorta, and M. Albers

Phys. Rev. Lett. **112**, 152702/1-5 (2014)

PHY-13871-HI-2014

Shape Coexistence in the Neutron-Deficient Even-Even $^{182\text{-}188}$Hg Isotopes Studied Via Coulomb Excitations

N. Bree, K. Wrzosek-Lipska, A. Petts, A. Andreyev, B. Bastin, M. Bender, A. Blazhev, B. Bruyneel, P. A. Butler, J. Butterworth, M. P. Carpenter, J. Cederkall, E. Clement, T. E. Cocolios, A. Deacon, J. Diriken, A. Ekstrom, C. Fitzpatrick, L. M. Fraile, Ch. Fransen, S. J. Freeman, L. P. Gaffney, J. E. Garcia-Ramos, K. Geibel, R. Gernhauser, T. Grahn, M. Guttormsen, B. Hadinia, K. Hadynska-Klek, M. Hass, P.-H. Heenen, R.-D. Herzberg, H. Hess, K. Heyde, M. Huyse, O. Ivanov, D. G. Jenkins, R. Julin, N. Kesteloot, Th. Kroll, R. Krucken. A. C. Larsen, R. Lutter, P. Marley, P. J. Napiorkowski, R. Orlandi, R. D. Page, J. Pakarinen, N. Patronis, P. J. Peura, E. Piselli, P. Rahkila, E. Rapisarda, P. Reiter, A. P. Robinson, M. Scheck, S. Siem, K. Singh Chakkal, J. F. Smith, J. Srebrny, I. Stefanescu, G. M. Tveten, P. Van Duppen, J. Van de Walle, D. Voulot, N. Warr, F. Wenander, A. Wiens, J. L. Wood, and M. Zielinska

Phys. Rev. Lett. **112**, 162701/1-5 (2014)

PHY-13559-ME-2013

Separated Response Function Ratios in Exclusive, Forward $\pi^{\pm}$ Electroproduction

G. M. Huber *et al.* (Jefferson Lab F_{π} Collaboration)

Phys. Rev. Lett. **112**, 182501/1-6 (2014)

PHY-13692-TH-2014

Neutral Weak-Current Two-Body Contributions in Inclusive Scattering from ^{12}C

A. Lovato, S. Gandolfi, J. Carlson, Steven C. Pieper, and R. Schiavilla

Phys. Rev. Lett. **112**, 182502/1-5 (2014)

PHY-13690-HI-2014
Measurements of Fusion Reactions of Low-Intensity Radioactive Carbon Beams on ^{12}C and Their Implications for the Understanding of X-Ray Bursts

P. F. F. Carnelli, S. Almaraz-Calderon, K. E. Rehm, M. Albers, M. Alcorta, P. F. Bertone, B. DiGiovine, H. Esbensen, J. O. Fernández Niello, D. Henderson, C. L. Jiang, J. Lai, S. T. Marley, O. Nusair, T. Palchan-Hazan, R. C. Pardo, M. Paul, and C. Ugalde

Phys. Rev. Lett. **112**, 192701/1-5 (2014)

PHY-13872-HI-2014
Observation of the β-Delayed γ-Proton Decay of ^{56}Zn and Its Impact on the Gamow-Teller Strength Evaluation

S. E. A. Orrigo, B. Rubio, Y. Fujita, B. Blank, W. Gelletly, J. Agramunt, A. Algora, P. Ascher, B. Bilgier, L. Caceres, R. B. Cakirli, H. Fujita, E. Ganioglu, M. Gerbaux, J. Giovinazzo, S. Grevy, O. Kamalou, H. C. Kozer, L. Kucuk, T. Kurtukian-Nieto, F. Molina, L. Popescu, A. M. Rogers, G. Susoy, C. Stodel, T. Suzuki, A. Tamii, and J. C. Thomas

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Test of the $\pi g_{7/2}$ Subshell Closure at $Z = 58$

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PHY-13662-TH-2013
Distribution Amplitudes of Light-Quark Mesons from Lattice QCD

Jorge Segovia, Lei Chang, Ian C. Clöet, Craig D. Roberts, Sebastian M. Schmidt, and Hong-shi Zong

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PHY-13691-TH-2014
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PHY-13689-HI-2014
Influence of Heavy-Ion Transfer on Fusion Reactions

C. L. Jiang, K. E. Rehm, B. B. Back, H. Esbensen, R. V. F. Janssens, A. M. Stefanini, and G. Montagnoli

Phys. Rev. C **89**, 051603(R)/1-4 (2014)

PHY-13661-HI-2013
Neutron *s* States in Loosely Bound Nuclei

C. R. Hoffman, B. P. Kay, and J. P. Schiffer

Phys. Rev. C **89**, 061305(R)/1-5 (2014)

PHY-13613-TH-2013
Effective Field Theory for Proton Halo Nuclei
Emil Ryberg, Christian Forssén, H.-W. Hammer, and Lucas Platter
Phys. Rev. C **89**, 014325/1-6 (2014)

PHY-13610-TH-2013
Nucleon and Nucleon-Pair Momentum Distributions in $A \leq 12$ Nuclei
R. B. Wiringa, R. Schiavilla, Steven C. Pieper, and J. Carlson
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PHY-13664-HI-2013
Shape Coexistence in Neutron-Deficient Hg Isotopes Studied Via Lifetime Measurements in ^{184,186}Hg and Two-State Mixing Calculations
L. P. Gaffney, M. Hackstein, R. D. Page, T. Grahn, M. Scheck, P. A. Butler, P. F. Bertone, N. Bree, R. J. Carroll, M. P. Carpenter, C. J. Chiara, A. Dewald, F. Filmer, C. Fransen, M. Huyse, R. V. F. Janssens, D. T. Joss, R. Julin, F. G. Kondev, P. Nieminen, J. Pakarinen, S. V. Rigby, W. Rother, R. Van Duppen, H. V. Watkins, K. Wrzosek-Lipska, and S. Zhu
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PHY-13656-TH-2013
Neutral-Current Interactions of Low-Energy Neutrinos in Dense Neutron Matter
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PHY-13876-HI-2014
β Decay of ^{61,63}V and Low-Energy Level Schemes of ^{61,63}Cr
S. Suchyta, S. N. Liddick, C. J. Chiara, W. B. Walters, M. P. Carpenter, H. L. Crawford, G. F. Grinyer, G. Gurdal, A. Klose, E. A. McCutchan, J. Pereira, and S. Zhu
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PHY-13699-HI-2014
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PHY-13682-HI-2014
Level Structure of ^{31}S, from Low Excitation Energies to the Region of Interest for Hydrogen Burning in Novae through the $^{30}P(p,\gamma)^{31}$S Reaction
D. T. Doherty, P. J. Woods, G. Lotay, D. Seweryniak, M. P. Carpenter, C. J. Chiara, H. M. David, R. V. F. Janssens, L. Trache, and S. Zhu
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Quadrupole Collectivity in Island-of-Inversion Nuclei ^{28,30}Ne and ^{34,36}Mg
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H. Seraydaryan *et al.* (CLAS Collaboration)
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Beam-Spin Asymmetries from Semi-Inclusive Pion Electroproduction
W. Gohn *et al.* (CLAS Collaboration)
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Zero Mode in a Strongly Coupled Quark Gluon Plasma
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PHY-13679-ME-2014
Efficient Generation of Optical Sidebands at GHz with a High-Power Tapered Amplifier
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