



Isosurface plots of the Wannier function used in calculations of spectral properties on surfaces of inhomogeneous cuprate superconductors from first principles. [Andreas Kreisel *et al.*, Phys. Rev. Lett. **114**, 217002 (2015)]

NEWSPAPER

PHYSICAL REVIEW LETTERS™

Contents

Articles published 23 May–29 May 2015

VOLUME 114, NUMBER 21

29 May 2015

General Physics: Statistical and Quantum Mechanics, Quantum Information, etc.

Frozen Quantum Coherence	210401
Thomas R. Bromley, Marco Cianciaruso, and Gerardo Adesso	
Wigner Translations and the Observer Dependence of the Position of Massless Spinning Particles	210402
Michael Stone, Vatsal Dwivedi, and Tianci Zhou	
Highly Retrievable Spin-Wave–Photon Entanglement Source	210501
Sheng-Jun Yang, Xu-Jie Wang, Jun Li, Jun Rui, Xiao-Hui Bao, and Jian-Wei Pan	
Precision Metrology Using Weak Measurements	210801
Lijian Zhang, Animesh Datta, and Ian A. Walmsley	

Gravitation and Astrophysics

New Class of Consistent Scalar-Tensor Theories	211101
Jérôme Gleyzes, David Langlois, Federico Piazza, and Filippo Vernizzi	
Calculating the Annihilation Rate of Weakly Interacting Massive Particles	211301
Matthew Baumgart, Ira Z. Rothstein, and Varun Vaidya	
Heavy Dark Matter Annihilation from Effective Field Theory	211302
Grigory Ovanessian, Tracy R. Slatyer, and Iain W. Stewart	
Galactic Center Excess in γ Rays from Annihilation of Self-Interacting Dark Matter	211303
Manoj Kaplinghat, Tim Linden, and Hai-Bo Yu	

Elementary Particles and Fields

Search for the Dark Photon and the Dark Higgs Boson at Belle	211801
I. Jaegle <i>et al.</i> (Belle Collaboration)	
Higgs Boson Gluon-Fusion Production in QCD at Three Loops	212001
Charalampos Anastasiou, Claude Duhr, Falko Dulat, Franz Herzog, and Bernhard Mistlberger	

Nuclear Physics

Subthreshold Ξ^- Production in Collisions of $p(3.5 \text{ GeV}) + \text{Nb}$	212301
G. Agakishiev <i>et al.</i> (HADES collaboration)	
Constraint of the Astrophysical $^{26}\text{Al}(p, \gamma)^{27}\text{Si}$ Destruction Rate at Stellar Temperatures	212501
S. D. Pain, D. W. Bardayan, J. C. Blackmon, S. M. Brown, K. Y. Chae, K. A. Chipps, J. A. Cizewski, K. L. Jones, R. L. Kozub, J. F. Liang, C. Matei, M. Matos, B. H. Moazen, C. D. Nesaraja, J. Okołowicz, P. D. O'Malley, W. A. Peters, S. T. Pittman, M. Płoszajczak, K. T. Schmitt, J. F. Shriner, D. Shapira, M. S. Smith, D. W. Stracener, and G. L. Wilson	

(Continued Inside)

Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Copyright 2015 American Physical Society



0031-9007(20150529)114:21;1-Y

Contents (Continued)

Unified Description of ${}^6\text{Li}$ Structure and Deuterium- ${}^4\text{He}$ Dynamics with Chiral Two- and Three-Nucleon Forces	212502
Guillaume Hupin, Sofia Quaglioni, and Petr Navrátil	
Atomic, Molecular, and Optical Physics	
Laser Cooling of Molecular Anions	213001
Pauline Yzombard, Mehdi Hamamda, Sebastian Gerber, Michael Doser, and Daniel Comparat	
Site-Resolved Imaging of Fermionic ${}^6\text{Li}$ in an Optical Lattice	213002
Maxwell F. Parsons, Florian Huber, Anton Mazurenko, Christie S. Chiu, Widagdo Setiawan, Katherine Wooley-Brown, Sebastian Blatt, and Markus Greiner	
Thermal Light Cannot Be Represented as a Statistical Mixture of Single Pulses	213601
Aurélia Chenu, Agata M. Brańczyk, Gregory D. Scholes, and J. E. Sipe	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Predictability of Rogue Events	213901
Simon Birkholz, Carsten Brée, Ayhan Demircan, and Günter Steinmeyer	
When Linear Stability Does Not Exclude Nonlinear Instability	214101
P. G. Kevrekidis, D. E. Pelinovsky, and A. Saxena	
Observation of Orbital Angular Momentum Transfer from Bessel-Shaped Acoustic Vortices to Diphasic Liquid-Microparticle Mixtures	214301
ZhenYu Hong, Jie Zhang, and Bruce W. Drinkwater	
Particle Motion Induced by Bubble Cavitation	214501
Stéphane Poulain, Gabriel Guenoun, Sean Gart, William Crowe, and Sunghwan Jung	
Angular Statistics of Lagrangian Trajectories in Turbulence	214502
Wouter J. T. Bos, Benjamin Kadoch, and Kai Schneider	
Plasma and Beam Physics	
Scaling the Yield of Laser-Driven Electron-Positron Jets to Laboratory Astrophysical Applications	215001
Hui Chen, F. Fiuza, A. Link, A. Hazi, M. Hill, D. Hoarty, S. James, S. Kerr, D. D. Meyerhofer, J. Myatt, J. Park, Y. Sentoku, and G. J. Williams	
Measurement of Charged-Particle Stopping in Warm Dense Plasma	215002
A. B. Zylstra, J. A. Frenje, P. E. Grabowski, C. K. Li, G. W. Collins, P. Fitzsimmons, S. Glenzer, F. Graziani, S. B. Hansen, S. X. Hu, M. Gatu Johnson, P. Keiter, H. Reynolds, J. R. Rygg, F. H. Séguin, and R. D. Petrasso	
Precision Mapping of Laser-Driven Magnetic Fields and Their Evolution in High-Energy-Density Plasmas	215003
L. Gao, P. M. Nilson, I. V. Igumenshchev, M. G. Haines, D. H. Froula, R. Betti, and D. D. Meyerhofer	
Evidence for a Bubble-Competition Regime in Indirectly Driven Ablative Rayleigh-Taylor Instability Experiments on the NIF	215004
D. A. Martinez, V. A. Smalyuk, J. O. Kane, A. Casner, S. Liberatore, and L. P. Masse	
Condensed Matter: Structure, etc.	
Turbulent Fracture Surfaces: A Footprint of Damage Percolation?	215501
Stéphane Vernède, Laurent Ponson, and Jean-Philippe Bouchaud	
Surface Structure of $\text{V}_2\text{O}_3(0001)$ Revisited	216101
Felix E. Feiten, Jan Seifert, Joachim Paier, Helmut Kühlenbeck, Helmut Winter, Joachim Sauer, and Hans-Joachim Freund	
Carbon Dimers as the Dominant Feeding Species in Epitaxial Growth and Morphological Phase Transition of Graphene on Different Cu Substrates	216102
Ping Wu, Yue Zhang, Ping Cui, Zhenyu Li, Jinlong Yang, and Zhenyu Zhang	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007)

Condensed Matter: Electronic Properties, etc.		
☞ Reentrant Superconductivity Driven by Quantum Tricritical Fluctuations in URhGe: Evidence from ^{59}Co NMR in $\text{URh}_{0.9}\text{Co}_{0.1}\text{Ge}$	216401	Y. Tokunaga, D. Aoki, H. Mayaffre, S. Krämer, M.-H. Julien, C. Berthier, M. Horvatić, H. Sakai, S. Kambe, and S. Araki
Chiral Spin Density Wave Order on the Frustrated Honeycomb and Bilayer Triangle Lattice Hubbard Model at Half-Filling	216402	Kun Jiang, Yi Zhang, Sen Zhou, and Ziqiang Wang
Critical Slowing Down of the Charge Carrier Dynamics at the Mott Metal-Insulator Transition	216403	Benedikt Hartmann, David Zielke, Jana Polzin, Takahiko Sasaki, and Jens Müller
Observation of Anderson Localization in Ultrathin Films of Three-Dimensional Topological Insulators	216601	Jian Liao, Yunbo Ou, Xiao Feng, Shuo Yang, Chaojing Lin, Wenmin Yang, Kehui Wu, Ke He, Xucun Ma, Qi-Kun Xue, and Yongqing Li
Itinerant Ferromagnetism in the As $4p$ Conduction Band of $\text{Ba}_{0.6}\text{K}_{0.4}\text{Mn}_2\text{As}_2$ Identified by X-Ray Magnetic Circular Dichroism	217001	B. G. Ueland, Abhishek Pandey, Y. Lee, A. Sapkota, Y. Choi, D. Haskel, R. A. Rosenberg, J. C. Lang, B. N. Harmon, D. C. Johnston, A. Kreyssig, and A. I. Goldman
Interpretation of Scanning Tunneling Quasiparticle Interference and Impurity States in Cuprates	217002	A. Kreisel, Peayush Choubey, T. Berlijn, W. Ku, B. M. Andersen, and P. J. Hirschfeld
Collective Nature of Spin Excitations in Superconducting Cuprates Probed by Resonant Inelastic X-Ray Scattering	217003	M. Minola, G. Dellea, H. Gretarsson, Y. Y. Peng, Y. Lu, J. Porras, T. Loew, F. Yakhov, N. B. Brookes, Y. B. Huang, J. Pellicciari, T. Schmitt, G. Ghiringhelli, B. Keimer, L. Braicovich, and M. Le Tacon
Quantum Criticality of Hot Random Spin Chains	217201	R. Vasseur, A. C. Potter, and S. A. Parameswaran
Collective Transport Properties of Driven Skyrmions with Random Disorder	217202	C. Reichhardt, D. Ray, and C. J. Olson Reichhardt
Multivariable Scaling for the Anomalous Hall Effect	217203	Dazhi Hou, Gang Su, Yuan Tian, Xiaofeng Jin, Shengyuan A. Yang, and Qian Niu
Anisotropic Stark Effect and Electric-Field Noise Suppression for Phosphorus Donor Qubits in Silicon	217601	A. J. Sigillito, A. M. Tyryshkin, and S. A. Lyon
Magnetic Structure and Ordering of Multiferroic Hexagonal LuFeO_3	217602	Steven M. Disseler, Julie A. Borchers, Charles M. Brooks, Julia A. Mundy, Jarrett A. Moyer, Daniel A. Hillsberry, Eric L. Thies, Dmitri A. Tenne, John Heron, Megan E. Holtz, James D. Clarkson, Gregory M. Stiehl, Peter Schiffer, David A. Muller, Darrell G. Schlom, and William D. Ratcliff
Polymer, Soft Matter, Biological, and Interdisciplinary Physics		
☞ Silent Flocks: Constraints on Signal Propagation Across Biological Groups	218101	Andrea Cavagna, Irene Giardina, Tomas S. Grigera, Asja Jelic, Dov Levine, Sriram Ramaswamy, and Massimiliano Viale
Biological Magnetometry: Torque on Superparamagnetic Beads in Magnetic Fields	218301	Maarten M. van Oene, Laura E. Dickinson, Francesco Pedaci, Mariana Köber, David Dulin, Jan Lipfert, and Nynke H. Dekker
Errata		
Erratum: Dynamics of the Force Exchanged Between Membrane Inclusions [Phys. Rev. Lett. 112 , 128101 (2014)]	219901	Jean-Baptiste Fournier