



Top: Simulation of the surface of a 3D compressed soft solid layer with perfectly ordered I-shape (left) and Y-shape (right) sulcus or deformation patterns with alternating orientation. Bottom: Depth-averaged energy distributions of the I and Y patterns. [T. Tallinen, J. S. Biggins, and L. Mahadevan, *Phys. Rev. Lett.* **110**, 024302 (2013)]

PHYSICAL REVIEW LETTERS™

Contents

Articles published 5 January–11 January 2013

VOLUME 110, NUMBER 2

11 January 2013

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

Universal Impurity-Induced Bound State in Topological Superfluids	020401
Hui Hu, Lei Jiang, Han Pu, Yan Chen, and Xia-Ji Liu	
Fine-Grained Lower Limit of Entropic Uncertainty in the Presence of Quantum Memory	020402
T. Pramanik, P. Chowdhury, and A. S. Majumdar	
Universal Contact for a Tonks-Girardeau Gas at Finite Temperature	020403
Patrizia Vignolo and Anna Minguzzi	
Quantum Maximum Entropy Principle for Fractional Exclusion Statistics	020404
M. Trovato and L. Reggiani	
Clausius Inequality and Optimality of Quasistatic Transformations for Nonequilibrium Stationary States	020601
L. Bertini, D. Gabrielli, G. Jona-Lasinio, and C. Landim	
Aging Effects and Population Splitting in Single-Particle Trajectory Averages	020602
Johannes H. Schulz, Eli Barkai, and Ralf Metzler	
Finite-Time Effects and Ultraweak Ergodicity Breaking in Superdiffusive Dynamics	020603
Aljaž Godec and Ralf Metzler	
Size and Shape Dependence of Thermal Spin Transitions in Nanoislands	020604
Pavel F. Bessarab, Valery M. Uzdin, and Hannes Jónsson	

Gravitation and Astrophysics

Implications of the Penetration Depth of Ultrahigh-Energy Cosmic Rays on Physics at 100 TeV	021101
Nimrod Shaham and Tsvi Piran	
Do Stochastic Inhomogeneities Affect Dark-Energy Precision Measurements?	021301
I. Ben-Dayan, M. Gasperini, G. Marozzi, F. Nugier, and G. Veneziano	
Antilensing: The Bright Side of Voids	021302
Krzysztof Bolejko, Chris Clarkson, Roy Maartens, David Bacon, Nikolai Meures, and Emma Beynon	

Elementary Particles and Fields

Scalar Glueball in Radiative J/ψ Decay on the Lattice	021601
Long-Cheng Gui, Ying Chen, Gang Li, Chuan Liu, Yu-Bin Liu, Jian-Ping Ma, Yi-Bo Yang, and Jian-Bo Zhang (CLQCD Collaboration)	
First Evidence for the Decay $B_s^0 \rightarrow \mu^+ \mu^-$	021801
R. Aaij <i>et al.</i> (LHCb Collaboration)	
Fourth Generation Parity	021802
Hye-Sung Lee and Amarjit Soni	
Detecting Domain Walls of Axionlike Models Using Terrestrial Experiments	021803
M. Pospelov, S. Pustelny, M. P. Ledbetter, D. F. Kimball, W. Gawlik, and D. Budker	

(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).



Contents (Continued)

Observation of Two New N^* Resonances in the Decay $\psi(3686) \rightarrow p\bar{p}\pi^0$	022001
M. Ablikim <i>et al.</i> (BESIII Collaboration)	
Electromagnetic Structure of the Proton, Pion, and Kaon by High-Precision Form Factor Measurements at Large Timelike Momentum Transfers	022002
Kamal K. Seth, S. Dobbs, Z. Metreveli, A. Tomaradze, T. Xiao, and G. Bonvicini	
Evidence for Associated Production of a Single Top Quark and W Boson in pp Collisions at $\sqrt{s} = 7$ TeV	022003
S. Chatrchyan <i>et al.</i> (CMS Collaboration)	
Nuclear Physics	
Measurement of Z Boson Production in Pb-Pb Collisions at $\sqrt{s_{NN}} = 2.76$ TeV with the ATLAS Detector	022301
G. Aad <i>et al.</i> (ATLAS Collaboration)	
Neutron Capture Cross Section of Unstable ^{63}Ni : Implications for Stellar Nucleosynthesis	022501
C. Lederer <i>et al.</i> (n_TOF Collaboration)	
Three-Body Forces and Proton-Rich Nuclei	022502
J.D. Holt, J. Menéndez, and A. Schwenk	
Fine Structure of the Giant $M1$ Resonance in ^{90}Zr	022503
G. Rusev, N. Tsoneva, F. Dönau, S. Frauendorf, R. Schwengner, A.P. Tonchev, A.S. Adekola, S.L. Hammond, J.H. Kelley, E. Kwan, H. Lenske, W. Tornow, and A. Wagner	
Collective Structure in ^{94}Zr and Subshell Effects in Shape Coexistence	022504
A. Chakraborty, E.E. Peters, B.P. Crider, C. Andreoiu, P.C. Bender, D.S. Cross, G.A. Demand, A.B. Garnsworthy, P.E. Garrett, G. Hackman, B. Hadinia, S. Ketelhut, Ajay Kumar, K.G. Leach, M.T. McEllistrem, J. Pore, F.M. Prados-Estévez, E.T. Rand, B. Singh, E.R. Tardiff, Z.-M. Wang, J.L. Wood, and S.W. Yates	
<i>Ab Initio</i> Description of the Exotic Unbound ^7He Nucleus	022505
Simone Baroni, Petr Navrátil, and Sofia Quaglioni	
Atomic, Molecular, and Optical Physics	
Frustrated Tunnel Ionization of Noble Gas Dimers with Rydberg-Electron Shakeoff by Electron Charge Oscillation	023001
A. von Veltheim, B. Manschwetus, W. Quan, B. Borchers, G. Steinmeyer, H. Rottke, and W. Sandner	
Time-Dependent Electron Interactions in Double Rydberg Wave Packets	023002
X. Zhang, R.R. Jones, and F. Robicheaux	
Single Circularly Polarized Attosecond Pulse Generation by Intense Few Cycle Elliptically Polarized Laser Pulses and Terahertz Fields from Molecular Media	023003
Kai-Jun Yuan and André D. Bandrauk	
Channel- and Angle-Resolved Above Threshold Ionization in the Molecular Frame	023004
Jochen Mikosch, Andrey E. Boguslavskiy, Iain Wilkinson, Michael Spanner, Serguei Patchkovskii, and Albert Stolow	
Selective Bond Cleavage in Potassium Collisions with Pyrimidine Bases of DNA	023201
Diogo Almeida, Filipe Ferreira da Silva, Gustavo García, and Paulo Limão-Vieira	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Plasticity and Fracture in Drying Colloidal Films	024301
Lucas Goehring, William J. Clegg, and Alexander F. Routh	
Surface Sulci in Squeezed Soft Solids	024302
T. Tallinen, J.S. Biggins, and L. Mahadevan	
Plasma and Beam Physics	
Effect of Target Material on Fast-Electron Transport and Resistive Collimation	025001
S. Chawla, M.S. Wei, R. Mishra, K. U Akli, C.D. Chen, H.S. McLean, A. Morace, P.K. Patel, H. Sawada, Y. Sentoku, R.B. Stephens, and F.N. Beg	
Astrophysics of Magnetically Collimated Jets Generated from Laser-Produced Plasmas	025002
A. Ciardi, T. Vinci, J. Fuchs, B. Albertazzi, C. Riconda, H. Pépin, and O. Portugall	
Alignment and Scaling of Large-Scale Fluctuations in the Solar Wind	025003
R.T. Wicks, A. Mallet, T.S. Horbury, C.H. Chen, A.A. Schekochihin, and J.J. Mitchell	

(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).

Contents (Continued)

Ion Kinetic Scale in the Solar Wind Observed	025004
Jana Šafránková, Zdeněk Němeček, Lubomír Přech, and Georgy N. Zastenker	
Condensed Matter: Structure, etc.	
 Persistent Currents in Spinor Condensates	025301
Scott Beattie, Stuart Moulder, Richard J. Fletcher, and Zoran Hadzibabic	
 Driving Phase Slips in a Superfluid Atom Circuit with a Rotating Weak Link	025302
K.C. Wright, R.B. Blakestad, C.J. Lobb, W.D. Phillips, and G.K. Campbell	
Quench, Equilibration, and Subaging in Structural Glasses	025501
Mya Warren and Jörg Rottler	
Superfragile Glassy Dynamics of a One-Component System with Isotropic Potential: Competition of Diffusion and Frustration	025701
R.E. Ryltsev, N.M. Chtchelkatchev, and V.N. Ryzhov	
Direct Measurement of Room-Temperature Nondiffusive Thermal Transport Over Micron Distances in a Silicon Membrane	025901
Jeremy A. Johnson, A.A. Maznev, John Cuffe, Jeffrey K. Eliason, Austin J. Minnich, Timothy Kehoe, Clivia M. Sotomayor Torres, Gang Chen, and Keith A. Nelson	
Narrow Low-Frequency Spectrum and Heat Management by Thermocrystals	025902
Martin Maldovan	
Proton or Deuteron Transfer in Phase IV of Solid Hydrogen and Deuterium	025903
Hanyu Liu and Yanming Ma	
<i>Ab initio</i> Lattice Thermal Conductivity of MgSiO ₃ Perovskite as Found in Earth's Lower Mantle	025904
Haruhiko Dekura, Taku Tsuchiya, and Jun Tsuchiya	
Confined Active Nematic Flow in Cylindrical Capillaries	026001
Miha Ravnik and Julia M. Yeomans	
Nitridation of Al ₂ O ₃ Surfaces: Chemical and Structural Change Triggered by Oxygen Desorption	026101
Toru Akiyama, Yasutaka Saito, Kohji Nakamura, and Tomonori Ito	
Diffusion of Small Molecules in Metal Organic Framework Materials	026102
Pieremanuele Canepa, Nour Nijem, Yves J. Chabal, and T. Thonhauser	
Initial Electrospreading of Aqueous Electrolyte Drops	026103
Longquan Chen, Chunli Li, Nico F.A. van der Vegt, Günter K. Auernhammer, and Elmar Bonaccorso	
Condensed Matter: Electronic Properties, etc.	
Order-Disorder Oscillations in Exciton-Polariton Superfluids	026401
Hiroki Saito, Tomohiko Aioi, and Tsuyoshi Kadokura	
Charge Fractionalization in a Mesoscopic Ring	026402
Wade DeGottardi, Siddhartha Lal, and Smitha Vishveshwara	
Heavy Antiferromagnetic Phases in Kondo Lattices	026403
L. Isaev and I. Vekhter	
Coulomb Drag in Graphene Near the Dirac Point	026601
M. Schütt, P.M. Ostrovsky, M. Titov, I.V. Gornyi, B.N. Narozhny, and A.D. Mirlin	
NMR Probe of Metallic States in Nanoscale Topological Insulators	026602
Dimitrios Koumoulis, Thomas C. Chasapis, Robert E. Taylor, Michael P. Lake, Danny King, Nanette N. Jarenwattananon, Gregory A. Fiete, Mercouri G. Kanatzidis, and Louis-S. Bouchard	
Photoinduced Topological Phase Transition and a Single Dirac-Cone State in Silicene	026603
Motohiko Ezawa	
Resonant Inelastic Light Scattering Investigation of Low-Lying Gapped Excitations in the Quantum Fluid at $\nu = 5/2$	026801
U. Wurstbauer, K.W. West, L.N. Pfeiffer, and A. Pinczuk	
Inelastic Electron Tunneling Spectroscopy for Topological Insulators	026802
Jian-Huang She, Jonas Fransson, A.R. Bishop, and Alexander V. Balatsky	
Carrier-Density-Controlled Anisotropic Spin Susceptibility of Two-Dimensional Hole Systems	026803
T. Kernreiter, M. Governale, and U. Zülicke	

(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).

Scattering Theory of Nonlinear Thermoelectric Transport	026804
David Sánchez and Rosa López	
Monte Carlo Study of an Unconventional Superconducting Phase in Iridium Oxide $J_{\text{eff}} = 1/2$ Mott Insulators Induced by Carrier Doping	027002
Hiroshi Watanabe, Tomonori Shirakawa, and Seiji Yunoki	
Predicted Multiple Cores of a Magnetic Vortex Threading a Two-Dimensional Metal Proximity Coupled to a Superconductor	027003
N.B. Kopnin, I.M. Khaymovich, and A.S. Mel'nikov	
Emergent Superstructural Dynamic Order due to Competing Antiferroelectric and Antiferrodistortive Instabilities in Bulk EuTiO_3	027201
Jong-Woo Kim, Paul Thompson, Simon Brown, Peter S. Normile, John A. Schlueter, Andrey Shkabko, Anke Weidenkaff, and Philip J. Ryan	
Superexchange-Mediated Ferromagnetic Coupling in Two-Dimensional Ni-TCNQ Networks on Metal Surfaces	027202
N. Abdurakhmanova, T.-C. Tseng, A. Langner, C.S. Kley, V. Sessi, S. Stepanow, and K. Kern	
Measurement of the Ultrafast Spectral Diffusion of the Optical Transition of Nitrogen Vacancy Centers in Nano- Size Diamond Using Correlation Interferometry	027401
Janik Wolters, Nikola Sadzak, Andreas W. Schell, Tim Schröder, and Oliver Benson	
Coherent Spin Control by Electrical Manipulation of the Magnetic Anisotropy	027601
Richard E. George, James P. Edwards, and Arzhang Ardavan	
Soft Matter, Biological, and Interdisciplinary Physics	
☞ Confined Bilayers Passively Regulate Shape and Stress	028101
Margarita Staykova, Marino Arroyo, Mohammad Rahimi, and Howard A. Stone	
☞ Statistics of DNA Capture by a Solid-State Nanopore	028102
Mirna Mihovilovic, Nicholas Hagerty, and Derek Stein	
From Flexible to Stiff: Systematic Analysis of Structural Phases for Single Semiflexible Polymers	028103
Daniel T. Seaton, Stefan Schnabel, David P. Landau, and Michael Bachmann	
Elastic and Conformational Softness of a Globular Protein	028104
Liang Hong, Dennis C. Glass, Jonathan D. Nickels, Stefania Perticaroli, Zheng Yi, Tyagi Madhusudan, Hugh O'Neill, Qiu Zhang, Alexei P. Sokolov, and Jeremy C. Smith	
Renormalization Group Limit Cycle for Three-Stranded DNA	028105
Tanmoy Pal, Poulomi Sadhukhan, and Somendra M. Bhattacharjee	
☞ Full Alignment of Colloidal Objects by Programed Forcing	028301
Brian Moths and T.A. Witten	
Dynamic Arm Exchange Facilitates Crystallization and Jamming of Starlike Polymers by Spontaneous Fine-Tuning of the Number of Arms	028302
Fanny Puaud, Taco Nicolai, Erwan Nicol, Lazhar Benyahia, and Guillaume Brotons	
Self-Pinning by Colloids Confined at a Contact Line	028303
Byung Mook Weon and Jung Ho Je	
Diffusion Dynamics on Multiplex Networks	028701
S. Gómez, A. Díaz-Guilera, J. Gómez-Gardeñes, C.J. Pérez-Vicente, Y. Moreno, and A. Arenas	
Comments	
Comment on “Logarithmic Oscillators: Ideal Hamiltonian Thermostats”	028901
M. Meléndez, Wm.G. Hoover, and P. Español	
Campisi <i>et al.</i> Reply	028902
Michele Campisi, Fei Zhan, Peter Talkner, and Peter Hänggi	
Comment on “Structural and Electronic Properties of T Graphene: A Two-Dimensional Carbon Allotrope with Tetrarings”	029601
Bog G. Kim, Jun Young Jo, and H.S. Sim	
Liu <i>et al.</i> Reply	029602
Yu Liu, Gang Wang, Qingsong Huang, Liwei Guo, and Xiaolong Chen	

(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).

Contents (Continued)

Comment on “Structural and Electronic Properties of <i>T</i> Graphene: A Two-Dimensional Carbon Allotrope with Tetrarings”	029603
Huaqing Huang, Yuanchang Li, Zhirong Liu, Jian Wu, and Wenhui Duan	
Liu <i>et al.</i> Reply	029604
Yu Liu, Gang Wang, Qingsong Huang, Liwei Guo, and Xiaolong Chen	
 Errata	
Publisher’s Note: Electrical Control of the Exciton Fine Structure of a Quantum Dot Molecule [Phys. Rev. Lett. 110 , 016804 (2013)]	029901
N. Sköld, A. Boyer de la Giroday, A.J. Bennett, I. Farrer, D.A. Ritchie, and A.J. Shields	
Publisher’s Note: Granular Convection in Microgravity [Phys. Rev. Lett. 110 , 018307 (2013)]	029902
N. Murdoch, B. Rozitis, K. Nordstrom, S.F. Green, P. Michel, T.-L. de Lophem, and W. Losert	



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).

Physics
spotlighting exceptional research

The American Physical Society’s free online publication, *Physics* (<http://physics.aps.org/>), provides thought-provoking analysis and spotlights exceptional research.