



Simulations of various structures formed when an electric field is used to reconfigure a liquid crystal colloid composite. Selected for a Synopsis in *Physics* and an Editors' Suggestion. [G. D'Adamo, D. Marenduzzo, C. Micheletti, and E. Orlandini, *Phys. Rev. Lett.* **114**, 177801 (2015)]

NEWSPAPER

PHYSICAL REVIEW LETTERS™

Contents

Articles published 25 April–1 May 2015

VOLUME 114, NUMBER 17

1 May 2015

EDITORIALS AND ANNOUNCEMENTS

Editorial: Amplifying the Signal	170001
Pierre Meystre	

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

Two-Time Correlations Probing the Dynamics of Dissipative Many-Body Quantum Systems: Aging and Fast Relaxation	170401
Bruno Sciolia, Dario Poletti, and Corinna Kollath	
Quantum Brachistochrone Curves as Geodesics: Obtaining Accurate Minimum-Time Protocols for the Control of Quantum Systems	170501
Xiaoting Wang, Michele Allegra, Kurt Jacobs, Seth Lloyd, Cosmo Lupo, and Masoud Mohseni	
Quantum Random Access Codes Using Single d -Level Systems	170502
Armin Tavakoli, Alley Hameedi, Breno Marques, and Mohamed Bourennane	
Coherent Storage of Microwave Excitations in Rare-Earth Nuclear Spins	170503
Gary Wolfowicz, Hannes Maier-Flaig, Robert Marino, Alban Ferrier, Hervé Vezin, John J. L. Morton, and Philippe Goldner	
Revealing Genuine Optical-Path Entanglement	170504
F. Monteiro, V. Caprara Vivoli, T. Guerreiro, A. Martin, J.-D. Bancal, H. Zbinden, R. T. Thew, and N. Sangouard	
Many-Body Localization Implies that Eigenvectors are Matrix-Product States	170505
M. Friesdorf, A. H. Werner, W. Brown, V. B. Scholz, and J. Eisert	
Entropic Description of Gas Hydrate Ice-Liquid Equilibrium via Enhanced Sampling of Coexisting Phases	170601
Edyta Małolepsza, Jaegil Kim, and Tom Keyes	
Power-Recycled Weak-Value-Based Metrology	170801
Kevin Lyons, Justin Dressel, Andrew N. Jordan, John C. Howell, and Paul G. Kwiat	
Linear Optical Quantum Metrology with Single Photons: Exploiting Spontaneously Generated Entanglement to Beat the Shot-Noise Limit	170802
Keith R. Motes, Jonathan P. Olson, Evan J. Rabeaux, Jonathan P. Dowling, S. Jay Olson, and Peter P. Rohde	

Gravitation and Astrophysics

What is the Flavor of the Cosmic Neutrinos Seen by IceCube?	171101
A. Palladino, G. Pagliaroli, F. L. Villante, and F. Vissani	
Flavor Ratio of Astrophysical Neutrinos above 35 TeV in IceCube	171102
M. G. Aartsen <i>et al.</i> (IceCube Collaboration)	
Precision Measurement of the Proton Flux in Primary Cosmic Rays from Rigidity 1 GV to 1.8 TV with the Alpha Magnetic Spectrometer on the International Space Station	171103
M. Aguilar <i>et al.</i> (AMS Collaboration)	

(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(20150501)114:17;1-K

Spinodal Instabilities and Super-Planckian Excursions in Natural Inflation	171301
Andreas Albrecht, R. Holman, and Benoit J. Richard	
Elementary Particles and Fields	
Black Holes in Higher Derivative Gravity	171601
H. Lü, A. Perkins, C. N. Pope, and K. S. Stelle	
Search for Long-Lived Particles in e^+e^- Collisions	171801
J. P. Lees <i>et al.</i> (The BABAR Collaboration)	
Loophole in $K \rightarrow \pi\nu\bar{\nu}$ Search and New Weak Leptonic Forces	171802
Kaori Fuyuto, Wei-Shu Hou, and Masaya Kohda	
Atomic, Molecular, and Optical Physics	
Selective Production of Rydberg-Stark States of Positronium	173001
T. E. Wall, A. M. Alonso, B. S. Cooper, A. Deller, S. D. Hogan, and D. B. Cassidy	
Designing Frustrated Quantum Magnets with Laser-Dressed Rydberg Atoms	173002
Alexander W. Glaetzle, Marcello Dalmonte, Rejish Nath, Christian Gross, Immanuel Bloch, and Peter Zoller	
Two-Dimensional Attosecond Electron Wave-Packet Interferometry	173003
Xinhua Xie (谢新华)	
Frequency-Dependent Polarizability of Helium Including Relativistic Effects with Nuclear Recoil Terms	173004
Konrad Piszczatowski, Mariusz Puchalski, Jacek Komasa, Bogumił Jeziorski, and Krzysztof Szalewicz	
Time-Reversal-Symmetric Single-Photon Wave Packets for Free-Space Quantum Communication	173601
N. Trautmann, G. Alber, G. S. Agarwal, and G. Leuchs	
Quantum State Engineering with Circuit Electromechanical Three-Body Interactions	173602
Mehdi Abdi, Matthias Pernpeintner, Rudolf Gross, Hans Huebl, and Michael J. Hartmann	
Photon Sorting, Efficient Bell Measurements, and a Deterministic Controlled-Z Gate Using a Passive Two-Level Nonlinearity	173603
T. C. Ralph, I. Söllner, S. Mahmoodian, A. G. White, and P. Lodahl	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Generation of Intense High-Order Vortex Harmonics	173901
Xiaomei Zhang, Baifei Shen, Yin Shi, Xiaofeng Wang, Lingang Zhang, Wenpeng Wang, Jiancai Xu, Longqiong Yi, and Zhizhan Xu	
☞ Topological Properties of Linear Circuit Lattices	173902
Victor V. Albert, Leonid I. Glazman, and Liang Jiang	
Quantum Threshold for Optomechanical Self-Structuring in a Bose-Einstein Condensate	173903
G. R. M. Robb, E. Tesio, G.-L. Oppo, W. J. Firth, T. Ackemann, and R. Bonifacio	
Attenuation of the Dynamic Yield Point of Shocked Aluminum Using Elastodynamic Simulations of Dislocation Dynamics	174301
Beñat Gurrutxaga-Lerma, Daniel S. Balint, Daniele Dini, Daniel E. Eakins, and Adrian P. Sutton	
Liquid Ropes: A Geometrical Model for Thin Viscous Jet Instabilities	174501
P.-T. Brun, Basile Audoly, Neil M. Ribe, T. S. Eaves, and John R. Lister	
Entropic Lattice Boltzmann Method for Multiphase Flows	174502
A. Mazloomi M, S. S. Chikatamarla, and I. V. Karlin	
Plasma and Beam Physics	
First High-Convergence Cryogenic Implosion in a Near-Vacuum Hohlraum	175001
L. F. Berzak Hopkins <i>et al.</i>	
Intermittent Dissipation and Heating in 3D Kinetic Plasma Turbulence	175002
M. Wan, W. H. Matthaeus, V. Roytershteyn, H. Karimabadi, T. Parashar, P. Wu, and M. Shay	
Condensed Matter: Structure, etc.	
Crack Front Dynamics: The Interplay of Singular Geometry and Crack Instabilities	175501
Itamar Kolvin, Gil Cohen, and Jay Fineberg	

(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.	
Computation of the Correlated Metal-Insulator Transition in Vanadium Dioxide from First Principles	176401
Huihuo Zheng and Lucas K. Wagner	
Temperature-Induced Spontaneous Time-Reversal Symmetry Breaking on the Honeycomb Lattice	176402
Wei Liu and Alexander Punnoose	
 Quantum Oscillations, Thermoelectric Coefficients, and the Fermi Surface of Semimetallic WTe ₂	176601
Zengwei Zhu, Xiao Lin, Juan Liu, Benoît Fauqué, Qian Tao, Chongli Yang, Youguo Shi, and Kamran Behnia	
Probing Dirac Fermion Dynamics in Topological Insulator Bi ₂ Se ₃ Films with a Scanning Tunneling Microscope	176602
Can-Li Song, Lili Wang, Ke He, Shuai-Hua Ji, Xi Chen, Xu-Cun Ma, and Qi-Kun Xue	
Chiral Tunneling of Topological States: Towards the Efficient Generation of Spin Current Using Spin-Momentum Locking	176801
K. M. Masum Habib, Redwan N. Sajjad, and Avik W. Ghosh	
Electronic Properties of Molecules and Surfaces with a Self-Consistent Interatomic van der Waals Density Functional	176802
Nicola Ferri, Robert A. DiStasio, Alberto Ambrosetti, Roberto Car, and Alexandre Tkatchenko	
Subdecoherence Time Generation and Detection of Orbital Entanglement in Quantum Dots	176803
F. Brange, O. Malkoc, and P. Samuelsson	
Electron Spin Polarization by Isospin Ordering in Correlated Two-Layer Quantum Hall Systems	176804
L. Tiemann, W. Wegscheider, and M. Hauser	
Composite Fermions with a Warped Fermi Contour	176805
M. A. Mueed, D. Kamburov, Yang Liu, M. Shayegan, L. N. Pfeiffer, K. W. West, K. W. Baldwin, and R. Winkler	
Geometric Quantum Noise of Spin	176806
Alexander Shnirman, Yuval Gefen, Arijit Saha, Igor S. Burmistrov, Mikhail N. Kiselev, and Alexander Altland	
Tuning Localized Transverse Surface Plasmon Resonance in Electricity-Selected Single-Wall Carbon Nanotubes by Electrochemical Doping	176807
Toru Igarashi, Hideki Kawai, Kazuhiro Yanagi, Nguyen Thanh Cuong, Susumu Okada, and Thomas Pichler	
Random Flips of Electric Field in Microwave-Induced States with Spontaneously Broken Symmetry	176808
S. I. Dorozhkin, V. Umansky, L. N. Pfeiffer, K. W. West, K. Baldwin, K. von Klitzing, and J. H. Smet	
Electronic Properties of BaFe ₂ As ₂ upon Doping and Pressure: The Prominent Role of the As <i>p</i> Orbitals	177001
V. Balédent, F. Rullier-Albenque, D. Colson, J. M. Ablett, and J.-P. Rueff	
Constraining Quantum Critical Dynamics: (2 + 1)D Ising Model and Beyond	177201
William Witczak-Krempa	
Kondo Breakdown in Topological Kondo Insulators	177202
Victor Alexandrov, Piers Coleman, and Onur Erten	
 Field-Dependent Size and Shape of Single Magnetic Skyrmions	177203
 Niklas Romming, André Kubetzka, Christian Hanneken, Kirsten von Bergmann, and Roland Wiesendanger	
Distinct Trivial Phases Protected by a Point-Group Symmetry in Quantum Spin Chains	177204
Yohei Fuji, Frank Pollmann, and Masaki Oshikawa	
Thermally Mediated Mechanism to Enhance Magnetoelectric Coupling in Multiferroics	177205
C.-M. Chang, B. K. Mani, S. Lisenkov, and I. Ponomareva	
Shortcut to Adiabaticity in the Lipkin-Meshkov-Glick Model	177206
Steve Campbell, Gabriele De Chiara, Mauro Paternostro, G. Massimo Palma, and Rosario Fazio	
Visualizing the Mixed Bonding Properties of Liquid Boron with High-Resolution X-Ray Compton Scattering	177401
J. T. Okada, P. H.-L. Sit, Y. Watanabe, B. Barbiellini, T. Ishikawa, Y. J. Wang, M. Itou, Y. Sakurai, A. Bansil, R. Ishikawa, M. Hamaishi, P.-F. Paradis, K. Kimura, T. Ishikawa, and S. Nanao	
Polymer, Soft Matter, Biological, and Interdisciplinary Physics	
 Electric Field Controlled Columnar and Planar Patterning of Cholesteric Colloids	177801
G. D'Adamo, D. Marenduzzo, C. Micheletti, and E. Orlandini	
Fraction of Clogging Configurations Sampled by Granular Hopper Flow	178001
C. C. Thomas and D. J. Durian	

(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)

Granular Segregation Driven by Particle Interactions	178002
C. Lozano, I. Zuriguel, A. Garcimartín, and T. Mullin	
 Dynamics of a <i>Volvox</i> Embryo Turning Itself Inside Out	178101
Stephanie Höhn, Aurelia R. Honerkamp-Smith, Pierre A. Haas, Philipp Khuc Trong, and Raymond E. Goldstein	
Anomalous Diffusion in Fractal Globules	178102
M. V. Tamm, L. I. Nazarov, A. A. Gavrilov, and A. V. Chertovich	
Multistable Jittering in Oscillators with Pulsatile Delayed Feedback	178103
Vladimir Klinshov, Leonhard Lücken, Dmitry Shchapin, Vladimir Nekorkin, and Serhiy Yanchuk	
Generalized Minimal Principle for Rotor Filaments	178104
Hans Dierckx, Marcel Wellner, Olivier Bernus, and Henri Verschelde	
Errata	
Erratum: Completing the Picture for the Smallest Eigenvalue of Real Wishart Matrices	
[Phys. Rev. Lett. 113 , 250201 (2014)]	179901
G. Akemann, T. Guhr, M. Kieburg, R. Wegner, and T. Wirtz	



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.