



Top: Photographs of the initial moments of a collision between two clusters of solid CO_2 particles. A jamming front moves across the clusters after the collision. Bottom: Snapshots of a simulation of a collision between two 5000-particle elliptical clusters, showing a similar jamming front. Color indicates velocity; time increases left to right. Selected for an Editors' Suggestion. [J. C. Burton, P. Y. Lu, and S. R. Nagel, *Phys. Rev. Lett.* **111**, 188001 (2013)]

PHYSICAL REVIEW LETTERS™

Contents

Articles published 26 October–1 November 2013

VOLUME 111, NUMBER 18

1 November 2013

Editorials and Announcements

Editorial: Review Changes	180001
Pierre Meystre	

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

Generation of Massive Entanglement through an Adiabatic Quantum Phase Transition in a Spinor Condensate	180401
Z. Zhang and L.-M. Duan	
Geometry-Induced Casimir Suspension of Oblate Bodies in Fluids	180402
Alejandro W. Rodriguez, M.T. Reid, Francesco Intravaia, Alexander Woolf, Diego A. Dalvit, Federico Capasso, and Steven G. Johnson	
Matter-Wave Interferometry of a Levitated Thermal Nano-Oscillator Induced and Probed by a Spin	180403
M. Scala, M.S. Kim, G.W. Morley, P.F. Barker, and S. Bose	
Simple Hardy-Like Proof of Quantum Contextuality	180404
Adán Cabello, Piotr Badziąg, Marcelo Terra Cunha, and Mohamed Bourennane	
Experimental Recovery of a Qubit from Partial Collapse	180501
J.A. Sherman, M.J. Curtis, D.J. Szwer, D.T. Allcock, G. Imreh, D.M. Lucas, and A.M. Steane	
Gaussian Error Correction of Quantum States in a Correlated Noisy Channel	180502
Mikael Lassen, Adriano Berni, Lars S. Madsen, Radim Filip, and Ulrik L. Andersen	
Dynamically Disordered Quantum Walk as a Maximal Entanglement Generator	180503
Rafael Vieira, Edgard P. Amorim, and Gustavo Rigolin	
Experimental Bit Commitment Based on Quantum Communication and Special Relativity	180504
T. Lunghi, J. Kaniewski, F. Bussi�eres, R. Houlmann, M. Tomamichel, A. Kent, N. Gisin, S. Wehner, and H. Zbinden	
Optimally Designed Quantum Transport across Disordered Networks	180601
Mattia Walschaers, Jorge Fernandez-de-Cossio Diaz, Roberto Mulet, and Andreas Buchleitner	
Dynamical Steady States in Driven Quantum Systems	180602
T.M. Stace, A.C. Doherty, and D.J. Reilly	
Information Thermodynamics on Causal Networks	180603
Sosuke Ito and Takahiro Sagawa	
Nonadditive Entropies Yield Probability Distributions with Biases not Warranted by the Data	180604
Steve Press�, Kingshuk Ghosh, Julian Lee, and Ken A. Dill	

(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 2013 American Physical Society



Gravitation and Astrophysics

	Gamma-Ray-Burst Beaming and Gravitational-Wave Observations	181101
	Hsin-Yu Chen and Daniel E. Holz	
	Cosmic Evolution from Phase Transition of Three-Dimensional Flat Space	181301
	Arjun Bagchi, Stephane Detournay, Daniel Grumiller, and Joan Simón	
☞	New Limits on Primordial Black Hole Dark Matter from an Analysis of Kepler Source Microlensing Data	181302
	Kim Griest, Agnieszka M. Cieplak, and Matthew J. Lehner	

Elementary Particles and Fields

	From Full Stopping to Transparency in a Holographic Model of Heavy Ion Collisions	181601
	Jorge Casalderrey-Solana, Michal P. Heller, David Mateos, and Wilke van der Schee	
☞	η and η' Mixing from Lattice QCD	181602
	C. Michael, K. Ottnad, and C. Urbach (ETM Collaboration)	
	Observation of the Decay $B_c^+ \rightarrow B_s^0 \pi^+$	181801
	R. Aaij <i>et al.</i> (LHCb Collaboration)	
	Magnetic Susceptibility of Strongly Interacting Matter across the Deconfinement Transition	182001
	Claudio Bonati, Massimo D'Elia, Marco Mariti, Francesco Negro, and Francesco Sanfilippo	
	Measurement of the Differential Cross Section $d\sigma/d(\cos\theta_t)$ for Top-Quark Pair Production in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV	182002
	T. Aaltonen <i>et al.</i> (CDF Collaboration)	
	Bayesian Approach to Spectral Function Reconstruction for Euclidean Quantum Field Theories	182003
	Yannis Burnier and Alexander Rothkopf	

Nuclear Physics

	Decisive Test of Color Coherence in Proton-Nucleus Collisions at the LHC	182301
	Adam Bzdak and Vladimir Skokov	

Atomic, Molecular, and Optical Physics

☞	Scattering-Free Optical Levitation of a Cavity Mirror	183001
	G. Guccione, M. Hosseini, S. Adlong, M.T. Johnsson, J. Hope, B.C. Buchler, and P.K. Lam	
	Luminescence of Oxygen Atoms Stimulated by Metastable Helium at Cryogenic Temperatures	183002
	V.V. Khmelenko, S. Mao, A. Meraki, S.C. Wilde, P. McColgan, A.A. Pelmenev, R.E. Boltnev, and D.M. Lee	
	Dipolar Confinement-Induced Resonances of Ultracold Gases in Waveguides	183201
	P. Giannakeas, V.S. Melezhik, and P. Schmelcher	
	Origin of Collision-Induced Molecular Orientation	183202
	M. Brouard, B. Hornung, and F.J. Aoiz	
☞	Experimental Evidence of Twin Fast Metastable $H(2^2S)$ Atoms from Dissociation of Cold H_2 Induced by Electrons	183203
	J. Robert, F. Zappa, C.R. de Carvalho, Ginette Jalbert, R.F. Nascimento, A. Trimeche, O. Dulieu, Aline Medina, Carla Carvalho, and N.V. Faria	
	Noncompeting Channel Approach to Pair Creation in Supercritical Fields	183204
	Q.Z. Lv, Y. Liu, Y.J. Li, R. Grobe, and Q. Su	
	Adaptive Quantum State Tomography Improves Accuracy Quadratically	183601
	D.H. Mahler, Lee A. Rozema, Ardavan Darabi, Christopher Ferrie, Robin Blume-Kohout, and A.M. Steinberg	
	Spectral Engineering of Slow Light, Cavity Line Narrowing, and Pulse Compression	183602
	Mahmood Sabooni, Qian Li, Lars Rippe, R. Krishna Mohan, and Stefan Kröll	

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

	Multimode Plasmon Excitation and <i>In Situ</i> Analysis in Top-Down Fabricated Nanocircuits	183901
	Peter Geisler, Gary Razinskas, Enno Krauss, Xiao-Fei Wu, Christian Rewitz, Philip Tuchscherer, Sebastian Goetz, Chen-Bin Huang, Tobias Brixner, and Bert Hecht	
	Experimental Observation of a Fundamental Length Scale of Waves in Random Media	183902
	S. Barkhofen, J.J. Metzger, R. Fleischmann, U. Kuhl, and H.-J. Stöckmann	

(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)

Molecular Dynamics Simulation of the Motion of Colloidal Nanoparticles in a Solute Concentration Gradient and a Comparison to the Continuum Limit	184501
Nima Sharifi-Mood, Joel Koplik, and Charles Maldarelli	
Transition of Planar Couette Flow at Infinite Reynolds Numbers	184502
Tomoaki Itano, Takeshi Akinaga, Sotos C. Generalis, and Masako Sugihara-Seki	
Nanobubble Collapse on a Silica Surface in Water: Billion-Atom Reactive Molecular Dynamics Simulations	184503
Adarsh Shekhar, Ken-ichi Nomura, Rajiv K. Kalia, Aiichiro Nakano, and Priya Vashishta	
Plasma and Beam Physics	
Coherent-Radiation Spectroscopy of Few-Femtosecond Electron Bunches Using a Middle-Infrared Prism Spectrometer	184801
T.J. Maxwell, C. Behrens, Y. Ding, A.S. Fisher, J. Frisch, Z. Huang, and H. Loos	
Pressurized H ₂ rf Cavities in Ionizing Beams and Magnetic Fields	184802
M. Chung, M.G. Collura, G. Flanagan, B. Freemire, P.M. Hanlet, M.R. Jana, R.P. Johnson, D.M. Kaplan, M. Leonova, A. Moretti, M. Popovic, T. Schwarz, A. Tollestrup, Y. Torun, and K. Yonehara	
Evidence of Resonant Surface-Wave Excitation in the Relativistic Regime through Measurements of Proton Acceleration from Grating Targets	185001
T. Ceccotti, V. Floquet, A. Sgattoni, A. Bigongiari, O. Klimo, M. Raynaud, C. Riconda, A. Heron, F. Baffigi, L. Labate, L.A. Gizzi, L. Vassura, J. Fuchs, M. Passoni, M. Květon, F. Novotny, M. Possolt, J. Prokūpek, J. Proška, J. Pšikal, L. Štolcová, A. Velyhan, M. Bougeard, P. D'Oliveira, O. Tcherbakoff, F. Réau, P. Martin, and A. Macchi	
Focusing of an Explosive Plasma Expansion in a Transverse Magnetic Field	185002
C. Plechaty, R. Presura, and A.A. Esaulov	
Dynamic Circulation in a Complex Plasma	185003
Yoshifumi Saitou and Osamu Ishihara	
Condensed Matter: Structure, etc.	
Realization of the Hofstadter Hamiltonian with Ultracold Atoms in Optical Lattices	185301
M. Aidelsburger, M. Atala, M. Lohse, J.T. Barreiro, B. Paredes, and I. Bloch	
Realizing the Harper Hamiltonian with Laser-Assisted Tunneling in Optical Lattices	185302
Hirokazu Miyake, Georgios A. Siviloglou, Colin J. Kennedy, William Cody Burton, and Wolfgang Ketterle	
Meron Ground State of Rashba Spin-Orbit-Coupled Dipolar Bosons	185303
Ryan M. Wilson, Brandon M. Anderson, and Charles W. Clark	
Quantum Quasicrystals of Spin-Orbit-Coupled Dipolar Bosons	185304
Sarang Gopalakrishnan, Ivar Martin, and Eugene A. Demler	
Nonequilibrium Quantum Magnetism in a Dipolar Lattice Gas	185305
A. de Paz, A. Sharma, A. Chotia, E. Maréchal, J.H. Huckans, P. Pedri, L. Santos, O. Gorceix, L. Vernac, and B. Laburthe-Tolra	
From Classical to Quantum Glasses with Ultracold Polar Molecules	185306
Wolfgang Lechner and Peter Zoller	
Artificial Graphene with Tunable Interactions	185307
Thomas Uehlinger, Gregor Jotzu, Michael Messer, Daniel Greif, Walter Hofstetter, Ulf Bissbort, and Tilman Esslinger	
Measurement of Elastic Waves Induced by the Reflection of Light	185501
Tomaž Požar and Janez Možina	
Coexistence of Scale-Invariant States in Incompressible Elastomers	185701
Evan Hohlfield	
Translational and Rotational Diffusion in Water in the Gigapascal Range	185901
L.E. Bove, S. Klotz, Th. Strässle, M. Koza, J. Teixeira, and A.M. Saitta	
Cooperative Assembly of Magic Number C ₆₀ -Au Complexes	186101
Yang-Chun Xie, Lin Tang, and Quanmin Guo	
Rotation of a Single Acetylene Molecule on Cu(001) by Tunneling Electrons in STM	186102
Yulia E. Shchadilova, Sergei G. Tikhodeev, Magnus Paulsson, and Hiromu Ueba	

(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)

Interacting Living Polymers Confined between Two Surfaces	186103
Nicolaas A. Besseling and Alexander V. Korobko	
Condensed Matter: Electronic Properties, etc.	
Magnetic-Field-Tuned Aharonov-Bohm Oscillations and Evidence for Non-Abelian Anyons at $\nu = 5/2$	186401
R.L. Willett, C. Nayak, K. Shtengel, L.N. Pfeiffer, and K.W. West	
Proposal for a Phonon Laser Utilizing Quantum-Dot Spin States	186601
A. Khaetskii, V.N. Golovach, X. Hu, and I. Žutić	
Ultrahigh Bandwidth Spin Noise Spectroscopy: Detection of Large g -Factor Fluctuations in Highly- n -Doped GaAs	186602
Fabian Berski, Hendrik Kuhn, Jan G. Lonnemann, Jens Hübner, and Michael Oestreich	
Diffusion-Limited Current in Organic Metal-Insulator-Metal Diodes	186801
P. de Bruyn, A.H. van Rest, G.A. Wetzelaer, D.M. de Leeuw, and P.W. Blom	
Quantum Theory of Magnetoelectromotive Instability in Nanoelectromechanical Systems with Positive Differential Conductance	186802
D. Radić and L.Y. Gorelik	
Topological Insulators with SU(2) Landau Levels	186803
Yi Li, Shou-Cheng Zhang, and Congjun Wu	
Tunable Band Topology Reflected by Fractional Quantum Hall States in Two-Dimensional Lattices	186804
Dong Wang, Zhao Liu, Junpeng Cao, and Heng Fan	
Topological Superconductivity and Majorana Fermions in RKKY Systems	186805
Jelena Klinovaja, Peter Stano, Ali Yazdani, and Daniel Loss	
Doping-Dependent Photon Scattering Resonance in the Model High-Temperature Superconductor $\text{HgBa}_2\text{CuO}_{4+\delta}$ Revealed by Raman Scattering and Optical Ellipsometry	187001
Yuan Li, M. Le Tacon, Y. Matiks, A.V. Boris, T. Loew, C.T. Lin, Lu Chen, M.K. Chan, C. Dorow, L. Ji, N. Barišić, X. Zhao, M. Greven, and B. Keimer	
Proposed Measurement of Spatial Correlations at the Berezinski-Kosterlitz-Thouless Transition of Superconducting Thin Films	187002
Amir Erez and Yigal Meir	
Absence of Static Loop-Current Magnetism at the Apical Oxygen Site in $\text{HgBa}_2\text{CuO}_{4+\delta}$ from NMR	187003
A.M. Mounce, Sangwon Oh, Jeongseop A. Lee, W.P. Halperin, A.P. Reyes, P.L. Kuhns, M.K. Chan, C. Dorow, L. Ji, D. Xia, X. Zhao, and M. Greven	
Transverse Spin Seebeck Effect versus Anomalous and Planar Nernst Effects in Permalloy Thin Films	187201
M. Schmid, S. Srichandan, D. Meier, T. Kuschel, J.-M. Schmalhorst, M. Vogel, G. Reiss, C. Strunk, and C.H. Back	
Spin- $\frac{1}{2}$ XXZ Chain System Cs_2CoCl_4 in a Transverse Magnetic Field	187202
O. Breunig, M. Garst, E. Sela, B. Buldmann, P. Becker, L. Bohatý, R. Müller, and T. Lorenz	
Magnetic Dephasing in Mesoscopic Spin Glasses	187203
Thibaut Capron, Guillaume Forestier, Angela Perrat-Mabilon, Christophe Peaucelle, Tristan Meunier, Christopher Bäuerle, Laurent P. Lévy, David Carpentier, and Laurent Saminadayer	
Electric Control of Exchange Bias Training	187204
W. Echtenkamp and Ch. Binek	
Striped Spin Liquid Crystal Ground State Instability of Kagome Antiferromagnets	187205
Bryan K. Clark, Jesse M. Kinder, Eric Neuscamman, Garnet Kin-Lic Chan, and Michael J. Lawler	
Explosive Electromagnetic Radiation by the Relaxation of a Multimode Magnon System	187206
V.I. Vasyuchka, A.A. Serga, C.W. Sandweg, D.V. Slobodianiuk, G.A. Melkov, and B. Hillebrands	
Optically Induced Coupling of Two Magnetic Dopant Spins by a Photoexcited Hole in a Mn-Doped InAs/GaAs Quantum Dot	187401
O. Krebs and A. Lemaître	
Ultrawideband Dispersion Control of a Metamaterial Surface for Perfectly-Matched-Layer-Like Absorption	187402
Dexin Ye, Zhiyu Wang, Kuiwen Xu, Huan Li, Jiangtao Huangfu, Zheng Wang, and Lixin Ran	
Persistent Photoconductivity in Strontium Titanate	187403
Marianne C. Tarun, Farida A. Selim, and Matthew D. McCluskey	

(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).

Soft Matter, Biological, and Interdisciplinary Physics

Measurement of a Photoinduced Transition from a Nonordered Phase to a Transient Ordered Phase in the Organic Quantum-Paraelectric Compound dimethyltetrathiafulvalene-dibromodichloro- <i>p</i> -benzoquinone Using Femtosecond Laser Irradiation	187801
Tatsuya Miyamoto, Kazuki Kimura, Takanori Hamamoto, Hirotaka Uemura, Hiroyuki Yada, Hiroyuki Matsuzaki, Sachio Horiuchi, and Hiroshi Okamoto	
Energy Loss at Propagating Jamming Fronts in Granular Gas Clusters	188001
Justin C. Burton, Peter Y. Lu, and Sidney R. Nagel	
Patchy Particle Model for Vitrimers	188002
Frank Smallenburg, Ludwik Leibler, and Francesco Sciortino	
Fluid Mixing by Curved Trajectories of Microswimmers	188101
Dmitri O. Pushkin and Julia M. Yeomans	
Geometrical Optics of Dense Aerosols: Forming Dense Plasma Slabs	188301
Michael J. Hay, Ernest J. Valeo, and Nathaniel J. Fisch	
Origin of Overstretching Transitions in Single-Stranded Nucleic Acids	188302
Zackary N. Scholl, Mahir Rabbi, David Lee, Laura Manson, Hanna S-Gracz, and Piotr E. Marszalek	
Temporal Networks: Slowing Down Diffusion by Long Lasting Interactions	188701
Naoki Masuda, Konstantin Klemm, and Víctor M. Eguíluz	
Comments	
Comment on “Quantum Szilard Engine”	188901
Martin Plesch, Oscar Dahlsten, John Goold, and Vlatko Vedral	
Kim <i>et al.</i> Reply	188902
Sang Wook Kim, Kang-Hwan Kim, Takahiro Sagawa, Simone De Liberato, and Masahito Ueda	
Comment on “Friction Between a Viscoelastic Body and a Rigid Surface with Random Self-Affine Roughness” ...	189401
I. A. Lyashenko, L. Pastewka, and B.N. Persson	
Li <i>et al.</i> Reply	189402
Q. Li, M. Popov, A. Dimaki, A.E. Filippov, S. Kürschner, V.L. Popov, and R. Pohrt	
Comment on “Percolation Transitions Are Not Always Sharpened by Making Networks Interdependent”	189601
Y. Berezin, A. Bashan, and S. Havlin	
Son, Grassberger, and Paczuski Reply	189602
Seung-Woo Son, Peter Grassberger, and Maya Paczuski	



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.