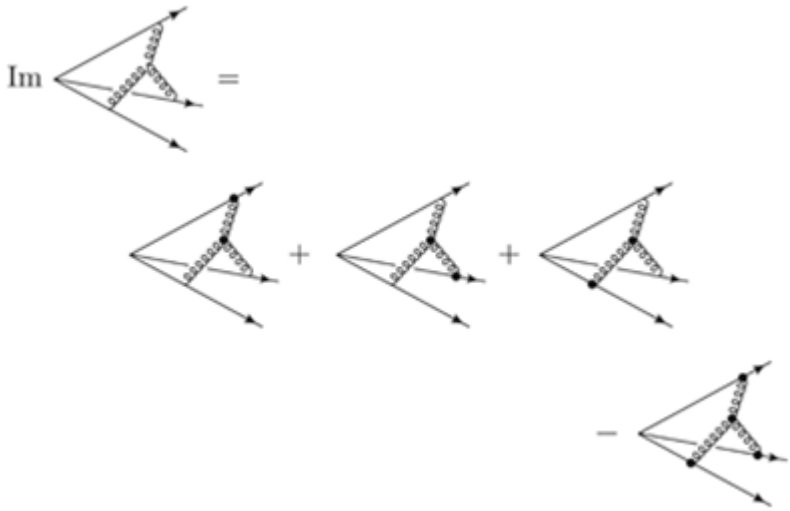
PHYSICAL REVIEW LETTERS
Volume 114, Issue 18, 8 May 2015



HIGHLIGHTED ARTICLES

Featured in Physics **Editors' Suggestion**

Demonstration of a Memory for Tightly Guided Light in an Optical Nanofiber

B. Gouraud, D. Maxein, A. Nicolas, O. Morin, and J. Laurat

Phys. Rev. Lett. **114**, 180503 (2015) – Published 7 May 2015

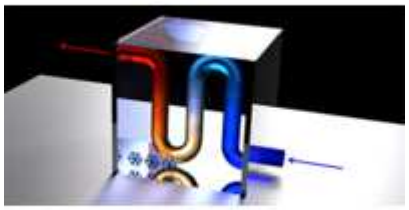
Light signals propagating down an ultrathin fiber can be temporarily stored in a cloud of cold atoms surrounding the fiber.

Featured in Physics **Editors' Suggestion**

Exciton-Polariton Gas as a Nonequilibrium Coolant

Sebastian Klembt, Emilien Durupt, Sanjoy Datta, Thorsten Klein, Augustin Baas, Yoan Léger, Carsten Kruse, Detlef Hommel, Anna Minguzzi, and Maxime Richard

Phys. Rev. Lett. **114**, 186403 (2015) – Published 5 May 2015



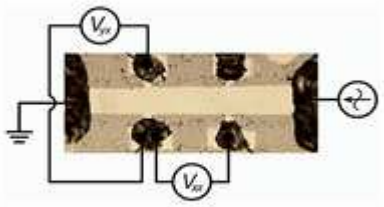
A gas of polaritons can serve as a coolant fluid that transports heat away from a semiconductor microcavity.

Featured in Physics **Editors' Suggestion**

Precise Quantization of the Anomalous Hall Effect near Zero Magnetic Field

A. J. Bestwick, E. J. Fox, Xufeng Kou, Lei Pan, Kang L. Wang, and D. Goldhaber-Gordon

Phys. Rev. Lett. **114**, 187201 (2015) – Published 4 May 2015



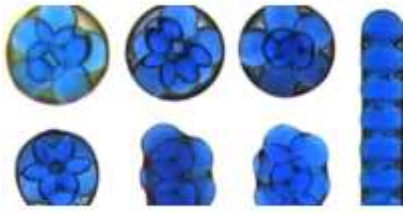
Thin films of magnetic topological insulators can exhibit a nearly ideal quantum Hall effect without requiring an applied magnetic field.

Featured in Physics **Editors' Suggestion**

Droplet Clusters: Exploring the Phase Space of Soft Mesoscale Atoms

Jan Guzowski and Piotr Garstecki

Phys. Rev. Lett. **114**, 188302 (2015) – Published 6 May 2015



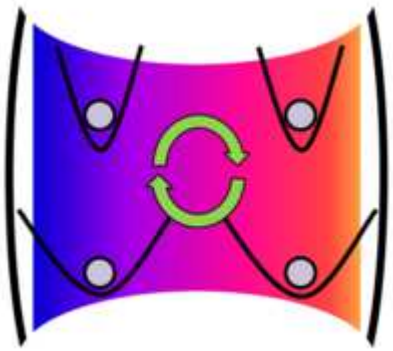
Water droplets can self-assemble into a range of structures inside larger drops of oil, with potential uses in targeted drug delivery and biological tissue engineering.

Editors' Suggestion

All-Optical Nanomechanical Heat Engine

Andreas Dechant, Nikolai Kiesel, and Eric Lutz

Phys. Rev. Lett. **114**, 183602 (2015) – Published 6 May 2015



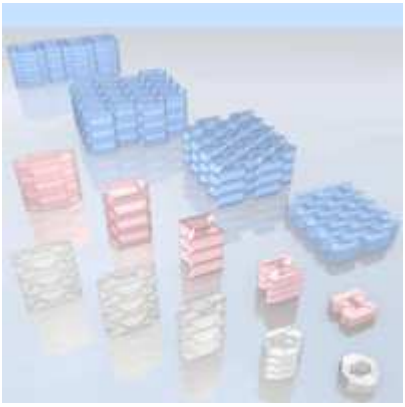
A nanoparticle levitated in an optical cavity is proposed as a Stirling type heat engine – where the particle is driven through a cooling-heating sequence that changes the mechanical oscillations of the systems and generates heat.

Editors' Suggestion

Reentrant Origami-Based Metamaterials with Negative Poisson's Ratio and Bistability

H. Yasuda and J. Yang

Phys. Rev. Lett. **114**, 185502 (2015) – Published 5 May 2015



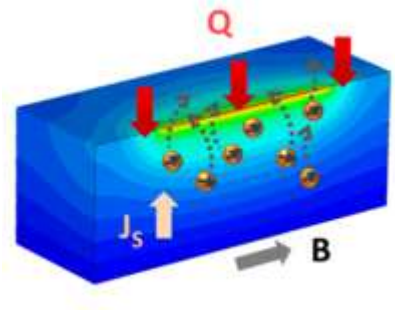
Structures made solely from folded rigid planes exhibit both tunable negative Poisson’s ratio and structural bistability allowing for the construction of new types of mechanical metamaterials.

Editors' Suggestion

Paramagnetic Spin Seebeck Effect

Stephen M. Wu, John E. Pearson, and Anand Bhattacharya

Phys. Rev. Lett. **114**, 186602 (2015) – Published 5 May 2015



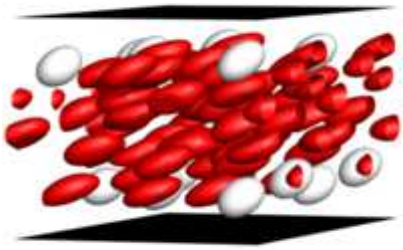
A spin current is experimentally generated in various insulating paramagnets using thermal gradients, a surprising result as, unlike ferromagnetic insulators, paramagnets do not hold their magnetization when the applied field is removed.

Editors' Suggestion

Margination Regimes and Drainage Transition in Confined Multicomponent Suspensions

Rafael G. Henríquez Rivera, Kushal Sinha, and Michael D. Graham

Phys. Rev. Lett. **114**, 188101 (2015) – Published 4 May 2015



During blood flow, white blood cells and platelets segregate near vessel walls, a phenomenon known as margination. A new kinetic theory allows the different segregation regimes to be defined, showing that, under certain conditions, the concentration of cells at the walls goes to zero.

LETTERS

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

Genuine Multipartite Entanglement without Multipartite Correlations

Christian Schwemmer, Lukas Knips, Minh Cong Tran, Anna de Rosier, Wiesław Laskowski, Tomasz Paterek, and Harald Weinfurter
Phys. Rev. Lett. **114**, 180501 (2015) – Published 6 May 2015

Experimental Passive Round-Robin Differential Phase-Shift Quantum Key Distribution

Jian-Yu Guan, Zhu Cao, Yang Liu, Guo-Liang Shen-Tu, Jason S. Pelc, M. M. Fejer, Cheng-Zhi Peng, Xiongfeng Ma, Qiang Zhang, and Jian-Wei Pan
Phys. Rev. Lett. **114**, 180502 (2015) – Published 6 May 2015

Featured in Physics **Editors' Suggestion**

Demonstration of a Memory for Tightly Guided Light in an Optical Nanofiber
B. Gouraud, D. Maxein, A. Nicolas, O. Morin, and J. Laurat
Phys. Rev. Lett. **114**, 180503 (2015) – Published 7 May 2015

Elementary Particles and Fields

Geometrically Induced Magnetic Catalysis and Critical Dimensions
Antonino Flachi, Kenji Fukushima, and Vincenzo Vitagliano
Phys. Rev. Lett. **114**, 181601 (2015) – Published 4 May 2015

Imaginary Parts and Discontinuities of Wilson Line Correlators
Eric Laenen, Kasper J. Larsen, and Robbert Rietkerk
Phys. Rev. Lett. **114**, 181602 (2015) – Published 4 May 2015

Yang-Mills as Massive Chern-Simons Theory: A Third Way to Three-Dimensional Gauge Theories
Alex S. Arvanitakis, Alexander Sevrin, and Paul K. Townsend
Phys. Rev. Lett. **114**, 181603 (2015) – Published 7 May 2015

Nuclear Physics

Thermalization of Gluons with Bose-Einstein Condensation
Zhe Xu, Kai Zhou, Pengfei Zhuang, and Carsten Greiner
Phys. Rev. Lett. **114**, 182301 (2015) – Published 7 May 2015

Atomic, Molecular, and Optical Physics

Mercury Monohalides: Suitability for Electron Electric Dipole Moment Searches

V. S. Prasannaa, A. C. Vutha, M. Abe, and B. P. Das

Phys. Rev. Lett. **114**, 183001 (2015) – Published 4 May 2015

Time-Resolved Spectroscopy in Time-Dependent Density Functional Theory: An Exact Condition
Johanna I. Fuks, Kai Luo, Ernesto D. Sandoval, and Neepa T. Maitra
Phys. Rev. Lett. **114**, 183002 (2015) – Published 5 May 2015

Antihydrogen Formation via Antiproton Scattering with Excited Positronium

A. S. Kadyrov, C. M. Rawlins, A. T. Stelbovics, I. Bray, and M. Charlton

Phys. Rev. Lett. **114**, 183201 (2015) – Published 8 May 2015

Ancillary Qubit Spectroscopy of Vacua in Cavity and Circuit Quantum Electrodynamics
Jared Lolli, Alexandre Baksic, David Nagy, Vladimir E. Manucharyan, and Cristiano Ciuti
Phys. Rev. Lett. **114**, 183601 (2015) – Published 6 May 2015

Editors' Suggestion

All-Optical Nanomechanical Heat Engine
Andreas Dechant, Nikolai Kiesel, and Eric Lutz
Phys. Rev. Lett. **114**, 183602 (2015) – Published 6 May 2015

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Boosting Terahertz Generation in Laser-Field Ionized Gases Using a Sawtooth Wave Shape
P. González de Alaiza Martínez, I. Babushkin, L. Bergé, S. Skupin, E. Cabrera-Granado, C. Köhler, U. Morgner, A. Husakou, and J. Herrmann
Phys. Rev. Lett. **114**, 183901 (2015) – Published 6 May 2015

Enhancement of Second-Order Nonlinear-Optical Signals by Optical Stimulation

A. J. Goodman and W. A. Tisdale
Phys. Rev. Lett. **114**, 183902 (2015) – Published 6 May 2015

Exponentially Tempered Lévy Sums in Random Lasers
Ravitej Uppu and Sushil Mujumdar
Phys. Rev. Lett. **114**, 183903 (2015) – Published 5 May 2015

Plasma and Beam Physics

Synergistic Laser-Wakefield and Direct-Laser Acceleration in the Plasma-Bubble Regime
Xi Zhang, Vladimir N. Khudik, and Gennady Shvets
Phys. Rev. Lett. **114**, 184801 (2015) – Published 6 May 2015

Sixth-Order Resonance of High-Intensity Linear Accelerators
Dong-O Jeon, Kyung Ryun Hwang, Ji-Ho Jang, Hyunchang Jin, and Hyojae Jang
Phys. Rev. Lett. **114**, 184802 (2015) – Published 6 May 2015

Modulated Electron Cyclotron Drift Instability in a High-Power Pulsed Magnetron Discharge
Sedina Tsikata and Tiberiu Minea
Phys. Rev. Lett. **114**, 185001 (2015) – Published 8 May 2015

Condensed Matter: Structure, etc.

Compton-Like Polariton Scattering in Hyperbolic Metamaterials
Ivan V. Iorsh, Alexander N. Poddubny, Pavel Ginzburg, Pavel A. Belov, and Yuri S. Kivshar
Phys. Rev. Lett. **114**, 185501 (2015) – Published 4 May 2015
Editors' Suggestion

Reentrant Origami-Based Metamaterials with Negative Poisson's Ratio and Bistability
H. Yasuda and J. Yang
Phys. Rev. Lett. **114**, 185502 (2015) – Published 5 May 2015

First-Order Character and Observable Signatures of Topological Quantum Phase Transitions
A. Amaricci, J. C. Budich, M. Capone, B. Trauzettel, and G. Sangiovanni
Phys. Rev. Lett. **114**, 185701 (2015) – Published 8 May 2015

Condensed Matter: Electronic Properties, etc.

Magneto-Optics of Massive Dirac Fermions in Bulk Bi_2Se_3
M. Orlita, B. A. Piot, G. Martinez, N. K. Sampath Kumar, C. Faugeras, M. Potemski, C. Michel, E. M. Hankiewicz, T. Brauner, Č. Drašar, S. Schreyeck, S. Grauer, K. Brunner, C. Gould, C. Brüne, and L. W. Molenkamp
Phys. Rev. Lett. **114**, 186401 (2015) – Published 6 May 2015
Featured in Physics **Editors' Suggestion**

Exciton-Polariton Gas as a Nonequilibrium Coolant
Sebastian Klembt, Emilien Durupt, Sanjoy Datta, Thorsten Klein, Augustin Baas, Yoan Léger, Carsten Kruse, Detlef Hommel, Anna Minguzzi, and Maxime Richard
Phys. Rev. Lett. **114**, 186403 (2015) – Published 5 May 2015

Fluctuation Theorem for a Small Engine and Magnetization Switching by Spin Torque
Yasuhiro Utsumi and Tomohiro Taniguchi
Phys. Rev. Lett. **114**, 186601 (2015) – Published 4 May 2015
Editors' Suggestion

Paramagnetic Spin Seebeck Effect
Stephen M. Wu, John E. Pearson, and Anand Bhattacharya
Phys. Rev. Lett. **114**, 186602 (2015) – Published 5 May 2015

Correlation Lengths and Topological Entanglement Entropies of Unitary and Nonunitary Fractional Quantum Hall Wave Functions

B. Estienne, N. Regnault, and B. A. Bernevig
Phys. Rev. Lett. **114**, 186801 (2015) – Published 8 May 2015
Featured in Physics **Editors' Suggestion**

Precise Quantization of the Anomalous Hall Effect near Zero Magnetic Field
A. J. Bestwick, E. J. Fox, Xufeng Kou, Lei Pan, Kang L. Wang, and D. Goldhaber-Gordon
Phys. Rev. Lett. **114**, 187201 (2015) – Published 4 May 2015

Polymer, Soft Matter, Biological, and Interdisciplinary Physics

Collective Ion Dynamics in Liquid Zinc: Evidence for Complex Dynamics in a Non-Free-Electron Liquid Metal
M. Zanatta, F. Sacchetti, E. Guarini, A. Orecchini, A. Paciaroni, L. Sani, and C. Petrillo
Phys. Rev. Lett. **114**, 187801 (2015) – Published 4 May 2015

Curvature Dependence of Hydrophobic Hydration Dynamics
R. Gregor Weiß, Matthias Heyden, and Joachim Dzubiella
Phys. Rev. Lett. **114**, 187802 (2015) – Published 5 May 2015
Editors' Suggestion

Margination Regimes and Drainage Transition in Confined Multicomponent Suspensions
Rafael G. Henríquez Rivera, Kushal Sinha, and Michael D. Graham
Phys. Rev. Lett. **114**, 188101 (2015) – Published 4 May 2015

Collective Dynamics in a Binary Mixture of Hydrodynamically Coupled Microrotors
Kyongmin Yeo, Enkeleida Lushi, and Petia M. Vlahovska
Phys. Rev. Lett. **114**, 188301 (2015) – Published 5 May 2015
Featured in Physics **Editors' Suggestion**

Droplet Clusters: Exploring the Phase Space of Soft Mesoscale Atoms
Jan Guzowski and Piotr Garstecki
Phys. Rev. Lett. **114**, 188302 (2015) – Published 6 May 2015

ERRATA

*Publisher's Note: Evidence of Lensing of the Cosmic Microwave Background by Dark Matter Halos [Phys. Rev. Lett. **114**, 151302 (2015)]*
Mathew Madhavacheril *et al.* (Atacama Cosmology Telescope Collaboration)
Phys. Rev. Lett. **114**, 189901 (2015) – Published 4 May 2015

*Erratum: Evidence for a Smooth Onset of Deformation in the Neutron-Rich Kr Isotopes [Phys. Rev. Lett. **108**, 062701 (2012)]*
M. Albers *et al.*
Phys. Rev. Lett. **114**, 189902 (2015) – Published 5 May 2015

*Erratum: Bond Disorder Induced Criticality of the Three-Color Ashkin-Teller Model [Phys. Rev. Lett. **109**, 155701 (2012)]*
Arash Bellafard, Helmut G. Katzgraber, Matthias Troyer, and Sudip Chakravarty
Phys. Rev. Lett. **114**, 189903 (2015) – Published 5 May 2015