



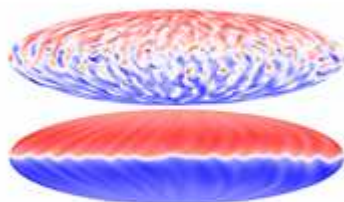
## HIGHLIGHTED ARTICLES

### **Featured in Physics Editors' Suggestion**

#### *Three Dimensional Simulation of the Magnetic Stress in a Neutron Star Crust*

T.S. Wood and R. Hollerbach

Phys. Rev. Lett. **114**, 191101 (2015) – Published 12 May 2015



Simulations of the magnetic field of a neutron star show that shear stresses induced by the field are strong enough to fracture the star's crust.

### **Featured in Physics Editors' Suggestion**

#### *Combined Measurement of the Higgs Boson Mass in $pp$ Collisions at $s\sqrt{=7}$ and 8 TeV with the ATLAS and CMS Experiments*

G. Aad *et al.* (ATLAS Collaboration, CMS Collaboration)

Phys. Rev. Lett. **114**, 191803 (2015) – Published 14 May 2015

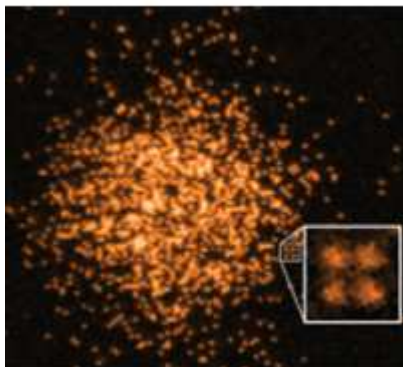


A new value for the Higgs boson mass will allow stronger tests of the standard model and of theories about the Universe's stability.

**Featured in Physics Editors' Suggestion**

*Quantum-Gas Microscope for Fermionic Atoms*

Lawrence W. Cheuk, Matthew A. Nichols, Melih Okan, Thomas Gersdorf, Vinay V. Ramasesh, Waseem S. Bakr, Thomas Lompe, and Martin W. Zwierlein  
Phys. Rev. Lett. **114**, 193001 (2015) – Published 13 May 2015



A quantum microscope able to image individual atoms of optically trapped fermionic potassium has been developed by combining 3D Raman sideband cooling along with high-resolution optics.

**Featured in Physics Editors' Suggestion**

*Experimental Demonstration of Room-Temperature Spin Transport in n-Type Germanium Epilayers*

S. Dushenko, M. Koike, Y. Ando, T. Shinjo, M. Myronov, and M. Shiraishi  
Phys. Rev. Lett. **114**, 196602 (2015) – Published 13 May 2015

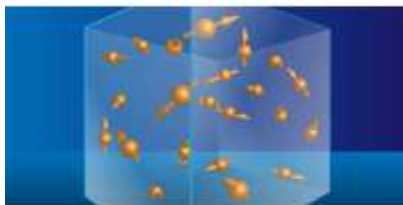


Germanium layers can carry spin-polarized currents over several hundred nanometers at room temperature, a key asset for spintronic applications.

**Featured in Physics Editors' Suggestion**

*Pressure and Phase Equilibria in Interacting Active Brownian Spheres*

Alexandre P. Solon, Joakim Stenhammar, Raphael Wittkowski, Mehran Kardar, Yariv Kafri, Michael E. Cates, and Julien Tailleur  
Phys. Rev. Lett. **114**, 198301 (2015) – Published 11 May 2015



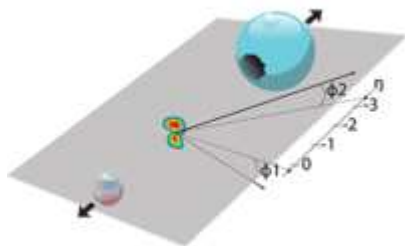
An equation of state for a gas of self-propelled spheres is a step towards a thermodynamic description of “active” matter, such as bird flocks and tissue.

**Editors' Suggestion**

*Measurement of Long-Range Angular Correlation and Quadrupole Anisotropy of Pions and (Anti)Protons in Central  $d+Au$  Collisions at  $\sqrt{s_{NN}}=200$  GeV*

A. Adare et al. (PHENIX Collaboration)

Phys. Rev. Lett. **114**, 192301 (2015) – Published 12 May 2015



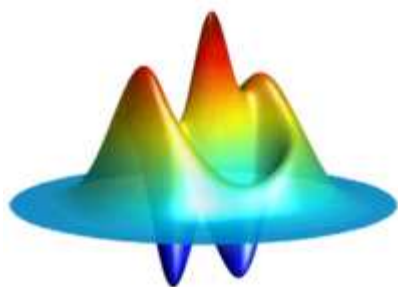
Particle correlations in deuteron-gold collisions at RHIC reveal patterns reminiscent of those generated by the quark-gluon plasma in larger heavy-ion collisions.

**Editors' Suggestion**

*Experimental Generation of Squeezed Cat States with an Operation Allowing Iterative Growth*

Jean Etesse, Martin Bouillard, Bhaskar Kanseri, and Rosa Tualle-Brouri

Phys. Rev. Lett. **114**, 193602 (2015) – Published 15 May 2015



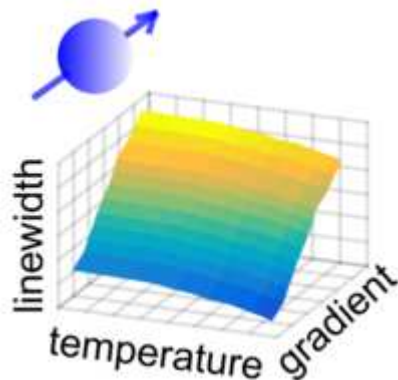
An optical setup is used to generate a mesoscopic state of light, called a cat state, which can be fed back into the system to increase its nonclassicality.

**Editors' Suggestion**

*Motional Averaging of Nuclear Resonance in a Field Gradient*

Nanette N. Jarenwattananon and Louis-S. Bouchard

Phys. Rev. Lett. **114**, 197601 (2015) – Published 12 May 2015



A revised theory for diffusion-based nuclear magnetic resonance shows that the linewidth decreases with temperature for gasses. This finding is contrary to the behavior seen in fluids and therefore allows gasses and liquids to be distinguished by their linewidth behavior.

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## LETTERS

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

### *Family of Bell-like Inequalities as Device-Independent Witnesses for Entanglement Depth*

Yeong-Cherng Liang, Denis Rosset, Jean-Daniel Bancal, Gilles Pütz, Tomer Jack Barnea, and Nicolas Gisin

Phys. Rev. Lett. **114**, 190401 (2015) – Published 12 May 2015

### *Testing Nonclassicality and Non-Gaussianity in Phase Space*

Jiyong Park, Junhua Zhang, Jaehak Lee, Se-Wan Ji, Mark Um, Dingshun Lv, Kihwan Kim, and Hyunchul Nha

Phys. Rev. Lett. **114**, 190402 (2015) – Published 15 May 2015

### *Quantum Algorithm for Universal Implementation of the Projective Measurement of Energy*

Shojun Nakayama, Akihito Soeda, and Mio Murao

Phys. Rev. Lett. **114**, 190501 (2015) – Published 14 May 2015

### *Nonperturbative Leakage Elimination Operators and Control of a Three-Level System*

Jun Jing, Lian-Ao Wu, Mark Byrd, J.Q. You, Ting Yu, and Zhao-Ming Wang

Phys. Rev. Lett. **114**, 190502 (2015) – Published 15 May 2015

### *Columnar Order and Ashkin-Teller Criticality in Mixtures of Hard Squares and Dimers*

Kabir Ramola, Kedar Damle, and Deepak Dhar

Phys. Rev. Lett. **114**, 190601 (2015) – Published 15 May 2015

## Gravitation and Astrophysics

### **Featured in Physics Editors' Suggestion**

### *Three Dimensional Simulation of the Magnetic Stress in a Neutron Star Crust*

T.S. Wood and R. Hollerbach

Phys. Rev. Lett. **114**, 191101 (2015) – Published 12 May 2015

## Elementary Particles and Fields

### *Infrared Renormalons versus Operator Product Expansions in Supersymmetric and Related Gauge Theories*

Gerald V. Dunne, M. Shifman, and Mithat Ünsal

Phys. Rev. Lett. **114**, 191601 (2015) – Published 12 May 2015

### *Holographic Twin Higgs Model*

Michael Geller and Ofri Telem

Phys. Rev. Lett. **114**, 191801 (2015) – Published 14 May 2015

### *Measurement of $J/\psi$ and $\psi(2S)$ Prompt Double-Differential Cross Sections in $pp$ Collisions at $s\sqrt{=7 TeV}$*

V. Khachatryan *et al.* (CMS Collaboration)

Phys. Rev. Lett. **114**, 191802 (2015) – Published 14 May 2015

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G. Aad *et al.* (ATLAS Collaboration, CMS Collaboration)

Phys. Rev. Lett. **114**, 191803 (2015) – Published 14 May 2015

### *Peak Locations and Relative Phase of Different Decay Modes of the $a_1$ Axial Vector Resonance in Diffractive Production*

Jean-Louis Basdevant and Edmond L. Berger

Phys. Rev. Lett. **114**, 192001 (2015) – Published 12 May 2015

## Nuclear Physics

### Editors' Suggestion

*Measurement of Long-Range Angular Correlation and Quadrupole Anisotropy of Pions and (Anti)Protons in Central  $d+Au$  Collisions at  $\sqrt{s_{NN}}=200$  GeV*

A. Adare *et al.* (PHENIX Collaboration)

Phys. Rev. Lett. **114**, 192301 (2015) – Published 12 May 2015

*$\beta$ -Decay Half-Lives of 110 Neutron-Rich Nuclei across the  $N=82$  Shell Gap: Implications for the Mechanism and Universality of the Astrophysical  $r$  Process*

G. Lorusso *et al.*

Phys. Rev. Lett. **114**, 192501 (2015) – Published 11 May 2015

*Evidence of Soft Dipole Resonance in  $Li^{11}$  with Isoscalar Character*

R. Kanungo *et al.*

Phys. Rev. Lett. **114**, 192502 (2015) – Published 12 May 2015

*Precision Measurement of the  $p(e, e'p)\pi^0$  Reaction at Threshold*

K. Chirapatpimol *et al.* (Hall A Collaboration)

Phys. Rev. Lett. **114**, 192503 (2015) – Published 13 May 2015

*Origin of Low-Lying Enhanced  $E1$  Strength in Rare-Earth Nuclei*

M. Spieker, S. Pascu, A. Zilges, and F. Jachello

Phys. Rev. Lett. **114**, 192504 (2015) – Published 12 May 2015

## Atomic, Molecular, and Optical Physics

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*Quantum-Gas Microscope for Fermionic Atoms*

Lawrence W. Cheuk, Matthew A. Nichols, Melih Okan, Thomas Gersdorf, Vinay V. Ramasesh, Waseem S. Bakr, Thomas Lompe, and Martin W. Zwierlein

Phys. Rev. Lett. **114**, 193001 (2015) – Published 13 May 2015

*Efficient Single Photon Emission and Collection Based on Excitation of Gap Surface Plasmons*

Hang Lian, Ying Gu, Juanjuan Ren, Fan Zhang, Luojia Wang, and Qihuang Gong

Phys. Rev. Lett. **114**, 193002 (2015) – Published 15 May 2015

*Cavity-Funneled Generation of Indistinguishable Single Photons from Strongly Dissipative Quantum Emitters*

Thomas Grange, Gaston Hornecker, David Hunger, Jean-Philippe Poizat, Jean-Michel Gérard, Pascale Senellart, and Alexia Auffèves

Phys. Rev. Lett. **114**, 193601 (2015) – Published 11 May 2015

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*Experimental Generation of Squeezed Cat States with an Operation Allowing Iterative Growth*

Jean Etesse, Martin Bouillard, Bhaskar Kanseri, and Rosa Tualle-Brouri

Phys. Rev. Lett. **114**, 193602 (2015) – Published 15 May 2015

*Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.*

*Frequency Combs with Weakly Lasing Exciton-Polariton Condensates*

K. Rayanov, B.L. Altshuler, Y.G. Rubo, and S. Flach

Phys. Rev. Lett. **114**, 193901 (2015) – Published 14 May 2015

## Plasma and Beam Physics

*Axial Momentum Lost to a Lateral Wall of a Helicon Plasma Source*

Kazunori Takahashi, Aiki Chiba, Atsushi Komuro, and Akira Ando

Phys. Rev. Lett. **114**, 195001 (2015) – Published 12 May 2015

*Direct Heating of a Laser-Imploded Core by Ultraintense Laser-Driven Ions*

Y. Kitagawa *et al.*

Phys. Rev. Lett. **114**, 195002 (2015) – Published 12 May 2015

*Tunable All-Optical Quasimonochromatic Thomson X-Ray Source in the Nonlinear Regime*

K. Khrennikov, J. Wenz, A. Buck, J. Xu, M. Heigoldt, L. Veisz, and S. Karsch

Phys. Rev. Lett. **114**, 195003 (2015) – Published 14 May 2015

Condensed Matter: Structure, etc.

*Orbital Angular Momentum and Spectral Flow in Two-Dimensional Chiral Superfluids*

Yasuhiro Tada, Wenxing Nie, and Masaki Oshikawa

Phys. Rev. Lett. **114**, 195301 (2015) – Published 13 May 2015

*Feshbach-Stabilized Insulator of Bosons in Optical Lattices*

L. de Forges de Parny, V.G. Rousseau, and T. Roscilde

Phys. Rev. Lett. **114**, 195302 (2015) – Published 11 May 2015

*Vacuum Channeling Radiation by Relativistic Electrons in a Transverse Field of a Laser-Based Bessel Beam*

L. Schächter and W.D. Kimura

Phys. Rev. Lett. **114**, 195501 (2015) – Published 12 May 2015

*Incommensurate Systems as Model Compounds for Disorder Revealing Low-Temperature Glasslike Behavior*

G. Reményi, S. Sahling, K. Biljaković, D. Starešinić, J.-C. Lasjaunias, J.E. Lorenzo, P. Monceau, and A. Cano

Phys. Rev. Lett. **114**, 195502 (2015) – Published 14 May 2015

*Consolidation of Partially Stabilized  $ZrO_2$  in the Presence of a Noncontacting Electric Field*

Hasti Majidi and Klaus van Benthem

Phys. Rev. Lett. **114**, 195503 (2015) – Published 15 May 2015

*Understanding Anharmonicity in fcc Materials: From its Origin to ab initio Strategies beyond the Quasiharmonic Approximation*

A. Glensk, B. Grabowski, T. Hickel, and J. Neugebauer

Phys. Rev. Lett. **114**, 195901 (2015) – Published 12 May 2015

*Ultrafast Atomic Diffusion Inducing a*

*Reversible  $(2\sqrt{3}\times 2\sqrt{3})R30^\circ \leftrightarrow (3\sqrt{3}\times 3\sqrt{3})R30^\circ$  Transition on  $Sn/Si(111):B$*

W. Srour, Daniel G. Trabada, J.I. Martínez, F. Flores, J. Ortega, M. Abuín, Y. Fagot-Revurat, B.

Kierren, A. Taleb-Ibrahimi, D. Malterre, and A. Tejada

Phys. Rev. Lett. **114**, 196101 (2015) – Published 13 May 2015

Condensed Matter: Electronic Properties, etc.

*Hierarchy of Modes in an Interacting One-Dimensional System*

O. Tsyplatyev, A.J. Schofield, Y. Jin, M. Moreno, W.K. Tan, C.J.B. Ford, J.P. Griffiths, I. Farrer,

G.A.C. Jones, and D.A. Ritchie

Phys. Rev. Lett. **114**, 196401 (2015) – Published 11 May 2015

*Extraordinary Exciton Conductance Induced by Strong Coupling*

Johannes Feist and Francisco J. Garcia-Vidal

Phys. Rev. Lett. **114**, 196402 (2015) – Published 12 May 2015

*Cavity-Enhanced Transport of Excitons*

Johannes Schachenmayer, Claudiu Genes, Edoardo Tignone, and Guido Pupillo

Phys. Rev. Lett. **114**, 196403 (2015) – Published 12 May 2015

*Thermal Vector Potential Theory of Transport Induced by a Temperature Gradient*

Gen Tatara

Phys. Rev. Lett. **114**, 196601 (2015) – Published 14 May 2015

**Featured in Physics Editors' Suggestion**

*Experimental Demonstration of Room-Temperature Spin Transport in  $n$ -Type Germanium Epilayers*

S. Dushenko, M. Koike, Y. Ando, T. Shinjo, M. Myronov, and M. Shiraishi

Phys. Rev. Lett. **114**, 196602 (2015) – Published 13 May 2015

*Determination of Formation and Ionization Energies of Charged Defects in Two-Dimensional Materials*

Dan Wang, Dong Han, Xian-Bin Li, Sheng-Yi Xie, Nian-Ke Chen, Wei Quan Tian, Damien West, Hong-Bo Sun, and S. B. Zhang

Phys. Rev. Lett. **114**, 196801 (2015) – Published 12 May 2015

*Phonon-Assisted Gain in a Semiconductor Double Quantum Dot Maser*

M. J. Gullans, Y.-Y. Liu, J. Stehlik, J. R. Petta, and J. M. Taylor

Phys. Rev. Lett. **114**, 196802 (2015) – Published 13 May 2015

*Coexistence of Charge-Density-Wave and Pair-Density-Wave Orders in Underdoped Cuprates*

Yuxuan Wang, Daniel F. Agterberg, and Andrey Chubukov

Phys. Rev. Lett. **114**, 197001 (2015) – Published 15 May 2015

*Theory of Electromagnons in CuO*

Kun Cao, Feliciano Giustino, and Paolo G. Radaelli

Phys. Rev. Lett. **114**, 197201 (2015) – Published 11 May 2015

*Microwave Magneto-chiral Dichroism in the Chiral-Lattice Magnet  $Cu_2OSeO_3$*

Y. Okamura, F. Kagawa, S. Seki, M. Kubota, M. Kawasaki, and Y. Tokura

Phys. Rev. Lett. **114**, 197202 (2015) – Published 12 May 2015

*Microwave Magneto-chiral Effect in  $Cu_2OSeO_3$*

Masahito Mochizuki

Phys. Rev. Lett. **114**, 197203 (2015) – Published 12 May 2015

*Coupling of Chiralities in Spin and Physical Spaces: The Möbius Ring as a Case Study*

Oleksandr V. Pylypovskyi, Volodymyr P. Kravchuk, Denis D. Sheka, Denys Makarov, Oliver G. Schmidt, and Yuri Gaididei

Phys. Rev. Lett. **114**, 197204 (2015) – Published 15 May 2015

*Photon Bunching in Cathodoluminescence*

S. Meuret, L. H. G. Tizei, T. Cazimajou, R. Bourrellier, H. C. Chang, F. Treussart, and M. Kociak

Phys. Rev. Lett. **114**, 197401 (2015) – Published 11 May 2015

**Editors' Suggestion**

*Motional Averaging of Nuclear Resonance in a Field Gradient*

Nanette N. Jarenwattananon and Louis-S. Bouchard

Phys. Rev. Lett. **114**, 197601 (2015) – Published 12 May 2015

*Core-Level Spectroscopy to Probe the Oxidation State of Single Europium Atoms*

Luiz H. G. Tizei, Ryo Nakanishi, Ryo Kitaura, Hisanori Shinohara, and Kazu Suenaga

Phys. Rev. Lett. **114**, 197602 (2015) – Published 15 May 2015

*Polymer, Soft Matter, Biological, and Interdisciplinary Physics*

*Cages and Anomalous Diffusion in Vibrated Dense Granular Media*

Camille Scalliet, Andrea Gnoli, Andrea Puglisi, and Angelo Vulpiani

Phys. Rev. Lett. **114**, 198001 (2015) – Published 15 May 2015

*Mortality, Redundancy, and Diversity in Stochastic Search*

Baruch Meerson and S. Redner

Phys. Rev. Lett. **114**, 198101 (2015) – Published 15 May 2015

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*Pressure and Phase Equilibria in Interacting Active Brownian Spheres*

Alexandre P. Solon, Joakim Stenhammar, Raphael Wittkowski, Mehran Kardar, Yariv Kafri, Michael E. Cates, and Julien Tailleur

Phys. Rev. Lett. **114**, 198301 (2015) – Published 11 May 2015

*Shape of Dynamical Heterogeneities and Fractional Stokes-Einstein and Stokes-Einstein-Debye Relations in Quasi-Two-Dimensional Suspensions of Colloidal Ellipsoids*

Chandan K. Mishra and Rajesh Ganapathy

Phys. Rev. Lett. **114**, 198302 (2015) – Published 15 May 2015

*Concentrating Genomic Length DNA in a Microfabricated Array*

Yu Chen, Ezra S. Abrams, T. Christian Boles, Jonas N. Pedersen, Henrik Flyvbjerg, Robert H. Austin, and James C. Sturm

Phys. Rev. Lett. **114**, 198303 (2015) – Published 15 May 2015

## ERRATA

*Erratum: Charged-Particle Stopping Powers in Inertial Confinement Fusion Plasmas [Phys. Rev. Lett. **70**, 3059 (1993)]*

Chi-Kang Li and Richard D. Petrasso

Phys. Rev. Lett. **114**, 199901 (2015) – Published 13 May 2015

*Erratum: Disordered Solids without Well-Defined Transverse Phonons: The Nature of Hard-Sphere Glasses [Phys. Rev. Lett. **114**, 035502 (2015)]*

Xipeng Wang, Wen Zheng, Lijin Wang, and Ning Xu

Phys. Rev. Lett. **114**, 199902 (2015) – Published 15 May 2015

*Erratum: Modification of the  $\omega$ -Meson Lifetime in Nuclear Matter [Phys. Rev. Lett. **100**, 192302 (2008)]*

M. Kotulla *et al.* (CBELSA/TAPS Collaboration)

Phys. Rev. Lett. **114**, 199903 (2015) – Published 15 May 2015