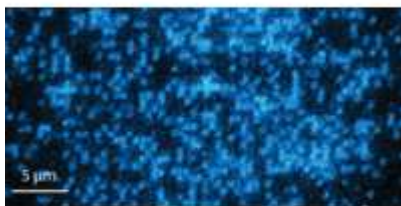


HIGHLIGHTED ARTICLES

Featured in Physics Editors' Suggestion

Site-Resolved Imaging of Fermionic Li_6 in an Optical Lattice

Maxwell F. Parsons, Florian Huber, Anton Mazurenko, Christie S. Chiu, Widagdo Setiawan, Katherine Wooley-Brown, Sebastian Blatt, and Markus Greiner
Phys. Rev. Lett. **114**, 213002 (2015) – Published 28 May 2015



Two new quantum gas microscopes demonstrate the imaging of fermionic atoms in an optical lattice, providing a step towards simulating complex electronic systems.

Featured in Physics Editors' Suggestion

Silent Flocks: Constraints on Signal Propagation Across Biological Groups

Andrea Cavagna, Irene Giardina, Tomas S. Grigera, Asja Jelic, Dov Levine, Sriram Ramaswamy, and Massimiliano Viale
Phys. Rev. Lett. **114**, 218101 (2015) – Published 27 May 2015



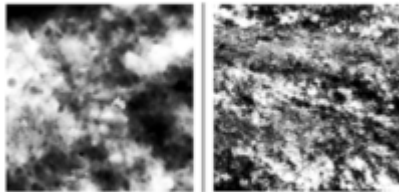
Flocking birds appear to communicate through collective waves, but these waves may not be able to travel in flocks of a certain size.

Featured in Physics

Turbulent Fracture Surfaces: A Footprint of Damage Percolation?

Stéphane Vernède, Laurent Ponson, and Jean-Philippe Bouchaud

Phys. Rev. Lett. **114**, 215501 (2015) – Published 29 May 2015



A statistical analysis of crack surfaces from three different types of materials reveals a deep connection with fluid turbulence and a potentially new approach to studying failed machine parts.

Editors' Suggestion

Galactic Center Excess in γ Rays from Annihilation of Self-Interacting Dark Matter

Manoj Kaplinghat, Tim Linden, and Hai-Bo Yu

Phys. Rev. Lett. **114**, 211303 (2015) – Published 27 May 2015



Self-interacting dark matter may explain the gamma-ray excess observed in the Milky Way's galactic center while also being consistent with the absence of these signals from dwarf spheroidal galaxies.

Editors' Suggestion

Higgs Boson Gluon-Fusion Production in QCD at Three Loops

Charalampos Anastasiou, Claude Duhr, Falko Dulat, Franz Herzog, and Bernhard Mistlberger

Phys. Rev. Lett. **114**, 212001 (2015) – Published 27 May 2015



First three-loop calculation of a cross section in perturbative QCD will help with the search for deviations in Higgs boson properties from Standard Model predictions.

Editors' Suggestion

Predictability of Rogue Events

Simon Birkholz, Carsten Brée, Ayhan Demircan, and Günter Steinmeyer

Phys. Rev. Lett. **114**, 213901 (2015) – Published 28 May 2015



Analysis of experimental data from multi-filament, oceanic and fiber optic rogue wave systems show that rogue waves are often preceded by a short ordered phase, providing a method to predict their occurrence.

Editors' Suggestion

Measurement of Charged-Particle Stopping in Warm Dense Plasma

A.B. Zylstra, J.A. Frenje, P.E. Grabowski, C.K. Li, G.W. Collins, P. Fitzsimmons, S. Glenzer, F.

Graziani, S.B. Hansen, S.X. Hu, M. Gatu Johnson, P. Keiter, H. Reynolds, J.R. Rygg, F.H. Séguin, and R.D. Petrasso

Phys. Rev. Lett. **114**, 215002 (2015) – Published 27 May 2015



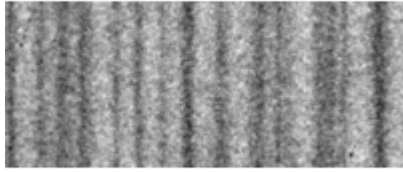
Charged particle energy loss and stopping power in warm dense matter (a moderately-coupled plasma at high density and moderate temperature) have been measured at the percent level by the OMEGA laser facility.

Editors' Suggestion

Evidence for a Bubble-Competition Regime in Indirectly Driven Ablative Rayleigh-Taylor Instability Experiments on the NIF

D.A. Martinez, V.A. Smalyuk, J.O. Kane, A. Casner, S. Liberatore, and L.P. Masse

Phys. Rev. Lett. **114**, 215004 (2015) – Published 29 May 2015



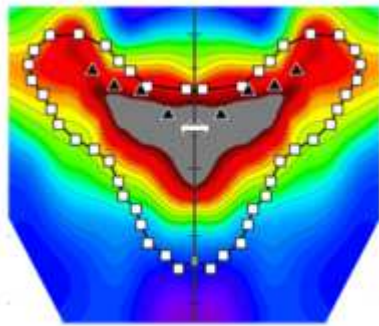
An x-ray radiation source on the National Ignition Facility can drive the Rayleigh-Taylor instability in a plasma from weakly nonlinear to the highly nonlinear regime.

Editors' Suggestion

Reentrant Superconductivity Driven by Quantum Tricritical Fluctuations in URhGe: Evidence from ^{60}Co NMR in $\text{URh}_{0.9}\text{Co}_{0.1}\text{Ge}$

Y. Tokunaga, D. Aoki, H. Mayaffre, S. Krämer, M.-H. Julien, C. Berthier, M. Horvatić, H. Sakai, S. Kambe, and S. Araki

Phys. Rev. Lett. **114**, 216401 (2015) – Published 27 May 2015



NMR measurements near the quantum tricritical point show that reentrance of superconductivity at high fields requires longitudinal fluctuations (parallel to the applied field). These experimental results will require revision of theoretical work, which to date has included only transverse fluctuations.

LETTERS

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

Frozen Quantum Coherence

Thomas R. Bromley, Marco Cianciaruso, and Gerardo Adesso

Phys. Rev. Lett. **114**, 210401 (2015) – Published 27 May 2015

Wigner Translations and the Observer Dependence of the Position of Massless Spinning Particles

Michael Stone, Vatsal Dwivedi, and Tianci Zhou

Phys. Rev. Lett. **114**, 210402 (2015) – Published 27 May 2015

Highly Retrievable Spin-Wave–Photon Entanglement Source

Sheng-Jun Yang, Xu-Jie Wang, Jun Li, Jun Rui, Xiao-Hui Bao, and Jian-Wei Pan

Phys. Rev. Lett. **114**, 210501 (2015) – Published 28 May 2015

Precision Metrology Using Weak Measurements

Lijian Zhang, Animesh Datta, and Ian A. Walmsley

Phys. Rev. Lett. **114**, 210801 (2015) – Published 27 May 2015

Gravitation and Astrophysics

New Class of Consistent Scalar-Tensor Theories

Jérôme Gleyzes, David Langlois, Federico Piazza, and Filippo Vernizzi

Phys. Rev. Lett. **114**, 211101 (2015) – Published 27 May 2015

Calculating the Annihilation Rate of Weakly Interacting Massive Particles

Matthew Baumgart, Ira Z. Rothstein, and Varun Vaidya
Phys. Rev. Lett. **114**, 211301 (2015) – Published 27 May 2015

Heavy Dark Matter Annihilation from Effective Field Theory

Grigory Ovanessian, Tracy R. Slatyer, and Iain W. Stewart
Phys. Rev. Lett. **114**, 211302 (2015) – Published 27 May 2015

Editors' Suggestion

Galactic Center Excess in γ Rays from Annihilation of Self-Interacting Dark Matter

Manoj Kaplinghat, Tim Linden, and Hai-Bo Yu
Phys. Rev. Lett. **114**, 211303 (2015) – Published 27 May 2015

Elementary Particles and Fields

Search for the Dark Photon and the Dark Higgs Boson at Belle

I. Jaegle *et al.* (Belle Collaboration)
Phys. Rev. Lett. **114**, 211801 (2015) – Published 27 May 2015

Editors' Suggestion

Higgs Boson Gluon-Fusion Production in QCD at Three Loops

Charalampos Anastasiou, Claude Duhr, Falko Dulat, Franz Herzog, and Bernhard Mistlberger
Phys. Rev. Lett. **114**, 212001 (2015) – Published 27 May 2015

Nuclear Physics

Subthreshold Ξ^- Production in Collisions of $p(3.5 \text{ GeV})+Nb$

G. Agakishiev *et al.* (HADES collaboration)
Phys. Rev. Lett. **114**, 212301 (2015) – Published 27 May 2015

Constraint of the Astrophysical $Al_{26g}(p,\gamma)Si_{27}$ Destruction Rate at Stellar Temperatures

S.D. Pain, D.W. Bardayan, J.C. Blackmon, S.M. Brown, K.Y. Chae, K.A. Chipps, J.A. Cizewski, K.L. Jones, R.L. Kozub, J.F. Liang, C. Matei, M. Matos, B.H. Moazen, C.D. Nesaraja, J. Okołowicz, P.D. O'Malley, W.A. Peters, S.T. Pittman, M. Płoszajczak, K.T. Schmitt, J.F. Shriner, Jr., D. Shapira, M.S. Smith, D.W. Stracener, and G.L. Wilson
Phys. Rev. Lett. **114**, 212501 (2015) – Published 28 May 2015

Unified Description of Li_6 Structure and Deuterium- He_4 Dynamics with Chiral Two- and Three-Nucleon Forces

Guillaume Hupin, Sofia Quaglioni, and Petr Navrátil
Phys. Rev. Lett. **114**, 212502 (2015) – Published 29 May 2015

Atomic, Molecular, and Optical Physics

Laser Cooling of Molecular Anions

Pauline Yzombard, Mehdi Hamamda, Sebastian Gerber, Michael Doser, and Daniel Comparat
Phys. Rev. Lett. **114**, 213001 (2015) – Published 27 May 2015

Featured in Physics Editors' Suggestion

Site-Resolved Imaging of Fermionic Li_6 in an Optical Lattice

Maxwell F. Parsons, Florian Huber, Anton Mazurenko, Christie S. Chiu, Widagdo Setiawan, Katherine Wooley-Brown, Sebastian Blatt, and Markus Greiner
Phys. Rev. Lett. **114**, 213002 (2015) – Published 28 May 2015

Thermal Light Cannot Be Represented as a Statistical Mixture of Single Pulses

Aurélia Chenu, Agata M. Brańczyk, Gregory D. Scholes, and J.E. Sipe
Phys. Rev. Lett. **114**, 213601 (2015) – Published 29 May 2015

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Editors' Suggestion

Predictability of Rogue Events

Simon Birkholz, Carsten Brée, Ayhan Demircan, and Günter Steinmeyer
Phys. Rev. Lett. **114**, 213901 (2015) – Published 28 May 2015

When Linear Stability Does Not Exclude Nonlinear Instability

P.G. Kevrekidis, D.E. Pelinovsky, and A. Saxena

Phys. Rev. Lett. **114**, 214101 (2015) – Published 29 May 2015

Observation of Orbital Angular Momentum Transfer from Bessel-Shaped Acoustic Vortices to Diphasic Liquid-Microparticle Mixtures

ZhenYu Hong, Jie Zhang, and Bruce W. Drinkwater

Phys. Rev. Lett. **114**, 214301 (2015) – Published 28 May 2015

Particle Motion Induced by Bubble Cavitation

Stéphane Poulain, Gabriel Guenoun, Sean Gart, William Crowe, and Sunghwan Jung

Phys. Rev. Lett. **114**, 214501 (2015) – Published 27 May 2015

Angular Statistics of Lagrangian Trajectories in Turbulence

Wouter J.T. Bos, Benjamin Kadoch, and Kai Schneider

Phys. Rev. Lett. **114**, 214502 (2015) – Published 29 May 2015

Plasma and Beam Physics

Scaling the Yield of Laser-Driven Electron-Positron Jets to Laboratory Astrophysical Applications

Hui Chen, F. Fiuza, A. Link, A. Hazi, M. Hill, D. Hoarty, S. James, S. Kerr, D.D. Meyerhofer, J.

Myatt, J. Park, Y. Sentoku, and G.J. Williams

Phys. Rev. Lett. **114**, 215001 (2015) – Published 26 May 2015

Editors' Suggestion

Measurement of Charged-Particle Stopping in Warm Dense Plasma

A.B. Zylstra, J.A. Frenje, P.E. Grabowski, C.K. Li, G.W. Collins, P. Fitzsimmons, S. Glenzer, F.

Graziani, S.B. Hansen, S.X. Hu, M. Gatu Johnson, P. Keiter, H. Reynolds, J.R. Rygg, F.H. Séguin, and R.D. Petrasso

Phys. Rev. Lett. **114**, 215002 (2015) – Published 27 May 2015

Precision Mapping of Laser-Driven Magnetic Fields and Their Evolution in High-Energy-Density Plasmas

L. Gao, P.M. Nilson, I.V. Igumenshchev, M.G. Haines, D.H. Froula, R. Betti, and D.D. Meyerhofer

Phys. Rev. Lett. **114**, 215003 (2015) – Published 29 May 2015

Editors' Suggestion

Evidence for a Bubble-Competition Regime in Indirectly Driven Ablative Rayleigh-Taylor Instability Experiments on the NIF

D.A. Martinez, V.A. Smalyuk, J.O. Kane, A. Casner, S. Liberatore, and L.P. Masse

Phys. Rev. Lett. **114**, 215004 (2015) – Published 29 May 2015

Condensed Matter: Structure, etc.

Featured in Physics

Turbulent Fracture Surfaces: A Footprint of Damage Percolation?

Stéphane Vernède, Laurent Ponson, and Jean-Philippe Bouchaud

Phys. Rev. Lett. **114**, 215501 (2015) – Published 29 May 2015

Surface Structure of $V_2O_3(0001)$ Revisited

Felix E. Feiten, Jan Seifert, Joachim Paier, Helmut Kühlenbeck, Helmut Winter, Joachim Sauer, and Hans-Joachim Freund

Phys. Rev. Lett. **114**, 216101 (2015) – Published 26 May 2015

Carbon Dimers as the Dominant Feeding Species in Epitaxial Growth and Morphological Phase Transition of Graphene on Different Cu Substrates

Ping Wu, Yue Zhang, Ping Cui, Zhenyu Li, Jinlong Yang, and Zhenyu Zhang

Phys. Rev. Lett. **114**, 216102 (2015) – Published 28 May 2015

Condensed Matter: Electronic Properties, etc.

Editors' Suggestion

Reentrant Superconductivity Driven by Quantum Tricritical Fluctuations in URhGe: Evidence from C_{59} NMR in $URh_{0.9}Co_{0.1}Ge$

Y. Tokunaga, D. Aoki, H. Mayaffre, S. Krämer, M.-H. Julien, C. Berthier, M. Horvatić, H. Sakai, S. Kambe, and S. Araki

Phys. Rev. Lett. **114**, 216401 (2015) – Published 27 May 2015

Chiral Spin Density Wave Order on the Frustrated Honeycomb and Bilayer Triangle Lattice Hubbard Model at Half-Filling

Kun Jiang, Yi Zhang, Sen Zhou, and Ziqiang Wang

Phys. Rev. Lett. **114**, 216402 (2015) – Published 29 May 2015

Critical Slowing Down of the Charge Carrier Dynamics at the Mott Metal-Insulator Transition

Benedikt Hartmann, David Zielke, Jana Polzin, Takahiko Sasaki, and Jens Müller

Phys. Rev. Lett. **114**, 216403 (2015) – Published 29 May 2015

Observation of Anderson Localization in Ultrathin Films of Three-Dimensional Topological Insulators

Jian Liao, Yunbo Ou, Xiao Feng, Shuo Yang, Chaojing Lin, Wenmin Yang, Kehui Wu, Ke He, Xucun Ma, Qi-Kun Xue, and Yongqing Li

Phys. Rev. Lett. **114**, 216601 (2015) – Published 28 May 2015

Itinerant Ferromagnetism in the As 4p Conduction Band of Ba_{0.6}K_{0.4}Mn₂As₂ Identified by X-Ray Magnetic Circular Dichroism

B.G. Ueland, Abhishek Pandey, Y. Lee, A. Sapkota, Y. Choi, D. Haskel, R.A. Rosenberg, J.C.

Lang, B.N. Harmon, D.C. Johnston, A. Kreyssig, and A.I. Goldman

Phys. Rev. Lett. **114**, 217001 (2015) – Published 27 May 2015

Interpretation of Scanning Tunneling Quasiparticle Interference and Impurity States in Cuprates

A. Kreisel, Peayush Choubey, T. Berlijn, W. Ku, B.M. Andersen, and P.J. Hirschfeld

Phys. Rev. Lett. **114**, 217002 (2015) – Published 27 May 2015

Collective Nature of Spin Excitations in Superconducting Cuprates Probed by Resonant Inelastic X-Ray Scattering

M. Minola, G. Dellea, H. Gretarsson, Y.Y. Peng, Y. Lu, J. Porras, T. Loew, F. Yakhou, N.B.

Brookes, Y.B. Huang, J. Pellicciari, T. Schmitt, G. Ghiringhelli, B. Keimer, L. Braicovich, and M. Le Tacon

Phys. Rev. Lett. **114**, 217003 (2015) – Published 28 May 2015

Quantum Criticality of Hot Random Spin Chains

R. Vasseur, A.C. Potter, and S.A. Parameswaran

Phys. Rev. Lett. **114**, 217201 (2015) – Published 27 May 2015

Collective Transport Properties of Driven Skyrmions with Random Disorder

C. Reichhardt, D. Ray, and C.J. Olson Reichhardt

Phys. Rev. Lett. **114**, 217202 (2015) – Published 27 May 2015

Multivariable Scaling for the Anomalous Hall Effect

Dazhi Hou, Gang Su, Yuan Tian, Xiaofeng Jin, Shengyuan A. Yang, and Qian Niu

Phys. Rev. Lett. **114**, 217203 (2015) – Published 29 May 2015

Anisotropic Stark Effect and Electric-Field Noise Suppression for Phosphorus Donor Qubits in Silicon

A.J. Sigillito, A.M. Tyryshkin, and S.A. Lyon

Phys. Rev. Lett. **114**, 217601 (2015) – Published 27 May 2015

Magnetic Structure and Ordering of Multiferroic Hexagonal LuFeO₃

Steven M. Disseler, Julie A. Borchers, Charles M. Brooks, Julia A. Mundy, Jarrett A. Moyer, Daniel A. Hillsberry, Eric L. Thies, Dmitri A. Tenne, John Heron, Megan E. Holtz, James D. Clarkson, Gregory M. Stiehl, Peter Schiffer, David A. Muller, Darrell G. Schlom, and William D. Ratcliff

Phys. Rev. Lett. **114**, 217602 (2015) – Published 27 May 2015

Polymer, Soft Matter, Biological, and Interdisciplinary Physics

Featured in Physics Editors' Suggestion

Silent Flocks: Constraints on Signal Propagation Across Biological Groups

Andrea Cavagna, Irene Giardina, Tomas S. Grigera, Asja Jelic, Dov Levine, Sriram Ramaswamy, and Massimiliano Viale

Phys. Rev. Lett. **114**, 218101 (2015) – Published 27 May 2015

Biological Magnetometry: Torque on Superparamagnetic Beads in Magnetic Fields

Maarten M. van Oene, Laura E. Dickinson, Francesco Pedaci, Mariana Köber, David Dulin, Jan Lipfert, and Nynke H. Dekker

Phys. Rev. Lett. **114**, 218301 (2015) – Published 27 May 2015

ERRATA

*Erratum: Dynamics of the Force Exchanged Between Membrane Inclusions [Phys. Rev. Lett. **112**, 128101 (2014)]*

Jean-Baptiste Fournier

Phys. Rev. Lett. **114**, 219901 (2015) – Published 28 May 2015