

Spatial structure of the mirror instability in a sheared plasma. [Matthew W. Kunz, Alexander A. Schekochihin, and James M. Stone, Phys. Rev. Lett. **112**, 205003 (2014)]

NEWSPAPER

PHYSICAL REVIEW LETTERS™

Contents

Articles published 17 May–23 May 2014

VOLUME 112, NUMBER 20 23 May 2014

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

Amplification of Angular Rotations Using Weak Measurements 200401
Omar S. Magaña-Loaiza, Mohammad Mirhosseini, Brandon Rodenburg, and Robert W. Boyd
One-way Einstein-Podolsky-Rosen Steering 200402
Joseph Bowles, Tamás Vértesi, Marco Túlio Quintino, and Nicolas Brunner
Digital Quantum Simulation of Spin Systems in Superconducting Circuits 200501
U. Las Heras, A. Mezzacapo, L. Lamata, S. Filipp, A. Wallraff, and E. Solano
Nonstandard Finite-Size Scaling at First-Order Phase Transitions 200601
Marco Mueller, Wolfhard Janke, and Desmond A. Johnston
Superdiffusive Modes in Two-Species Driven Diffusive Systems 200602
V. Popkov, J. Schmidt, and G. M. Schütz

Gravitation and Astrophysics

Quasiuniversal Properties of Neutron Star Mergers 201101
Sebastiano Bernuzzi, Alessandro Nagar, Simone Balmelli, Tim Dietrich, and Maximiliano Ujevic
I-Q Relation for Rapidly Rotating Neutron Stars 201102
Sayan Chakrabarti, Térence Delsate, Norman Gürlebeck, and Jan Steinhoff

Elementary Particles and Fields

Tensor Networks for Lattice Gauge Theories and Atomic Quantum Simulation 201601
E. Rico, T. Pichler, M. Dalmonte, P. Zoller, and S. Montangero
Electroweak Vacuum Stability in Light of BICEP2 201801
Malcolm Fairbairn and Robert Hogan
Search for Invisible Decays of a Higgs Boson Produced in Association with a Z Boson in ATLAS 201802
G. Aad *et al.* (ATLAS Collaboration)
Study of Beauty Hadron Decays into Pairs of Charm Hadrons 202001
R. Aaij *et al.* (LHCb Collaboration)

Nuclear Physics

Evidence for a New Resonance from Polarized Neutron-Proton Scattering 202301
P. Adlarson *et al.* (WASA-at-COSY Collaboration and SAID Data Analysis Center)
Systematic Uncertainties in the Analysis of the Reactor Neutrino Anomaly 202501
A. C. Hayes, J. L. Friar, G. T. Garvey, Gerard Jungman, and G. Jonkmans

(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 2014 American Physical Society

0031-9007(20140523)112:20;1-P

Resolution of Chiral Conundrum in ^{106}Ag: Doppler-Shift Lifetime Investigation 202502
E. O. Lieder, R. M. Lieder, R. A. Bark, Q. B. Chen, S. Q. Zhang, J. Meng, E. A. Lawrie, J. J. Lawrie, S. P. Bvumbi, N. Y. Kheswa, S. S. Ntshangase, T. E. Madiba, P. L. Masiteng, S. M. Mullins, S. Murray, P. Papka, D. G. Roux, O. Shirinda, Z. H. Zhang, P. W. Zhao, Z. P. Li, J. Peng, B. Qi, S. Y. Wang, Z. G. Xiao, and C. Xu

Exploring the Origin of Nearly Degenerate Doublet Bands in ^{106}Ag 202503
N. Rather, P. Datta, S. Chattopadhyay, S. Rajbanshi, A. Goswami, G. H. Bhat, J. A. Sheikh, S. Roy, R. Palit, S. Pal, S. Saha, J. Sethi, S. Biswas, P. Singh, and H. C. Jain

Atomic, Molecular, and Optical Physics

Accurate Ground-State Energies of Solids and Molecules from Time-Dependent Density-Functional Theory 203001
Thomas Olsen and Kristian S. Thygesen

Quantum Test of the Universality of Free Fall 203002
D. Schlippert, J. Hartwig, H. Albers, L. L. Richardson, C. Schubert, A. Roura, W. P. Schleich, W. Ertmer, and E. M. Rasel

Generation of Coherent Extreme-Ultraviolet Radiation Carrying Orbital Angular Momentum 203602
Primož Rebernik Ribič, David Gauthier, and Giovanni De Ninno

Enhancing Optomechanical Coupling via the Josephson Effect 203603
T. T. Heikkilä, F. Massel, J. Tuorila, R. Khan, and M. A. Sillanpää

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Enhancing the Sensitivity of Frequency and Energy Splitting Detection by Using Exceptional Points: Application to Microcavity Sensors for Single-Particle Detection 203901
Jan Wiersig

Harmonic Generation and Nonlinear Propagation: When Secondary Radiations Have Primary Consequences 203902
P. Béjot, G. Karras, F. Billard, E. Hertz, B. Lavorel, E. Cormier, and O. Faucher

Statistics of Extreme Waves in Random Media 203903
Jakob J. Metzger, Ragnar Fleischmann, and Theo Geisel

Optical Phase Synchronization by Injection of Common Broadband Low-Coherent Light 204101
Satoshi Sunada, Kenichi Arai, Kazuyuki Yoshimura, and Masaaki Adachi

Self-Propulsion of Immersed Objects via Natural Convection 204501
Matthieu J. Mercier, Arezoo M. Ardekani, Michael R. Allshouse, Brian Doyle, and Thomas Peacock

Plasma and Beam Physics

Hosing Instability Suppression in Self-Modulated Plasma Wakefields 205001
J. Vieira, W. B. Mori, and P. Muggli

Ponderomotive Forces *on* Waves in Modulated Media 205002
I. Y. Dodin and N. J. Fisch

Firehose and Mirror Instabilities in a Collisionless Shearing Plasma 205003
Matthew W. Kunz, Alexander A. Schekochihin, and James M. Stone

Condensed Matter: Structure, etc.

Thermodynamics and Kinetics of Three Mg-H-V_N Complexes in Mg:GaN from Combined First-Principles Calculation and Experiment 205501
Donghwa Lee, Brandon Mitchell, Y. Fujiwara, and V. Dierolf

Bending Poisson Effect in Two-Dimensional Crystals 205502
Xiaofei Liu, Douxing Pan, Yuanzhou Hong, and Wanlin Guo

Phonon Transport through Point Contacts between Graphitic Nanomaterials 205901
Juekuan Yang, Meng Shen, Yang Yang, William J. Evans, Zhiyong Wei, Weiyu Chen, Alfred A. Zinn, Yunfei Chen, Ravi Prasher, Terry T. Xu, Pawel Keblinski, and Deyu Li

Interplay between Water and TiO_2 Anatase (101) Surface with Subsurface Oxygen Vacancy 206101
Yadong Li and Yi Gao

(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.

Coexistence of Antiferromagnetism with Superconductivity in $CePt_2In_7$: Microscopic Phase Diagram Determined by ^{115}In NMR and NQR 206401
H. Sakai, Y. Tokunaga, S. Kambe, F. Ronning, E. D. Bauer, and J. D. Thompson

Emergence of a Novel Pseudogap Metallic State in a Disordered 2D Mott Insulator 206402
Elias Lahoud, O. Nganba Meetei, K. B. Chaska, A. Kanigel, and Nandini Trivedi

Low-Energy Electronic Properties of Clean $CaRuO_3$: Elusive Landau Quasiparticles 206403
M. Schneider, D. Geiger, S. Esser, U. S. Pracht, C. Stingl, Y. Tokiwa, V. Moshnyaga, I. Sheikin, J. Mravlje, M. Scheffler, and P. Gegenwart

Current Partition at Topological Channel Intersections 206601
Zhenhua Qiao, Jeil Jung, Chungwei Lin, Yafei Ren, Allan H. MacDonald, and Qian Niu

Quantum Criticality of Quasi-One-Dimensional Topological Anderson Insulators 206602
Alexander Altland, Dmitry Bagrets, Lars Fritz, Alex Kamenev, and Hanno Schmiedt

Floquet Scattering Matrix Theory of Heat Fluctuations in Dynamical Quantum Conductors 206801
Michael Moskalets

Ultrafast Modulation of the Chemical Potential in $BaFe_2As_2$ by Coherent Phonons 207001
L. X. Yang, G. Rohde, T. Rohwer, A. Stange, K. Hanff, C. Sohrt, L. Rettig, R. Cortés, F. Chen, D. L. Feng, T. Wolf, B. Kamble, I. Eremin, T. Popmintchev, M. M. Murnane, H. C. Kapteyn, L. Kipp, J. Fink, M. Bauer, U. Bovensiepen, and K. Rossnagel

Critical Doping for the Onset of a Two-Band Superconducting Ground State in $SrTiO_{3-\delta}$ 207002
Xiao Lin, German Bridoux, Adrien Gourgout, Gabriel Seyfarth, Steffen Krämer, Marc Nardone, Benoît Fauqué, and Kamran Behnia

Controlling Magnetic Order and Quantum Disorder in Molecule-Based Magnets 207201
T. Lancaster, P. A. Goddard, S. J. Blundell, F. R. Foronda, S. Ghannadzadeh, J. S. Möller, P. J. Baker, F. L. Pratt, C. Baines, L. Huang, J. Wosnitza, R. D. McDonald, K. A. Modic, J. Singleton, C. V. Topping, T. A. W. Beale, F. Xiao, J. A. Schlueter, A. M. Barton, R. D. Cabrera, K. E. Carreiro, H. E. Tran, and J. L. Manson

Hubbard Model on the Pyrochlore Lattice: A 3D Quantum Spin Liquid 207202
B. Normand and Z. Nussinov

Dynamics of a Two-Dimensional Quantum Spin Liquid: Signatures of Emergent Majorana Fermions and Fluxes 207203
J. Knolle, D. L. Kovrizhin, J. T. Chalker, and R. Moessner

Tuning Many-Body Interactions in Graphene: The Effects of Doping on Excitons and Carrier Lifetimes 207401
Kin Fai Mak, Felipe H. da Jornada, Keliang He, Jack Deslippe, Nicholas Petrone, James Hone, Jie Shan, Steven G. Louie, and Tony F. Heinz

Soft Matter, Biological, and Interdisciplinary Physics

Pulsatory Patterns in Active Fluids 208101
K. Vijay Kumar, Justin S. Bois, Frank Jülicher, and Stephan W. Grill

Cell Size Regulation in Bacteria 208102
Ariel Amir

Thermodynamics of Lithium Storage at Abrupt Junctions: Modeling and Experimental Evidence 208301
Lijun Fu, Chia-Chin Chen, Dominik Samuelis, and Joachim Maier

Marangoni Flow of Soluble Amphiphiles 208302
Matthieu Roché, Zhenzhen Li, Ian M. Griffiths, Sébastien Le Roux, Isabelle Cantat, Arnaud Saint-Jalmes, and Howard A. Stone

Dissipation and Rheology of Sheared Soft-Core Frictionless Disks Below Jamming 208303
Daniel Vågberg, Peter Olsson, and S. Teitel

Comments

Comment on "Protocol for Direct Counterfactual Quantum Communication" 208901
Lev Vaidman

(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)

Salih *et al.* Reply 208902
Hatim Salih, Zheng-Hong Li, M. Al-Amri, and M. Suhail Zubairy

Errata

Publisher's Note: Range-Separated Brueckner Coupled Cluster Doubles Theory [Phys. Rev. Lett. 112, 133002 (2014)] 209901
James J. Shepherd, Thomas M. Henderson, and Gustavo E. Scuseria

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.