PHYSICAL REVIEW LETTERS

Contents

VOLUME 84, NUMBER 8 21 February 2000

PRL 84 (8), 1639–1848 (21 February 2000)

General Physics

Surmounting Oscillating Barriers 1639
Jörg Lehmann, Peter Reimann, and Peter Hänggi

Critical Quantum Chaos and the One-Dimensional Harper Model 1643
S. N. Evangelou and J.-L. Pichard

Gravitation and Astrophysics

Conserved Charges for Gravity with Locally Anti–de Sitter Asymptotics 1647
Rodrigo Aros, Mauricio Contreras, Rodrigo Olea, Ricardo Troncoso, and Jorge Zanelli

The ^{44}Ti(α, p) Reaction and its Implication on the ^{44}Ti Yield in Supernovae 1651
A. A. Sonzogni, K. E. Rehm, I. Ahmad, F. Borasi, D. L. Bowers, F. Brumwell, J. Caggiano, C. N. Davids, J. P. Greene, B. Harss, A. Heinz, D. Henderson, R. V. F. Janssens, C. L. Jiang, G. McMichael, J. Nolen, R. C. Pardo, M. Paul, J. P. Schiffer, R. E. Segel, D. Seweryniak, R. H. Siemssen, J. W. Truran, J. Uusitalo, I. Wiedenhöver, and B. Zabransky

Production of Spin 3/2 Particles from Vacuum Fluctuations 1655
Antonio L. Maroto and Anupam Mazumdar

Elementary Particles and Fields

Conformal Boundary Conditions and Three-Dimensional Topological Field Theory 1659
Giovanni Felder, Jürg Fröhlich, Jürgen Fuchs, and Christoph Schweigert

Measurement of b-Quark Fragmentation Fractions in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV 1663
T. Affolder *et al.* (CDF Collaboration)

Atomic, Molecular, and Optical Physics

Coherently Controlled Asymmetric Synthesis with Achiral Light 1669
Moshe Shapiro, Einat Frishman, and Paul Brumer

Three-Loop Slope of the Dirac Form Factor and the $1S$ Lamb Shift in Hydrogen 1673
Kirill Melnikov and Timo van Ritbergen

Angle-Resolved Photoelectron Spectrometry Studies of the Autoionization of the $2s^2 2p\,^2P$ Triply Excited State of Atomic Lithium: Experimental Results and R-Matrix Calculations 1677
S. Diehl, D. Cubaynes, H. L. Zhou, L. VoKy, F. J. Wuilleumier, E. T. Kennedy, J. M. Bizau, S. T. Manson, T. J. Morgan, C. Blancard, N. Berrah, and J. Bozek

Trapping of an Electron due to Molecular Vibrations 1681
Edvardas Narevicius and Nimrod Moiseyev

Exact Linearization of the Radiation-Damped Spin System 1685
David E. Rourke and Matthew P. Augustine

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

From Generalized Synchrony to Topological Decoherence: Emergent Sets in Coupled Chaotic Systems 1689
Ernest Barreto, Paul So, Bruce J. Gluckman, and Steven J. Schiff

(Continued on Third Cover)

Copyright 2000 by The American Physical Society

Coherent Backscattering of an Elastic Wave in a Chaotic Cavity 1693
Julien de Rosny, Arnaud Tourin, and Mathias Fink
Probability Density Functions of the Enstrophy Flux in Two Dimensional Grid Turbulence 1696
H. Kellay, C. H. Bruneau, and X. L. Wu
Three-Lobed Shape Bifurcation of Rotating Liquid Drops 1700
K. Ohsaka and E. H. Trinh

Plasma and Beam Physics
X-Ray Diffraction from a Dense Plasma 1704
D. Riley, N. C. Woolsey, D. McSherry, I. Weaver, A. Djaoui, and E. Nardi
Two Different Modes of Nested Wire Array *Z*-Pinch Implosions 1708
S. V. Lebedev, R. Aliaga-Rossel, S. N. Bland, J. P. Chittenden, A. E. Dangor, M. G. Haines, and M. Zakaullah

Condensed Matter: Structure, etc.
Stiffness of Single-Walled Carbon Nanotubes under Large Strain 1712
T. Ozaki, Y. Iwasa, and T. Mitani
New Metallic Allotropes of Planar and Tubular Carbon 1716
H. Terrones, M. Terrones, E. Hernández, N. Grobert, J-C. Charlier, and P. M. Ajayan
In Situ X-Ray Study of Thermal Expansion and Phase Transition of Iron at Multimegabar Pressure 1720
L. S. Dubrovinsky, S. K. Saxena, F. Tutti, S. Rekhi, and T. LeBehan
Origin of O 1*s* Core-Level Shifts on Oxygen Adsorbed Si(111)-(7 × 7) 1724
Sung-Hoon Lee and Myung-Ho Kang
Energetic and Entropic Contributions to Surface Diffusion and Epitaxial Growth 1728
Anton Steltenpohl and Norbert Memmel
Dynamics of Surface Migration in the Weak Corrugation Regime 1732
J. V. Barth, H. Brune, B. Fischer, J. Weckesser, and K. Kern
Spectroscopic Evidence of a Wetting and Prewetting Transition in Liquid K-KCl Mixtures 1736
S. Staroske, D. Nattland, and W. Freyland
Multiscale Random-Walk Algorithm for Simulating Interfacial Pattern Formation 1740
Mathis Plapp and Alain Karma

Condensed Matter: Electronic Properties, etc.
Disordered Magnetism at the Metal-Insulator Threshold in Nano-Graphite-Based Carbon Materials 1744
Yoshiyuki Shibayama, Hirohiko Sato, Toshiaki Enoki, and Morinobu Endo
Observation of Disorder-Induced 2D Mott-Hubbard States of the Alkali-Earth Metal (Mg,Ba)-Adsorbed Si(111) Surface 1748
J. R. Ahn, S. S. Lee, N. D. Kim, J. H. Min, C. G. Hwang, and J. W. Chung
Strongly Driven Exciton Resonances in Quantum Wells: Light-Induced Dressing versus Coulomb Scattering 1752
C. Ciuti, C. Piermarocchi, V. Savona, P. E. Selbmann, P. Schwendimann, and A. Quattropani
Quantum Dots with Even Number of Electrons: Kondo Effect in a Finite Magnetic Field 1756
Michael Pustilnik, Yshai Avishai, and Konstantin Kikoin
Analytic Structure of One-Dimensional Localization Theory: Re-Examining Mott's Law 1760
Alexander O. Gogolin
Experimental Evidence for Resonant Tunneling in a Luttinger Liquid 1764
O. M. Auslaender, A. Yacoby, R. de Picciotto, K. W. Baldwin, L. N. Pfeiffer, and K. W. West
Real-Time Kadanoff-Baym Approach to Plasma Oscillations in a Correlated Electron Gas 1768
N.-H. Kwong and M. Bonitz
Closed Formulas for Tunneling Time in Superlattices 1772
Pedro Pereyra
Tunneling through a Coherent "Quantum Antidot Molecule" 1776
I. J. Maasilta and V. J. Goldman
Reversible, Nanometer-Scale Conductance Transitions in an Organic Complex 1780
H. J. Gao, K. Sohlberg, Z. Q. Xue, H. Y. Chen, S. M. Hou, L. P. Ma, X. W. Fang, S. J. Pang, and S. J. Pennycook

(Continued on Preceding Page)

Contents (Continued)

High-Field Quasiparticle Tunneling in $Bi_2Sr_2CaCu_2O_{8+\delta}$: Negative Magnetoresistance in the Superconducting State ... 1784
N. Morozov, L. Krusin-Elbaum, T. Shibauchi, L. N. Bulaevskii, M. P. Maley, Yu. I. Latyshev, and T. Yamashita

Quasiparticles in the Superconducting State of $Bi_2Sr_2CaCu_2O_{8+\delta}$ 1788
A. Kaminski, J. Mesot, H. Fretwell, J. C. Campuzano, M. R. Norman, M. Randeria, H. Ding, T. Sato, T. Takahashi, T. Mochiku, K. Kadowaki, and H. Hoechst

Do Columnar Defects Produce Bulk Pinning? 1792
M. V. Indenbom, C. J. van der Beek, M. Konczykowski, and F. Holtzberg

Metastability and Paramagnetism in Superconducting Mesoscopic Disks 1796
J. J. Palacios

Theoretical Model for the Superconducting and Magnetically Ordered Borocarbides 1800
A. Amici, P. Thalmeier, and P. Fulde

Andreev Reflection in Strong Magnetic Fields 1804
H. Hoppe, U. Zülicke, and Gerd Schön

Exact Demonstration of Magnetization Plateaus and First-Order Dimer-Néel Phase Transitions in a Modified Shastry-Sutherland Model for $SrCu_2(BO_3)_2$ 1808
Erwin Müller-Hartmann, Rajiv R. P. Singh, Christian Knetter, and Götz S. Uhrig

Origin of Biquadratic Exchange in Fe/Si/Fe 1812
G. J. Strijkers, J. T. Kohlhepp, H. J. M. Swagten, and W. J. M. de Jonge

Domain-Wall Induced Coupling between Ferromagnetic Layers 1816
Luc Thomas, Mahesh G. Samant, and Stuart S. P. Parkin

Polarized Raman Study of Aligned Multiwalled Carbon Nanotubes 1820
A. M. Rao, A. Jorio, M. A. Pimenta, M. S. S. Dantas, R. Saito, G. Dresselhaus, and M. S. Dresselhaus

Interdisciplinary Physics: Biological Physics, Quantum Information, etc.

Statistical Mechanics of Systems with Heterogeneous Agents: Minority Games 1824
Damien Challet, Matteo Marsili, and Riccardo Zecchina

Random Walks in the Space of Conformations of Toy Proteins 1828
Rose Du, Alexander Yu. Grosberg, and Toyoichi Tanaka

Factorial Moments Analyses Show a Characteristic Length Scale in DNA Sequences 1832
A. K. Mohanty and A. V. S. S. Narayana Rao

Partition Function Zeros and Finite Size Scaling of Helix-Coil Transitions in a Polypeptide 1836
Nelson A. Alves and Ulrich H. E. Hansmann

Comments

Fluid-Solid Phase Separation in Hard-Sphere Mixtures is Unrelated to Bond Percolation 1840
A. A. Louis

Buhot Replies 1841
A. Buhot

Comment on "Zero Temperature Phases of the Electron Gas" 1842
Setsuo Ichimaru

Ortiz *et al.* Reply 1843
G. Ortiz, M. Harris, and P. Ballone

Errata

Erratum: ^{4}He Desorption from Single Wall Carbon Nanotube Bundles: A One-Dimensional Adsorbate [Phys. Rev. Lett. **82**, 5305 (1999)] 1844
W. Teizer, R. B. Hallock, E. Dujardin, and T. W. Ebbesen

Erratum: Observation of Cosmic Acceleration and Determining the Fate of the Universe [Phys. Rev. Lett. **83**, 1510 (1999)] 1846
Glenn Starkman, Mark Trodden, and Tanmay Vachaspati

Erratum: Vibrationally Autoionizing Rydberg Wave Packets in NO [Phys. Rev. Lett. **83**, 2552 (1999)] 1847
V. G. Stavros, J. A. Ramswell, R. A. L. Smith, J. R. R. Verlet, J. Lei, and H. H. Fielding

Erratum: Superfluid Hydrodynamic Model for the Enhanced Moments of Inertia of Molecules in Liquid ^{4}He [Phys. Rev. Lett. **83**, 5058 (1999)] 1848
C. Callegari, A. Conjusteau, I. Reinhard, K. K. Lehmann, G. Scoles, and F. Dalfovo