PHYSICAL REVIEW LETTERS

Contents

VOLUME 80, NUMBER 20 18 May 1998

General Physics

Decoherence, Chaos, and the Correspondence Principle 4361
Salman Habib, Kosuke Shizume, and Wojciech Hubert Zurek

Quantum Hamilton-Jacobi Equation 4366
Vipul Periwal

Boundary Interaction Changing Operators and Dynamical Correlations in Quantum Impurity Problems 4370
F. Lesage and H. Saleur

Statistical Mechanical Interpretation of the Inverse Scattering Method: Level Dynamics for Exclusion Statistics 4374
Kazuhiro Hikami

Gravitation and Astrophysics

Absence of Abelian Higgs Hair for Extreme Black Holes 4378
A. Chamblin, J. M. A. Ashbourn-Chamblin, R. Emparan, and A. Sornborger

Elementary Particles and Fields

First Extraction of a Spin Polarizability of the Proton 4382
J. Tonnison, A. M. Sandorfi, S. Hoblit, and A. M. Nathan

Nuclear Physics

Electromagnetic Corrections to the One-Pion-Exchange Potential 4386
U. van Kolck, M. C. M. Rentmeester, J. L. Friar, T. Goldman, and J. J. de Swart

Differential Cross Section of the $pn \to pp(^1S_0)\pi^-$ Reaction Extracted from $pd \to ppp\pi^-$ 4390
F. Duncan, H. Hahn, C. Aclander, D. Ashery, E. G. Auld, D. R. Gill, D. A. Hutcheon, G. Jones, E. Korkmaz, S. Maytal-Beck, M. A. Moinester, J. A. Niskanen, D. Ottewell, A. Rahav, S. Ram, M. Sevior, P. L. Walden, and R. Weiss

Exactly Solvable Model of a Superconducting to Rotational Phase Transition 4394
D. J. Rowe, C. Bahri, and W. Wijesundera

Fingerprints of Reflection Asymmetry at High Angular Momentum in Atomic Nuclei 4398
E. Garrote, J. L. Egido, and L. M. Robledo

Atomic, Molecular, and Optical Physics

Formation of Cold Cs_2 Molecules through Photoassociation 4402
A. Fioretti, D. Comparat, A. Crubellier, O. Dulieu, F. Masnou-Seeuws, and P. Pillet

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, Etc.

Band-Gap Dependence of the Ultrafast White-Light Continuum 4406
A. Brodeur and S. L. Chin

Scale Invariant Correlations in a Driven Dissipative Gas 4410
Michael R. Swift, Marius Boamfă, Stephen J. Cornell, and Amos Maritan

Localized Morphologies with Long-Scale Forcing 4414
A. G. Class, L. Bühler, and S. H. Davis

(Continued on Third Cover)

Copyright 1998 by The American Physical Society

CODEN: PRLTAO 80 (20), 4361–4612 (18 May 1998)

Plasma and Beam Physics

Experimental Observation of Femtosecond Electron Beam Microbunching by Inverse Free-Electron-Laser Acceleration 4418
Y. Liu, X. J. Wang, D. B. Cline, M. Babzien, J. M. Fang, J. Gallardo, K. Kusche, I. Pogorelsky, J. Skaritka, and A. van Steenbergen

Suppression of Coherent Structures in Sheared Plasma Flows 4422
B. Krane, I. Christopher, M. Shoucri, and G. Knorr

Nonlinear Rayleigh-Taylor Evolution of a Three-Dimensional Multimode Perturbation 4426
M. M. Marinak, S. G. Glendinning, R. J. Wallace, B. A. Remington, K. S. Budil, S. W. Haan, R. E. Tipton, and J. D. Kilkenny

Invariants and Geometric Structures in Nonlinear Hamiltonian Magnetic Reconnection 4430
E. Cafaro, D. Grasso, F. Pegoraro, F. Porcelli, and A. Saluzzi

Regional Maximum Entropy Theory of Vortex Crystal Formation 4434
D. Z. Jin and Daniel H. E. Dubin

Long-Range Time Correlations in Plasma Edge Turbulence 4438
B. A. Carreras, B. van Milligen, M. A. Pedrosa, R. Balbín, C. Hidalgo, D. E. Newman, E. Sánchez, M. Frances, I. García-Cortés, J. Bleuel, M. Endler, S. Davies, and G. F. Matthews

Pressure Ionization and Line Merging in Strongly Coupled Plasmas Produced by 100-fs Laser Pulses 4442
M. Nantel, G. Ma, S. Gu, C. Y. Côté, J. Itatani, and D. Umstadter

Condensed Matter: Structure, Etc.

Solute-Enhanced Diffusion in a Dense Two-Dimensional Liquid 4446
Donna N. Perera and Peter Harrowell

Star Polymers Viewed as Ultrasoft Colloidal Particles 4450
C. N. Likos, H. Löwen, M. Watzlawek, B. Abbas, O. Jucknischke, J. Allgaier, and D. Richter

Slow Motion in a Metallic Liquid 4454
A. Meyer, J. Wuttke, W. Petry, O. G. Randl, and H. Schober

Anisotropy of the Critical Magnetic Field in a Ferroelectric Liquid Crystal 4458
B. Zalar, A. Gregorovič, M. Simsič, A. Zidanšek, R. Blinc, S. Keast, and M. Neubert

Effects of Dynamic Step-Step Repulsion and Autocatalysis on the Morphology of Etched Si(111) Surfaces 4462
Yi-Chiau Huang, Jaroslav Flidr, Theresa A. Newton, and Melissa A. Hines

Phase Equilibria of Mixtures Containing Chain Molecules Predicted through a Novel Simulation Scheme 4466
Theodora Spyriouni, Ioannis G. Economou, and Doros N. Theodorou

Cylinder ↔ Gyroid Epitaxial Transitions in Complex Polymeric Liquids 4470
M. W. Matsen

Homogeneous Nucleation Catastrophe as a Kinetic Stability Limit for Superheated Crystal 4474
K. Lu and Y. Li

Kinetics of Phase Transition in an Anticlinic Liquid Crystal Induced by a Uniform Temperature Field: Growth in One Dimension 4478
X. Y. Wang, Jian-feng Li, Eliezer Gurarie, S. Fan, T. Kyu, M. E. Neubert, S. S. Keast, Charles Rosenblatt

Heat Capacity and Superfluid Density of Thin ^{4}He Films on Porous Gold and on H_2 4482
Gábor A. Csáthy, Daryl Tulimieri, Jongsoo Yoon, and Moses H. W. Chan

Superfluidity of ^{3}He in Aerogel Covered with a Thick ^{4}He Film 4486
A. Golov, J. V. Porto, and J. M. Parpia

Adsorbate Azimuthal Orientation from Reflectance Anisotropy Spectroscopy 4490
B. G. Frederick, J. R. Power, R. J. Cole, C. C. Perry, Q. Chen, S. Haq, Th. Bertrams, N. V. Richardson, and P. Weightman

Condensed Matter: Electronic Properties, Etc.

Composite Fermions in Modulated Structures: Transport and Surface Acoustic Waves 4494
Felix von Oppen, Ady Stern, and Bertrand I. Halperin

(Continued on Preceding Page)

Contents (Continued)

Quantum Interference in LaB_6 4498
N. Harrison, R. G. Goodrich, J. J. Vuillemin, Z. Fisk, and D. G. Rickel

Elastic Properties of C and $B_xC_yN_z$ Composite Nanotubes 4502
E. Hernández, C. Goze, P. Bernier, and A. Rubio

Zener Interminiband Resonant Breakdown in Superlattices 4506
A. Sibille, J. F. Palmier, and F. Laruelle

Ab Initio Calculation of Excitonic Effects in the Optical Spectra of Semiconductors 4510
Stefan Albrecht, Lucia Reining, Rodolfo Del Sole, and Giovanni Onida

Optical Absorption of Insulators and the Electron-Hole Interaction: An *Ab Initio* Calculation 4514
Lorin X. Benedict, Eric L. Shirley, and Robert B. Bohn

Bloch Electrons in a Jahn-Teller Crystal and an Orbital-Density-Wave State due to the Berry Phase 4518
Hiroyasu Koizumi, Takashi Hotta, and Yasutami Takada

Statistics of Coulomb Blockade Peak Spacings 4522
S. R. Patel, S. M. Cronenwett, D. R. Stewart, A. G. Huibers, C. M. Marcus, C. I. Duruöz, J. S. Harris, Jr., K. Campman, and A. C. Gossard

Shuttle Mechanism for Charge Transfer in Coulomb Blockade Nanostructures 4526
L. Y. Gorelik, A. Isacsson, M. V. Voinova, B. Kasemo, R. I. Shekhter, and M. Jonson

Rare Errors in a Well-Characterized Electron Pump: Comparison of Experiment and Theory 4530
Mark W. Keller, John M. Martinis, and R. L. Kautz

Phase Transition in the $\nu = 2$ Bilayer Quantum Hall State 4534
A. Sawada, Z. F. Ezawa, H. Ohno, Y. Horikoshi, Y. Ohno, S. Kishimoto, F. Matsukura, M. Yasumoto, and A. Urayama

dc Transport of Composite Fermions in Weak Periodic Potentials 4538
J. H. Smet, K. von Klitzing, D. Weiss, and W. Wegscheider

Small Superconducting Grain in the Canonical Ensemble 4542
A. Mastellone, G. Falci, and Rosario Fazio

Impurity Effects on Quasiparticle c-Axis Planar Tunneling and STM Spectra in High-T_c Cuprates 4546
Michael E. Flatté and Jeff M. Byers

Local Density Fluctuations of Moving Vortices in the Solid and Liquid Phases in $Bi_2Sr_2CaCu_2O_y$ 4550
T. Tsuboi, T. Hanaguri, and A. Maeda

Solitary Waves of Planar Ferromagnets and the Breakdown of the Spin-Polarized Quantum Hall Effect 4554
N. R. Cooper

Green Function Monte Carlo with Stochastic Reconfiguration 4558
Sandro Sorella

Generation of Large Moments in a Spin-1 Chain with Random Antiferromagnetic Couplings 4562
Kun Yang and R. N. Bhatt

Phase Transition between Dimerized-Antiferromagnetic and Uniform-Antiferromagnetic Phases in the Impurity-Doped Spin-Peierls Cuprate $CuGeO_3$ 4566
T. Masuda, A. Fujioka, Y. Uchiyama, I. Tsukada, and K. Uchinokura

Investigation of the Low-Temperature Spin-Liquid Behavior of the Frustrated Magnet Gadolinium Gallium Garnet 4570
O. A. Petrenko, C. Ritter, M. Yethiraj, and D. McK Paul

Energetics of 3*d* Impurities on the (001) Surface of Iron 4574
B. Nonas, K. Wildberger, R. Zeller, and P. H. Dederichs

Spin-Dependent Perpendicular Magnetotransport through a Tunable $ZnSe/Zn_{1-x}Mn_xSe$ Heterostructure: A Possible Spin Filter? 4578
J. Carlos Egues

Spin Dynamics of the Magnetoresistive Pyrochlore $Tl_2Mn_2O_7$ 4582
J. W. Lynn, L. Vasiliu-Doloc, and M. A. Subramanian

Electron Core-Hole Interaction in the X-Ray Absorption Spectroscopy of 3*d* Transition Metals 4586
J. Schwitalla and H. Ebert

Determination of the Size and Shape of a Sonoluminescent Single Bubble: Theory on Angular Correlations of the Emitted Light 4590
A. Madrazo, N. García, and M. Nieto-Vesperinas

(Continued on Preceding Page)

Contents (Continued)

Cross-Disciplinary Physics

Generation of Intense Microwaves from a Two-Cavity Image Charge Focusing Relativistic Klystron Amplifier 4594
Wang Pingshan, Lei Fangyan, Huang Hua, Gan Yanqing, Wang Wendou, and Gu Binglin

Transition to Ripple Phases in Hydrated Amphiphiles 4598
C. Misbah, J. Duplat, and B. Houchmandzadeh

Spontaneous Onset of Coherence and Energy Storage by Membrane Transporters in an *RLC* Electric Circuit 4602
Imre Derényi and R. Dean Astumian

Single Molecule Imaging of Fluorescently Labeled Proteins on Metal by Surface Plasmons in Aqueous Solution 4606
Hiroaki Yokota, Kiwamu Saito, and Toshio Yanagida

Comments

Comment on "Spins, Parity, Excitation Energies, and Octupole Structure of an Excited Superdeformed Band in ^{194}Hg and Implications for Identical Bands" 4610
R. R. Chasman

Hackman *et al.* Reply 4611
G. Hackman, T. L. Khoo, M. P. Carpenter, T. Lauritsen, A. Lopez-Martens, I. J. Calderin, R. V. F. Janssens, D. Ackermann, I. Ahmad, S. Agarwala, D. J. Blumenthal, S. M. Fischer, D. Nisius, P. Reiter, J. Young, H. Amro, E. F. Moore, F. Hannachi, A. Korichi, I. Y. Lee, A. O. Macchiavelli, T. Døssing, and T. Nakatsukasa

Errata

Erratum: Fermi-Level-Pinning Defects in Highly *n*-Doped Silicon [Phys. Rev. Lett. **79**, 4834 (1997)] 4612
D. J. Chadi, P. H. Citrin, C. H. Park, D. L. Adler, M. A. Marcus, and H.-J. Gossmann