PHYSICAL REVIEW LETTERS

Contents

VOLUME 78, NUMBER 19 12 May 1997

CODEN: PRLTAO 78 (19), 3589–3799 (12 May 1997)

General Physics

Large Amplitude Oscillations of a Bose Condensate 3589
Augusto Smerzi and Stefano Fantoni

Hartree-Fock Theory for Double Condensates 3594
B. D. Esry, Chris H. Greene, James P. Burke, Jr., and John L. Bohn

Time Evolution of Nonequilibrium Effective Action 3598
Christof Wetterich

Detection of the Rotation of the Earth with a Superfluid Gyrometer 3602
O. Avenel, P. Hakonen, and E. Varoquaux

Gravitation and Astrophysics

A Simple Construction of Initial Data for Multiple Black Holes 3606
Steven Brandt and Bernd Brügmann

Constraints on a Primordial Magnetic Field 3610
John D. Barrow, Pedro G. Ferreira, and Joseph Silk

Limits on Topological Defect Neutrino Fluxes from Horizontal Air Shower Measurements 3614
J. J. Blanco-Pillado, R. A. Vázquez, and E. Zas

New Prospects for Real-Time Spectroscopy of Low Energy Electron Neutrinos from the Sun 3618
R. S. Raghavan

Elementary Particles and Fields

Scattering of Soft, Cool Pions 3622
Robert D. Pisarski and Michel Tytgat

Supersymmetric Contributions to Electroweak Precision Observables: QCD Corrections 3626
A. Djouadi, P. Gambino, S. Heinemeyer, W. Hollik, C. Jünger, and G. Weiglein

Two-loop QCD Corrections to Semileptonic b Decays at Maximal Recoil 3630
Andrzej Czarnecki and Kirill Melnikov

Limits on Anomalous $WW\gamma$ Couplings from $p\overline{p} \rightarrow W\gamma + X$ Events at $\sqrt{s} = 1.8$ TeV 3634
S. Abachi *et al.* (DØ Collaboration)

Study of the $ZZ\gamma$ and $Z\gamma\gamma$ Couplings in $Z(\nu\nu)\gamma$ Production 3640
S. Abachi *et al.* (DØ Collaboration)

Nuclear Physics

Search for the H-Dibaryon in $^{3}\mathrm{He}(K^{-}, K^{+})Hn$ 3646
R. W. Stotzer *et al.* (The BNL E836 Collaboration)

Excited States in ^{176,178}Hg and Shape Coexistence in Very Neutron-Deficient Hg Isotopes 3650
M. P. Carpenter, R. V. F. Janssens, H. Amro, D. J. Blumenthal, L. T. Brown, D. Seweryniak, P. J. Woods, D. Ackermann, I. Ahmad, C. Davids, S. M. Fischer, G. Hackman, J. H. Hamilton, T. L. Khoo, T. Lauritsen, C. J. Lister, D. Nisius, A. V. Ramayya, W. Reviol, J. Schwartz, J. Simpson, and J. Wauters

(Continued on Third Cover)

Atomic, Molecular, and Optical Physics

Orthonormal Wavelet Bases for Quantum Molecular Dynamics 3654
C. J. Tymczak and Xiao-Qian Wang

Accurate Measurement of the 2^3S_1-3^3D_1 Two-Photon Transition Frequency in Helium: New Determination of the 2^3S_1 Lamb Shift 3658
C. Dorrer, F. Nez, B. de Beauvoir, L. Julien, and F. Biraben

Single and Double Photoionization from Dipole Response Function 3662
Robert C. Forrey, Zong-Chao Yan, H. R. Sadeghpour, and A. Dalgarno

Buffer-Gas Loading and Magnetic Trapping of Atomic Europium 3665
Jinha Kim, Bretislav Friedrich, Daniel P. Katz, David Patterson, Jonathan D. Weinstein, Robert DeCarvalho, and John M. Doyle

Proton-Induced Plasticity in Hydrogen Clusters 3669
I. Štich, D. Marx, M. Parrinello, and K. Terakura

Single Molecules Driven by Strong Resonant Fields: Hyper-Raman and Subharmonic Resonances 3673
B. Lounis, F. Jelezko, and M. Orrit

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, Etc.

Fragmentation by Crack Branching 3677
Jan Åström and Jussi Timonen

Condensed Matter: Structure, Etc.

Dimensional Crossover of the Fundamental-Measure Functional for Parallel Hard Cubes 3681
José A. Cuesta and Yuri Martínez-Ratón

Monatomic-Molecular Transition in Expanded Rubidium 3685
W.-C. Pilgrim, M. Ross, L. H. Yang, and F. Hensel

Fluid Membrane Interactions Probed by Nuclear Spin Relaxation 3689
Per-Ola Quist and Bertil Halle

Evidence for Capillary Waves at Immiscible Polymer/Polymer Interfaces 3693
M. Sferrazza, C. Xiao, R. A. L. Jones, D. G. Bucknall, J. Webster, and J. Penfold

Observation of a Cinnabar Phase in GaAs at High Pressure 3697
M. I. McMahon and R. J. Nelmes

How Floppy Modes Give Rise to Adsorption Sites in Zeolites 3701
Kenton D. Hammonds, Hui Deng, Volker Heine, and Martin T. Dove

Contrasts between Coarsening and Relaxational Dynamics of Surfaces 3705
Martin Siegert, Michael Plischke, and R. K. P. Zia

Slow Dynamics in the Relaxation of an Irrationally Frustrated *XY* Model in Two Dimensions: Analogy to Supercooled Liquids 3709
Bongsoo Kim and Sung Jong Lee

Direct Observation of Hydrogen Etching Anisotropy on Diamond Single Crystal Surfaces 3713
C.-L. Cheng, H.-C. Chang, J.-C. Lin, K.-J. Song, and J.-K. Wang

Condensed Matter: Electronic Properties, Etc.

Composite Fermions in the Fractional Quantum Hall Effect: Transport at Finite Wave Vector 3717
A. D. Mirlin and P. Wölfle

Lattice Model for Metal Ammonia Solutions 3721
Kevin Leung and Félix S. Csajka

Intramolecular Charge Disproportionation and the Band Structure of A_3C_{60} Superconductors 3725
A. Ceulemans, L. F. Chibotaru, and F. Cimpoesu

LiV_2O_4: A Heavy Fermion Transition Metal Oxide 3729
S. Kondo, D. C. Johnston, C. A. Swenson, F. Borsa, A. V. Mahajan, L. L. Miller, T. Gu, A. I. Goldman, M. B. Maple, D. A. Gajewski, E. J. Freeman, N. R. Dilley, R. P. Dickey, J. Merrin, K. Kojima, G. M. Luke, Y. J. Uemura, O. Chmaissem, and J. D. Jorgensen

(Continued on Preceding Page)

Contents (Continued)

Quantum Kinetic Electron-Phonon Interaction in GaAs: Energy Nonconserving Scattering Events and Memory Effects 3733
Cornelius Fürst, Alfred Leitenstorfer, Alfred Laubereau, and Roland Zimmermann
Single-Electron Box and the Helicity Modulus of an Inverse Square *XY* Model 3737
W. Hofstetter and W. Zwerger
Topological Excitations in Double-Layer Quantum Hall Systems 3741
Kyungsun Moon
Tilting Instability and Other Anomalies in the Flux Lattice in Some Magnetic Superconductors 3745
T. K. Ng and C. M. Varma
Parity Effect in Ground State Energies of Ultrasmall Superconducting Grains 3749
K. A. Matveev and A. I. Larkin
Theory of Dichroism in the Electromagnetic Response of Superconductors 3753
K. Capelle, E. K. U. Gross, and B. L. Györffy
^{17}O NMR Evidence for a Pseudogap in the Monolayer $HgBa_2CuO_{4+\delta}$ 3757
J. Bobroff, H. Alloul, P. Mendels, V. Viallet, J.-F. Marucco, and D. Colson
Local Electronic Structure of a Single Magnetic Impurity in a Superconductor 3761
Michael E. Flatté and Jeff M. Byers
Magnetic Anisotropy of an Impurity in a Semi-Infinite Host 3765
L. Szunyogh and B. L. Györffy
Comparison of $CeRh_2Si_2$ and $CeRh_{2-x}Ru_xSi_2$ near their Magnetic-Nonmagnetic Boundaries 3769
T. Graf, J. D. Thompson, M. F. Hundley, R. Movshovich, Z. Fisk, D. Mandrus, R. A. Fisher, and N. E. Phillips
Resistivity due to a Domain Wall in Ferromagnetic Metal 3773
Gen Tatara and Hidetoshi Fukuyama
Madelung Potentials and Disorder Broadening of Core Photoemission Spectra in Random Alloys 3777
R. J. Cole, N. J. Brooks, and P. Weightman

Cross-Disciplinary Physics

Interacting Pulses in Three-Component Reaction-Diffusion Systems on Two-Dimensional Domains 3781
C. P. Schenk, M. Or-Guil, M. Bode, and H.-G. Purwins
Algebraic Decay of Velocity Fluctuations in a Confined Fluid 3785
M. H. J. Hagen, I. Pagonabarraga, C. P. Lowe, and D. Frenkel
Conformational Properties and Static Structure Factor of Polyelectrolyte Solutions 3789
Arun Yethiraj
Scaling and Nucleation in Models of Earthquake Faults 3793
W. Klein, J. B. Rundle, and C. D. Ferguson

Comments

Non-Boltzmann Fluctuations in Numerical Simulations of Nonequilibrium Lattice Threshold Systems 3797
H.-J. Xu and D. Sornette
Rundle *et al.* Reply 3798
J. B. Rundle, W. Klein, S. Gross, and D. L. Turcotte

Errata

Observational Constraints on Open Inflation Models [Phys. Rev. Lett. **77**, 4704 (1996)] 3799
Martin White and Joseph Silk
An Exactly Solvable Kondo Problem for Interacting One-Dimensional Fermions [Phys. Rev. Lett. **77**, 4934 (1996)] 3799
Yupeng Wang and Johannes Voit