NEWSPAPER 78

PHYSICAL REVIEW LETTERS

Contents

VOLUME 78, NUMBER 17 28 April 1997

General Physics

Optimized Perturbation Theory for Wave Functions of Quantum Systems 3229
T. Hatsuda, T. Kunihiro, and T. Tanaka

Quantum Statistical Mechanics of an Ideal Gas with Fractional Exclusion Statistics in Arbitrary Dimensions 3233
Kazumoto Iguchi

Cluster Heat Bath Algorithm in Monte Carlo Simulations of Ising Models 3237
F. Matsubara, A. Sato, O. Koseki, and T. Shirakura

New Performance Bounds for a Finite-Time Carnot Refrigerator 3241
S. Velasco, J. M. M. Roco, A. Medina, and A. Calvo Hernández

q-analysis of Fractal Sets 3245
Ayşe Erzan and Jean-Pierre Eckmann

Gravitation and Astrophysics

Spinning Down a Black Hole with Scalar Fields 3249
Chris M. Chambers, William A. Hiscock, and Brett Taylor

Elementary Particles and Fields

Search for Light Supersymmetric Baryons 3252
I. F. Albuquerque *et al.* (E761 Collaboration)

Enhanced *CP* Violation with $B \longrightarrow KD^0(\overline{D}^0)$ Modes and Extraction of the Cabibbo-Kobayashi-Maskawa Angle γ 3257
David Atwood, Isard Dunietz, and Amarjit Soni

Analyses of $D^+ \rightarrow K_S^0 K^+$ and $D^+ \rightarrow K_S^0 \pi^+$ 3261
M. Bishai *et al.* (CLEO Collaboration)

Nuclear Physics

$T = 0$ versus $T = 1$ Pairing in the Interacting Boson Model 3266
P. Van Isacker and D. D. Warner

Pauli Nonlocality in Heavy-Ion Rainbow Scattering: A Further Test of the Folding Model 3270
M. A. Cândido Ribeiro, L. C. Chamon, D. Pereira, M. S. Hussein, and D. Galetti

Atomic, Molecular, and Optical Physics

Spectral Analysis of Time Correlation Function for a Dissipative Dynamical System Using Filter Diagonalization: Application to Calculation of Unimolecular Decay Rates 3274
Vladimir A. Mandelshtam and Howard S. Taylor

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, Etc.

Quantum Chaotic Attractor in a Dissipative System 3278
W. Vincent Liu and William C. Schieve

Nonlinear Optical Pulse Propagation in the Single-Cycle Regime 3282
Thomas Brabec and Ferenc Krausz

Multistability of Three-Wave Parametric Self-Trapping 3286
Alexander V. Buryak and Yuri S. Kivshar

(Continued on Third Cover)

17

Contents (Continued)

Polarization Evolution and Polarization Instability of Solitons in a Birefringent Optical Fiber 3290
Y. Barad and Y. Silberberg
High Extraction Efficiency of Spontaneous Emission from Slabs of Photonic Crystals 3294
Shanhui Fan, Pierre R. Villeneuve, J. D. Joannopoulos, and E. F. Schubert
Possible Stratification Mechanism in Granular Mixtures 3298
Hernán A. Makse, Pierre Cizeau, and H. Eugene Stanley
Thermodynamical Approach for Small-Scale Parametrization in 2D Turbulence 3302
Pierre-Henri Chavanis and Joël Sommeria
Suppression of Cross-Field Turbulent Transport of Passive Scalar Concentration in Two Dimensional Magnetohydrodynamics 3306
P. H. Diamond and A. V. Gruzinov

Plasma and Beam Physics

Coherent Electron Acceleration by Subcycle Laser Pulses 3310
Bernhard Rau, T. Tajima, and H. Hojo
Experimental Observation of Electrons Accelerated in Vacuum to Relativistic Energies by a High-Intensity Laser 3314
G. Malka, E. Lefebvre, and J. L. Miquel
Measurement of a Dispersion Curve for Linear-Regime Rayleigh-Taylor Growth Rates in Laser-Driven Planar Targets 3318
S. G. Glendinning, S. N. Dixit, B. A. Hammel, D. H. Kalantar, M. H. Key, J. D. Kilkenny, J. P. Knauer, D. M. Pennington, B. A. Remington, R. J. Wallace, and S. V. Weber
Characterization of Laser Driven Shocks in Low Density Foam Targets 3322
D. Hoarty, A. Iwase, C. Meyer, J. Edwards, and O. Willi

Condensed Matter: Structure, Etc.

Paracyanogenlike Structures in High-Density Amorphous Carbon Nitride 3326
F. Weich, J. Widany, and Th. Frauenheim
Structure of Endohedral Dimetallofullerene $Sc_2@C_{84}$ 3330
Masaki Takata, Eiji Nishibori, Buntaro Umeda, Makoto Sakata, Etsuji Yamamoto, and Hisanori Shinohara
Identification and Quantification of Defects in Highly Si-Doped GaAs by Positron Annihilation and Scanning Tunneling Microscopy 3334
J. Gebauer, R. Krause-Rehberg, C. Domke, Ph. Ebert, and K. Urban
Anomalous Size Dependence of Relaxational Processes 3338
Armin Bunde, Shlomo Havlin, Joseph Klafter, Gernot Gräff, and Arkady Shehter
Step Permeability and the Relaxation of Biperiodic Gratings on Si(001) 3342
S. Tanaka, N. C. Bartelt, C. C. Umbach, R. M. Tromp, and J. M. Blakely

Condensed Matter: Electronic Properties, Etc.

Generalized Density Functional Theory 3346
A. Khein and N. W. Ashcroft
Quantum Monte Carlo Investigation of Exchange and Correlation in Silicon 3350
Randolph Q. Hood, M. Y. Chou, A. J. Williamson, G. Rajagopal, R. J. Needs, and W. M. C. Foulkes
Quasilocalized States in Disordered Metals and Nonanalyticity of the Level Curvature Distribution Function 3354
V. E. Kravtsov and I. V. Yurkevich
Ultrafast Acoustic Phonon Ballistics in Semiconductor Heterostructures 3358
J. J. Baumberg, D. A. Williams, and K. Köhler
Angular Dependence of Universal Conductance Fluctuations in Noble-Metal Nanowires 3362
E. Scheer, H. v. Löhneysen, A. D. Mirlin, P. Wölfle, and H. Hein
Intrinsic Decoherence in Mesoscopic Systems 3366
P. Mohanty, E. M. Q. Jariwala, and R. A. Webb
Frequency Dependence of Shot Noise in a Diffusive Mesoscopic Conductor 3370
R. J. Schoelkopf, P. J. Burke, A. A. Kozhevnikov, D. E. Prober, and M. J. Rooks
Orbital Dependent Superconductivity in Sr_2RuO_4 3374
D. F. Agterberg, T. M. Rice, and M. Sigrist

(Continued on Preceding Page)

Contents (Continued)

Vortex Dynamics and Instabilities in Layered and Homogeneous Ta/Ge Superconductors 3378
B. J. Ruck, J. C. Abele, H. J. Trodahl, S. A. Brown, and P. Lynam
Coexistence of Antiferromagnetism and Dimerization in a Disordered Spin-Peierls Model: Exact Results 3382
Michele Fabrizio and Régis Mélin
Properties of a Band Jahn-Teller System with Strong Electron Correlations: Application to Yb_4As_3 3386
Y. M. Li, N. d'Ambrumenil, and P. Fulde
Intramolecular Antiferromagnetic Coupling in Supramolecular Grid Structures with Co^{2+} Metal Centers 3390
O. Waldmann, J. Hassmann, P. Müller, G. S. Hanan, D. Volkmer, U. S. Schubert, and J.-M. Lehn
Emergence of Fast Local Dynamics on Cooling toward the Ising Spin Glass Transition 3394
Peter H. Poole, Sharon C. Glotzer, Antonio Coniglio, and Naeem Jan

Cross-Disciplinary Physics

Controlling Spiral Waves in Confined Geometries by Global Feedback 3398
V. S. Zykov, A. S. Mikhailov, and S. C. Müller
Monodisperse Vesicles Stabilized by Grafted Polymers 3402
R. Joannic, L. Auvray, and D. D. Lasic
Multiple Exciton Effects in Molecular Aggregates: Application to a Photosynthetic Antenna Complex 3406
Thomas Renger and Volkhard May
Is Quantum Bit Commitment Really Possible? 3410
Hoi-Kwong Lo and H. F. Chau
Unconditionally Secure Quantum Bit Commitment is Impossible 3414
Dominic Mayers

Comments

$\overline{p}$ Annihilation in Au + Au at 11 GeV/c 3418
Y. Pang, D. E. Kahana, and S. H. Kahana
Beavis *et al.* Reply 3419
D. Beavis

Errata

Limits on Models of the Ultrahigh Energy Cosmic Rays Based on Topological Defects [Phys. Rev. Lett. **77**, 3708 (1996)] 3420
R. J. Protheroe and Todor Stanev