PHYSICAL REVIEW LETTERS

Contents

VOLUME 79, NUMBER 19 10 November 1997

CODEN: PRLTAO 79 (19), 3545–3796 (10 November 1997)

General Physics

Analysis of Data from Continuous Probability Distributions 3545
Timothy E. Holy

Critical Temperature of Bose-Einstein Condensation of Hard-Sphere Gases 3549
Peter Grüter, David Ceperley, and Frank Laloë

Instability and Depletion of an Excited Bose-Einstein Condensate in a Trap 3553
Y. Castin and R. Dum

Fluctuations of the Particle Number in a Trapped Bose-Einstein Condensate 3557
Siegfried Grossmann and Martin Holthaus

Equipartition and Mass Segregation in a One-Dimensional Self-Gravitating System 3561
Kenneth R. Yawn and Bruce N. Miller

Escape Times of j Random Walkers from a Fractal Labyrinth 3565
S. Bravo Yuste

Concerted Diffusion of Molecular Clusters in a Molecular Sieve 3569
David S. Sholl and Kristen A. Fichthorn

Elementary Particles and Fields

Two-Loop Beta Functions without Feynman Diagrams 3573
Peter E. Haagensen, Kasper Olsen, and Ricardo Schiappa

Why Is the Matrix Model Correct? 3577
Nathan Seiberg

Target Space Duality in Noncommutative Geometry 3581
Fedele Lizzi and Richard J. Szabo

The $\mu\tau$ and $e\tau$ Decays of Top Quark Pairs Produced in $p\overline{p}$ Collisions at $\sqrt{s} = 1.8$ TeV 3585
F. Abe *et al.* (CDF Collaboration)

Infrared Behavior of Gluon and Ghost Propagators in Landau Gauge QCD 3591
Lorenz von Smekal, Andreas Hauck, and Reinhard Alkofer

Domain Wall Quarks and Kaon Weak Matrix Elements 3595
T. Blum and A. Soni

First Observation of Inclusive B Decays to the Charmed Strange Baryons Ξ_c^0 and Ξ_c^+ 3599
B. Barish *et al.* (CLEO Collaboration)

Next-to-Leading Order Calculation of Four-Jet Shape Variables 3604
Zoltán Nagy and Zoltán Trócsányi

Hyperon Polarization and Single Spin Left-Right Asymmetry in Inclusive Production Processes at High Energies 3608
Liang Zuo-tang and C. Boros

Nuclear Physics

Search for Charged Strange Quark Matter Produced in 11.5A GeV/c Au + Pb Collisions 3612
T. A. Armstrong *et al.* (The E864 Collaboration)

(Continued on Third Cover)

Contents (Continued)

Atomic, Molecular, and Optical Physics

Core Level Energy Splitting in the C 1*s* Photoelectron Spectrum of C_2H_2 3617
B. Kempgens, H. Köppel, A. Kivimäki, M. Neeb, L. S. Cederbaum, and A. M. Bradshaw

Ionization of Helium in the Attosecond Equivalent Light Pulse of 1 GeV/Nucleon U^{92+} Projectiles 3621
R. Moshammer, W. Schmitt, J. Ullrich, H. Kollmus, A. Cassimi, R. Dörner, O. Jagutzki, R. Mann, R. E. Olson, H. T. Prinz, H. Schmidt-Böcking, and L. Spielberger

Multielectron Processes in Heavy Ion–Atom Collisions at Intermediate Velocity 3625
D. Vernhet, L. Adoui, J. P. Rozet, K. Wohrer, A. Chetioui, A. Cassimi, J. P. Grandin, J. M. Ramillon, M. Cornille, and C. Stephan

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, Etc.

Can Wave Packet Revivals Occur in Chaotic Quantum Systems? 3629
Steven Tomsovic and Julie H. Lefebvre

Noise-Sustained Convective Structures in Nonlinear Optics 3633
Marco Santagiustina, Pere Colet, Maxi San Miguel, and Daniel Walgraef

Time-Dependent Coherent Backscattering of Acoustic Waves 3637
Arnaud Tourin, Arnaud Derode, Philippe Roux, Bart A. van Tiggelen, and Mathias Fink

Crystallization of non-Brownian Spheres under Horizontal Shaking 3640
O. Pouliquen, M. Nicolas, and P. D. Weidman

Refined Similarity Hypothesis for a Randomly Advected Passive Scalar 3644
Emily S. C. Ching

Observation of the Ultimate Regime in Rayleigh-Bénard Convection 3648
X. Chavanne, F. Chillà, B. Castaing, B. Hébral, B. Chabaud, and J. Chaussy

Plasma and Beam Physics

Steady State Tokamak Equilibria without Current Drive 3652
K. C. Shaing, A. Y. Aydemir, Y. R. Lin-Liu, and R. L. Miller

Condensed Matter: Structure, Etc.

Charge Separation in Confined Charged Fluids 3656
Jiang Yu, Léo Degrève, and Marcelo Lozada-Cassou

Off-Equilibrium Fluctuation-Dissipation Relation in Fragile Glasses 3660
Giorgio Parisi

Structures of Liquid GaSb and InSb Studied with the Extended X-Ray-Absorption Fine-Structure Method 3664
Yuren Wang, Kunquan Lu, and Chenxi Li

Nonexistence of the Diatomic β-Tin Structure 3668
R. J. Nelmes, M. I. McMahon, and S. A. Belmonte

Theory of Threading Edge and Screw Dislocations in GaN 3672
J. Elsner, R. Jones, P. K. Sitch, V. D. Porezag, M. Elstner, Th. Frauenheim, M. I. Heggie, S. Öberg, and P. R. Briddon

Atomistic Determination of Cross-Slip Pathway and Energetics 3676
T. Rasmussen, K. W. Jacobsen, T. Leffers, O. B. Pedersen, S. G. Srinivasan, and H. Jónsson

Radiation-Induced Transformation of Graphite to Diamond 3680
Michael Zaiser and Florian Banhart

Fracture of a Brittle Membrane 3684
Jan Åström and Jussi Timonen

Dynamical Signatures of the Vulcanization Transition 3688
Kurt Broderix, Paul M. Goldbart, and Annette Zippelius

Hysteresis in the Underdamped Driven Frenkel-Kontorova Model 3692
O. M. Braun, A. R. Bishop, and J. Röder

(Continued on Preceding Page)

Diffusion of Hydrogen on Ni(111) over a Wide Range of Temperature: Exploring Quantum Diffusion on Metals 3696
G. X. Cao, E. Nabighian, and X. D. Zhu
Temperature-Induced Semiconducting $c(4 \times 2) \Leftrightarrow$ Metallic (2×1) Reversible Phase Transition on the β-SiC(100) Surface 3700
V. Yu. Aristov, L. Douillard, O. Fauchoux, and P. Soukiassian
Dynamics of the Contact Line: Contact Angle Hysteresis 3704
P. Collet, J. De Coninck, F. Dunlop, and A. Regnard
Dislocation-Free Island Formation in Heteroepitaxial Growth: A Study at Equilibrium 3708
István Daruka, and Albert-László Barabási

Condensed Matter: Electronic Properties, Etc.
Density Functional Theory for Holes in Semiconductors 3712
R. Enderlein, G. M. Sipahi, L. M. R. Scolfaro, and J. R. Leite
Hyper-Raman Gain due to Excitons Coherently Driven with Femtosecond Pulses 3716
J.-P. Likforman, M. Joffre, and D. Hulin
Pressure-Enhanced Interplane Tunneling Magnetoresistance in a Layered Manganite Crystal 3720
T. Kimura, A. Asamitsu, Y. Tomioka, and Y. Tokura
Logarithmic Divergence of the Electrical Resistivity in the Metal Hydride $YH_{3-\delta}$ 3724
J. N. Huiberts, R. Griessen, R. J. Wijngaarden, M. Kremers, and C. Van Haesendonck
Near Critical States of Random Dirac Fermions 3728
Y. Morita and Y. Hatsugai
Has a Josephson-Plasma Mode Been Observed in Layered Superconductors? 3732
E. B. Sonin
New Quantum Phase in a One-Dimensional Josephson Array 3736
L. I. Glazman and A. I. Larkin
Dephasing and the Orthogonality Catastrophe in Tunneling through a Quantum Dot: The "Which Path?" Interferometer 3740
I. L. Aleiner, Ned S. Wingreen, and Yigal Meir
Quenching of Magnetoresistance by Hot Electrons in Magnetic Tunnel Junctions 3744
S. Zhang, P. M. Levy, A. C. Marley, and S. S. P. Parkin
Dynamic Excitations of Fractional Quantum Hall Edge Channels 3748
G. Ernst, N. B. Zhitenev, R. J. Haug, and K. von Klitzing
Superconducting Quantum Critical Point 3752
R. Ramazashvili and P. Coleman
Kondo Effect in High-T_c Cuprates 3755
Naoto Nagaosa and Patrick A. Lee
Recoupling of Decoupled Vortex Liquid by Columnar Defects in $Bi_2Sr_2CaCu_2O_{8+y}$ 3759
M. Sato, T. Shibauchi, S. Ooi, T. Tamegai, and M. Konczykowski
Coupling Transition of the Vortex Liquid in $Bi_2Sr_2CaCu_2O_{8+\delta}$ with Columnar Defects 3763
M. Kosugi, Y. Matsuda, M. B. Gaifullin, L. N. Bulaevskii, N. Chikumoto, M. Konczykowski, J. Shimoyama, K. Kishio, K. Hirata, and K. Kumagai
Lifshitz Tail in the Density of States of a Superconductor with Magnetic Impurities 3767
A. V. Balatsky and S. A. Trugman
Anomalous Field Dependence of Magnetic Penetration Depth in the Vortex State of $CeRu_2$ Probed by Muon Spin Rotation 3771
A. Yamashita, K. Ishii, T. Yokoo, J. Akimitsu, M. Hedo, Y. Inada, Y. Ōnuki, E. Yamamoto, Y. Haga, and R. Kadono
Identification of Quadrupolar Excitation Channels at the L_3 Edge of Rare-Earth Compounds 3775
F. Bartolomé, J. M. Tonnerre, L. Sève, D. Raoux, J. Chaboy, L. M. García, M. Krisch, and C. C. Kao
Possible Orbital Ordering in a Spin-Singlet Ground State: ^{51}V NMR and NQR study of $BaVS_3$ 3779
Hiroyuki Nakamura, Hideto Imai, and Masayuki Shiga

(Continued on Preceding Page)

Contents (Continued)

Cross-Disciplinary Physics

Power Law Behavior in the Asymptotic Relaxation of Reversible Diffusion-Influenced Reaction $A + B \rightleftarrows AB$ Perturbed by Photolysis 3783
Mino Yang, Sangyoub Lee, and Kook Joe Shin

Coding, Channel Capacity, and Noise Resistance in Communicating with Chaos 3787
Erik Bollt, Ying-Cheng Lai, and Celso Grebogi

Comments

Hopf Term for a Two-Dimensional Electron Gas 3791
G. E. Volovik and V. M. Yakovenko

Apel and Bychkov Reply 3792
W. Apel and Yu. A. Bychkov

Intrasublattice Hopping and $T_c^{\max}$ in the Cuprates 3793
A. A. Aligia, F. Lema, M. E. Simon, and C. D. Batista

Feiner, Jefferson, and Raimondi Reply 3794
L. F. Feiner, J. H. Jefferson, and R. Raimondi

Comment on "Plastic Vortex Creep in $YBa_2Cu_3O_{7-x}$ Crystals" 3795
T. Klein, W. Harneit, L. Baril, C. Escribe-Filippini, and D. Feinberg

Abulafia *et al.* Reply 3796
Y. Abulafia, A. Shaulov, R. Prozorov, Y. Wolfus, L. Burlachkov, Y. Yeshurun, E. Zeldov, V. Vinokur, and V. B. Geshkenbein