PHYSICAL REVIEW LETTERS

Contents

VOLUME 83, NUMBER 19 8 November 1999

PRL 83 (19), 3751–3972 (8 November 1999)

General Physics

Finite Precision Measurement Nullifies the Kochen-Specker Theorem 3751
David A. Meyer

Noncontextual Hidden Variables and Physical Measurements 3755
Adrian Kent

Bounds on Integrals of the Wigner Function 3758
A. J. Bracken, H.-D. Doebner, and J. G. Wood

Quantum Point Contacts for Neutral Atoms 3762
J. H. Thywissen, R. M. Westervelt, and M. Prentiss

Trapped ^{6}Li: A High T_c Superfluid? 3766
R. Combescot

Transition Temperature of a Uniform Imperfect Bose Gas 3770
Kerson Huang

Anisotropic Coarsening: Grain Shapes and Nonuniversal Persistence 3772
Andrew D. Rutenberg and Benjamin P. Vollmayr-Lee

Gravitation and Astrophysics

Is SAX J1808.4-3658 a Strange Star? 3776
X.-D. Li, I. Bombaci, Mira Dey, Jishnu Dey, and E. P. J. van den Heuvel

Elementary Particles and Fields

Production of Charginos, Neutralinos, and Sleptons at Hadron Colliders 3780
W. Beenakker, M. Klasen, M. Krämer, T. Plehn, M. Spira, and P. M. Zerwas

Probing the Quark-Gluon Plasma with a New Fermionic Correlator 3784
R. V. Gavai and Sourendu Gupta

Nuclear Physics

New Measurement of the $^1S_0$ Neutron-Neutron Scattering Length Using the Neutron-Proton Scattering Length as a Standard 3788
D. E. González Trotter, F. Salinas, Q. Chen, A. S. Crowell, W. Glöckle, C. R. Howell, C. D. Roper, D. Schmidt, I. Šlaus, H. Tang, W. Tornow, R. L. Walter, H. Witała, and Z. Zhou

Measurement of the Magnetic Moment of the One-Neutron Halo Nucleus ^{11}Be 3792
W. Geithner, S. Kappertz, M. Keim, P. Lievens, R. Neugart, L. Vermeeren, S. Wilbert, V. N. Fedoseyev, U. Köster, V. I. Mishin, V. Sebastian, and ISOLDE Collaboration

Atomic, Molecular, and Optical Physics

Experimental Investigation of Nonergodic Effects in Subrecoil Laser Cooling 3796
B. Saubaméa, M. Leduc, and C. Cohen-Tannoudji

Correlation between Nuclear Motion in the Core-Excited CF_4 Molecule and Molecular Dissociation after Resonant Auger Decay 3800
K. Ueda, M. Simon, C. Miron, N. Leclercq, R. Guillemin, P. Morin, and S. Tanaka

(Continued on Third Cover)

Copyright 1999 by The American Physical Society

Contents (Continued)

New Approach to Fluorescence Spectroscopy of Individual Molecules on Surfaces 3804
Jörg Enderlein
Magnetic Field Enhancement of Dielectronic Recombination from a Continuum of Finite Bandwidth 3808
Victor Klimenko, Lung Ko, and T. F. Gallagher
Rotational Level Structure of SF_6-Doped ^4He_N Clusters 3812
E. Lee, D. Farrelly, and K. B. Whaley
Radiative Cooling of a Small Metal Cluster: The Case of V_{13}^+ 3816
C. Walther, G. Dietrich, W. Dostal, K. Hansen, S. Krückeberg, K. Lützenkirchen, and L. Schweikhard

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Lorenz Bifurcation: Instabilities in Quasireversible Systems 3820
M. Clerc, P. Coullet, and E. Tirapegui
Mechanism for Taming Chaos by Weak Harmonic Perturbations 3824
Takahiro Tamura, Naohiko Inaba, and Juichi Miyamichi
Continuous Wave Coherent Lyman-α Radiation 3828
K. S. E. Eikema, J. Walz, and T. W. Hänsch
Empty Site Models for Heap Formation in Vertically Vibrating Grains 3832
L. C. Jia, Pik-Yin Lai, and C. K. Chan
The Helicoid versus the Catenoid: Geometrically Induced Bifurcations 3836
Arezki Boudaoud, Pedro Patrício, and Martine Ben Amar

Plasma and Beam Physics

Bifurcation and Relaxation of Radial Electric Field in Enhanced Reversed Shear Tokamak Plasmas 3840
K. C. Shaing, A. Y. Aydemir, R. Hiwatari, W. A. Houlberg, Y. Ogawa, and M. C. Zarnstorff

Condensed Matter: Structure, etc.

Nanometer-Scale Surface Patterns with Long-Range Order Created by Crystallization of Diblock Copolymers 3844
Günter Reiter, Gilles Castelein, Pierre Hoerner, Gérard Riess, Alexander Blumen, and Jens-Uwe Sommer
Dual Chemical Role of Ag as an Additive in Chalcogenide Glasses 3848
M. Mitkova, Yu Wang, and P. Boolchand
Large Pairing Jahn-Teller Distortions Around Divacancies in Crystalline Silicon 3852
Serdar Öğüt and James R. Chelikowsky
Dynamics of Phase Separation under Shear: A Soluble Model 3856
N. P. Rapapa and A. J. Bray
Bi-state Superfluid ^{3}He Weak Links and the Stability of Josephson π States 3860
A. Marchenkov, R. W. Simmonds, S. Backhaus, A. Loshak, J. C. Davis, and R. E. Packard
π States in Josephson Junctions between ^{3}He-B 3864
S.-K. Yip
Theory of the π State in ^{3}He Josephson Junctions 3868
J. K. Viljas and E. V. Thuneberg
Evolution of a Surface-Roughness Spectrum Caused by Stress in Nanometer-Scale Chemical Etching 3872
K.-S. Kim, J. A. Hurtado, and H. Tan
Effects of Nonlinear Elastic Surface Pulses in Anisotropic Silicon Crystals 3876
A. Lomonosov and P. Hess
Novel Method for the Experimental Determination of Step Energies 3880
G. Schulze Icking-Konert, M. Giesen, and H. Ibach
Stiff Monatomic Gold Wires with a Spinning Zigzag Geometry 3884
Daniel Sánchez-Portal, Emilio Artacho, Javier Junquera, Pablo Ordejón, Alberto García, and José M. Soler
Theory and Observation of Displacement Phenomena in Coadsorbed Films 3888
William J. Weber and David L. Goodstein

(Continued on Preceding Page)

Condensed Matter: Electronic Properties, etc.

One-Particle Spectral Properties of 1D Mott-Hubbard Insulators 3892
J. M. P. Carmelo, J. M. E. Guerra, J. M. B. Lopes dos Santos, and A. H. Castro Neto
Tight-Binding Molecular Dynamics of Shock Waves in Methane 3896
J. D. Kress, S. R. Bickham, L. A. Collins, B. L. Holian, and S. Goedecker
Electronic Configuration of Yb Compounds 3900
W. M. Temmerman, Z. Szotek, A. Svane, P. Strange, H. Winter, A. Delin, B. Johansson, O. Eriksson, L. Fast, and J. M. Wills
Dopant-Induced Crossover from 1D to 3D Charge Transport in Conjugated Polymers 3904
J. A. Reedijk, H. C. F. Martens, H. B. Brom, and M. A. J. Michels
Correlated Fermions in a One-Dimensional Quasiperiodic Potential 3908
Julien Vidal, Dominique Mouhanna, and Thierry Giamarchi
Interacting Two-Electron Model of a Coherent Quantum-Dot Single-Electron Turnstile 3912
P. I. Tamborenea and H. Metiu
Charge Order, Superconductivity, and a Global Phase Diagram of Doped Antiferromagnets 3916
Matthias Vojta and Subir Sachdev
Fourfold Basal Plane Anisotropy of the Nonlocal Magnetization of YNi_2B_2C 3920
L. Civale, A. V. Silhanek, J. R. Thompson, K. J. Song, C. V. Tomy, and D. McK. Paul
Electron-Mediated ^{17}O-^{63}Cu Spin-Spin Coupling and Electron Spin Correlations in $YBa_2Cu_3O_7$ 3924
S. Yu, K. R. Gorny, C. H. Pennington, W. L. Hults, and J. L. Smith
c-Axis Superfluid Response and Quasiparticle Damping of Underdoped Bi:2212 and Bi:2201 3928
M. B. Gaifullin, Yuji Matsuda, N. Chikumoto, J. Shimoyama, K. Kishio, and R. Yoshizaki
Direct Observation of a Flux Line Lattice Field Distribution across an $YBa_2Cu_3O_{7-\delta}$ surface by Low Energy Muons 3932
Ch. Niedermayer, E. M. Forgan, H. Glückler, A. Hofer, E. Morenzoni, M. Pleines, T. Prokscha, T. M. Riseman, M. Birke, T. J. Jackson, J. Litterst, M. W. Long, H. Luetkens, A. Schatz, and G. Schatz
Intracell Changes in Epitaxially Strained $YBa_2Cu_3O_{7-x}$ Ultrathin Layers in $YBa_2Cu_3O_{7-x}/PrBa_2Cu_3O_7$ Superlattices 3936
M. Varela, Z. Sefrioui, D. Arias, M. A. Navacerrada, M. Lucía, M. A. López de la Torre, C. León, G. D. Loos, F. Sánchez-Quesada, and J. Santamaría
Diffuse Phase Transition and Phase Separation in Cr-Doped $Nd_{1/2}Ca_{1/2}MnO_3$: A Relaxor Ferromagnet 3940
T. Kimura, Y. Tomioka, R. Kumai, Y. Okimoto, and Y. Tokura
Designing Emissive Conjugated Polymers with Small Optical Gaps: A Step Towards Organic Polymeric Infrared Lasers 3944
Alok Shukla and Sumit Mazumdar
Threshold for Potential Sputtering of LiF 3948
G. Hayderer, M. Schmid, P. Varga, H P. Winter, F. Aumayr, L. Wirtz, C. Lemell, J. Burgdörfer, L. Hägg, and C. O. Reinhold

Interdisciplinary Physics: Biological Physics, Quantum Information, etc.

Multifractal Scaling in the Bak-Tang-Wiesenfeld Sandpile and Edge Events 3952
Claudio Tebaldi, Mario De Menech, and Attilio L. Stella
Braided Rivers and Superconducting Vortex Avalanches 3956
Kevin E. Bassler, Maya Paczuski, and George F. Reiter
Understanding Depletion Forces beyond Entropy 3960
C. Bechinger, D. Rudhardt, P. Leiderer, R. Roth, and S. Dietrich
Memory in an Excitable Medium: A Mechanism for Spiral Wave Breakup in the Low-Excitability Limit 3964
Flavio H. Fenton, Steven J. Evans, and Harold M. Hastings

Comments

Comment on "Tunneling Spectroscopy in AlNiCo Decagonal Quasicrystals" 3968
C. Berger, D. Mayou, T. Grenet, and Z. Ovadyahu
Li Guohong *et al.* Reply 3969
Li Guohong, He Haifeng, Wang Yunping, Lu Li, Li Shanlin, Jing Xiunian, and Zhang Dianlin

(Continued on Preceding Page)

Contents (Continued)

Comment on "*Ab Initio* Calculation of Excitonic Effects in the Optical Spectra of Semiconductors" 3970
M. Cardona, L. F. Lastras-Martínez, and D. E. Aspnes
Albrecht *et al.* Reply 3971
Stefan Albrecht, Lucia Reining, Giovanni Onida, Valerio Olevano, and Rodolfo Del Sole

Errata

Erratum: New Two-Loop Contribution to Electric Dipole Moments in Supersymmetric Theories [Phys. Rev. Lett. **82**, 900 (1999)] 3972
Darwin Chang, Wai-Yee Keung, and Apostolos Pilaftsis