NEWSPAPER 78

PHYSICAL REVIEW LETTERS

Contents

VOLUME 78, NUMBER 1 6 January 1997

General Physics

Rayleigh-Ritz Calculation of Effective Potential Far from Equilibrium 1
Francis J. Alexander and Gregory L. Eyink

Demonstration of the Casimir Force in the 0.6 to 6 μm Range 5
S. K. Lamoreaux

Elementary Particles and Fields

Two-Loop Renormalization in Coulomb Gauge QED 9
Gregory S. Adkins, Plamen M. Mitrikov, and Richard N. Fell

Parity Doublets in Quark Physics 13
A. P. Balachandran and S. Vaidya

First Measurement of the Left-Right Charge Asymmetry in Hadronic Z Boson Decays and a New Determination of $\sin^2 \theta_W^{\text{eff}}$ 17
K. Abe *et al.* (SLD Collaboration)

On the Dalitz Plot Approach in Nonleptonic Charm Meson Decays 22
I. Bediaga, C. Göbel, and R. Méndez–Galain

Nuclear Physics

Relativistic Calculation of the Triton Binding Energy and Its Implications 26
Alfred Stadler and Franz Gross

Is Fusion Inhibited for Weakly Bound Nuclei? 30
J. Takahashi, M. Munhoz, E. M. Szanto, N. Carlin, N. Added, A. A. P. Suaide, M. M. de Moura, R. Liguori Neto, A. Szanto de Toledo, and L. F. Canto

Atomic, Molecular, and Optical Physics

Cascaded Amplifying Quantum Optical Taps: A Robust Noiseless Optical Bus 34
K. Bencheikh, C. Simonneau, and J. A. Levenson

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, Etc.

Molecular-Field-Enhanced Optical Kerr Effect in Absorbing Liquids 38
D. Paparo, L. Marrucci, G. Abbate, E. Santamato, M. Kreuzer, P. Lehnert, and T. Vogeler

Dye-Induced Enhancement of Optical Nonlinearity in Liquids and Liquid Crystals 42
R. Muenster, M. Jarasch, X. Zhuang, and Y. R. Shen

Macroscopic Size Effects in Second Harmonic Generation from Si(111) Coated by Thin Oxide Films: The Role of Optical Casimir Nonlocality 46
O. A. Aktsipetrov, A. A. Fedyanin, E. D. Mishina, A. A. Nikulin, A. N. Rubtsov, C. W. van Hasselt, M. A. C. Devillers, and Th. Rasing

Bulk Segregation in Rotated Granular Material Measured by Magnetic Resonance Imaging 50
K. M. Hill, A. Caprihan, and J. Kakalios

Symbolic Analysis of Chaotic Signals and Turbulent Fluctuations 54
M. Lehrman, A. B. Rechester, and R. B. White

(Continued on Third Cover)

CODEN: PRLTAO 78 (1), 1–162 (6 January 1997)

Contents (Continued)

Plasma and Beam Physics

Observation of Spherical Focus in an Electron Penning Trap 58
T. B. Mitchell, M. M. Schauer, and D. C. Barnes

Increased Confinement and β by Inductive Poloidal Current Drive in the Reversed Field Pinch 62
J. S. Sarff, N. E. Lanier, S. C. Prager, and M. R. Stoneking

Periodic Microwave Spikes from a Magnetic-Field-Free Hollow-Cathode Discharge 66
D. Arbel, Z. Bar-Lev, J. Felsteiner, A. Rosenberg, and Ya. Z. Slutsker

Condensed Matter: Structure, Etc.

Shear Flow Induced Transition from Liquid-Crystalline to Polymer Behavior in Side-Chain Liquid Crystal Polymers 70
L. Noirez and A. Lapp

Di-Carbon Defects in Annealed Highly Carbon Doped GaAs 74
J. Wagner, R. C. Newman, B. R. Davidson, S. P. Westwater, T. J. Bullough, T. B. Joyce, C. D. Latham, R. Jones, and S. Öberg

An Einstein Model of Brittle Crack Propagation 78
Brad Lee Holian, Raphael Blumenfeld, and Peter Gumbsch

Quantitative Assessment of the Effects of Orientational and Positional Disorder on Glassy Dynamics 82
M. A. Ramos, S. Vieira, F. J. Bermejo, J. Dawidowski, H. E. Fischer, H. Schober, M. A. González, C. K. Loong, and D. L. Price

Stable Spin Precession at One Half of Equilibrium Magnetization in Superfluid ^{3}He-*B* 86
V. V. Dmitriev, I. V. Kosarev, M. Krusius, D. V. Ponarin, V. M. H. Ruutu, and G. E. Volovik

Interfacial Coarsening in Epitaxial Growth Models without Slope Selection 90
Leonardo Golubović

Discrete Row Growth at Vicinal Surfaces 94
Vittorio Marsico, Martial Blanc, Klaus Kuhnke, and Klaus Kern

Equivalent Step Structures along Inequivalent Crystallographic Directions on Halogen-Terminated Si(111)-(1 $\times$ 1) Surfaces 98
B. S. Itchkawitz, M. T. McEllistrem, and John J. Boland

Chemical Self-Organization During Crystal Growth 102
F. Ducastelle and P. Quémerais

Condensed Matter: Electronic Properties, Etc.

Anisotropy of the Electron and Hole Drift Mobility in $KNbO_3$ and $BaTiO_3$ 106
Pietro Bernasconi, Ivan Biaggio, Marko Zgonik, and Peter Günter

Dynamics of Electrons in Graded Semiconductors 110
Michael R. Geller

Size Dependence in the Disordered Kondo Problem 114
Ivar Martin, Yi Wan, and Philip Phillips

High Temperature Superconductivity in Metallic Hydrogen: Electron-Electron Enhancements 118
C. F. Richardson and N. W. Ashcroft

Observation of the Transverse Force on Moving Vortices in YBCO Films 122
X.-M. Zhu, E. Brändström, and B. Sundqvist

Weakly Coupled Antiferromagnetic Quantum Spin Chains 126
Ziqiang Wang

Novel Pr-Cu Magnetic Phase at Low Temperature in $PrBa_2Cu_3O_{6+x}$ Observed by Neutron Diffraction 130
A. T. Boothroyd, A. Longmore, N. H. Andersen, E. Brecht, and Th. Wolf

Periodic Enhancement of the Electron-Electron Interactions and the Magnetoresistance in Magnetic Co/(Cr/Ag)/Co Multilayers 134
F. G. Aliev, E. Kunnen, K. Temst, K. Mae, G. Verbanck, J. Barnas, V. V. Moshchalkov, and Y. Bruynseraede

Anomalous Sputtering Behavior Observed by Quantitative Measurements of the Population Partition of Metastable Ni Atoms 138
E. Vandeweert, V. Philipsen, W. Bouwen, P. Thoen, H. Weidele, R. E. Silverans, and P. Lievens

(Continued on Preceding Page)

Contents (Continued)

Angle-Resolved Resonant Photoemission as a Probe of Spatial Localization and Character of Electron States 142
S. L. Molodtsov, M. Richter, S. Danzenbächer, S. Wieling, L. Steinbeck, and C. Laubschat

Cross-Disciplinary Physics

Electron Transport in Disordered Polymeric and Biological Systems 146
Vijay S. Pande and José Nelson Onuchic

Interactions in Micellar Solutions of β-Casein 150
E. Leclerc and P. Calmettes

Localized Dynamic Light Scattering: Probing Single Particle Dynamics at the Nanoscale 154
R. Bar-Ziv, A. Meller, T. Tlusty, E. Moses, J. Stavans, and S. A. Safran

Comments

Comment on "Cs-Induced Relaxation of the Cu(110) Surface" 158
A. C. Egsgaard Madsen, P. Stoltze, K. W. Jacobsen, and J. K. Nørskov

Schuster and Robinson Reply 159
R. Schuster and I. K. Robinson

Comment on "Quantum Monte Carlo Evidence for Superconductivity in the Three-Band Hubbard Model in Two Dimensions" 160
H. Endres, W. Hanke, H. G. Evertz, and F. F. Assaad

Kuroki and Aoki Reply 161
Kazuhiko Kuroki and Hideo Aoki

Errata

Electronic Structure Calculations for $YBa_2Cu_3O_7$ within the Slave Boson Formalism [Phys. Rev. Lett. **77**, 4066 (1996)] 162
M. Biagini

Information for Contributors ..... Front of issue