



Surface topography (left) and derivative (right) for deliberately rough heterostructure surface. See article 126803.

PHYSICAL REVIEW LETTERS

Contents

VOLUME 87, NUMBER 12

17 September 2001

General Physics

BEC Transition Temperature of a Dilute Homogeneous Imperfect Bose Gas	120401
Peter Arnold and Guy Moore	
Critical Temperature Shift in Weakly Interacting Bose Gas	120402
V. A. Kashurnikov, N. V. Prokof'ev, and B. V. Svistunov	
Nonanalytic Dependence of the Transition Temperature of the Homogeneous Dilute Bose Gas on Scattering Length	120403
Markus Holzmann, Gordon Baym, Jean-Paul Blaizot, and Franck Laloë	
Casimir Interaction among Objects Immersed in a Fermionic Environment	120404
Aurel Bulgac and Andreas Wirzba	
Quantum Phases of Vortices in Rotating Bose-Einstein Condensates	120405
N. R. Cooper, N. K. Wilkin, and J. M. F. Gunn	
Resonance Superfluidity in a Quantum Degenerate Fermi Gas	120406
M. Holland, S. J. J. M. F. Kokkelmans, M. L. Chiofalo, and R. Walser	
Monopoles in an Antiferromagnetic Bose-Einstein Condensate	120407
H. T. C. Stoof, E. Vliegen, and U. Al Khawaja	

Gravitation and Astrophysics

Ruling Out Chaos in Compact Binary Systems	121101
J. D. Schnittman and F. A. Rasio	
Initial Data for Two Kerr-like Black Holes	121102
Sergio Dain	
Plunge Waveforms from Inspiralling Binary Black Holes	121103
J. Baker, B. Brügmann, M. Campanelli, C. O. Lousto, and R. Takahashi	
Dynamical Initial Conditions in Quantum Cosmology	121301
Martin Bojowald	

Elementary Particles and Fields

Production of a Higgs Boson Accompanied by Two Jets Via Gluon Fusion	122001
V. Del Duca, W. Kilgore, C. Oleari, C. Schmidt, and D. Zeppenfeld	

Nuclear Physics

Coulomb Energy Differences in $T = 1$ Mirror Rotational Bands in ^{50}Fe and ^{50}Cr	122501
S. M. Lenzi <i>et al.</i>	
Dipole Excitation of α Clusters in ^6Li and ^7Li	122502
S. Nakayama, T. Yamagata, H. Akimune, I. Daito, H. Fujimura, Y. Fujita, M. Fujiwara, K. Fushimi, M. B. Greenfield, H. Kohri, N. Koori, K. Takahisa, A. Tamii, M. Tanaka, and H. Toyokawa	

Atomic, Molecular, and Optical Physics

Complete Measurement of $S(^1D_2)$ Photofragment Alignment from Abel-Invertible Ion Images	123001
T. Peter Rakitzis, Peter C. Samartzis, and Theofanis N. Kitsopoulos	

(Continued on Third Cover)

PRL 87 (12), 120401–129802, 17 September 2001 (312 total pages)

Contents (Continued)

Doppler Cooling and Trapping on Forbidden Transitions	123002
T. Binnewies, G. Wilpers, U. Sterr, F. Riehle, J. Helmcke, T.E. Mehlstäubler, E.M. Rasel, and W. Ertmer	
Boundary Conditions for the Pauli Equation: Application to Photodetachment of Cs^-	123003
C. Bahrim, I.I. Fabrikant, and U. Thumm	
Dynamical Relativistic Effects in Photoionization: Spin-Orbit-Resolved Angular Distributions of Xenon $4d$ Photoelectrons near the Cooper Minimum	123004
H. Wang, G. Snell, O. Hemmers, M.M. Sant'Anna, I. Sellin, N. Berrah, D.W. Lindle, P.C. Deshmukh, N. Haque, and S.T. Manson	
Fraunhofer Diffraction of Atomic Matter Waves: Electron Transfer Studies with a Laser Cooled Target	123201
M. van der Poel, C.V. Nielsen, M.-A. Gearba, and N. Andersen	
Recoil Momentum Spectroscopy of Highly Charged Ion Collisions on Magneto-Optically Trapped Na	123202
J.W. Turkstra, R. Hoekstra, S. Knoop, D. Meyer, R. Morgenstern, and R.E. Olson	
Kinematically Complete Charge Exchange Experiment in the $\text{Cs}^+ + \text{Rb}$ Collision System Using a MOT Target	123203
X. Flechard, H. Nguyen, E. Wells, I. Ben-Itzhak, and B.D. DePaola	
Observation of a $1/t$ Decay Law for Hot Clusters and Molecules in a Storage Ring	123401
K. Hansen, J.U. Andersen, P. Hvelplund, S.P. Møller, U.V. Pedersen, and V.V. Petrunin	
Squeezed Light from Spin-Squeezed Atoms	123601
Uffe V. Poulsen and Klaus Mølmer	
Role of Entanglement in Two-Photon Imaging	123602
Ayman F. Abouraddy, Bahaa E.A. Saleh, Alexander V. Sergienko, and Malvin C. Teich	
Nonlinear Optics with Less Than One Photon	123603
K.J. Resch, J.S. Lundeen, and A.M. Steinberg	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Revivals and Oscillations of the Momentum of Light in a Planar Multimode Waveguide	123901
Yuri B. Ovchinnikov and Tilman Pfau	
Computational Aberration Correction for an Arbitrary Linear Imaging System	123902
L.J. Allen, M.P. Oxley, and D. Paganin	
Nonstationary Time-Series Analysis: Accurate Reconstruction of Driving Forces	124101
P.F. Verdes, P.M. Granitto, H.D. Navone, and H.A. Ceccatto	
Inverse Statistics of Smooth Signals: The Case of Two Dimensional Turbulence	124501
L. Biferale, M. Cencini, A. Lanotte, D. Vergni, and A. Vulpiani	
Plasma and Beam Physics	
Experimental Determination of Critical Threshold in Electron Transport on Tore Supra	125001
G.T. Hoang, C. Bourdelle, X. Garbet, G. Giruzzi, T. Aniel, M. Ottaviani, W. Horton, P. Zhu, and R.V. Budny	
Condensed Matter: Structure, etc.	
Pressure-Induced Quenching of the Jahn-Teller Distortion and Insulator-to-Metal Transition in LaMnO_3	125501
I. Loa, P. Adler, A. Grzechnik, K. Syassen, U. Schwarz, M. Hanfland, G.Kh. Rozenberg, P. Gorodetsky, and M.P. Pasternak	
Smallest Nanotube: Breaking the Symmetry of sp^3 Bonds in Tubular Geometries	125502
Dragan Stojkovic, Peihong Zhang, and Vincent H. Crespi	
Roughness of Crack Interfaces in Two-Dimensional Beam Lattices	125503
Bjørn Skjeltne, Torbjørn Helle, and Alex Hansen	
Bonse-Hart Angular Profiles Realized for Multiply Bragg Reflected Neutrons	125504
Apoorva G. Wagh, Veer Chand Rakhecha, and Wolfgang Treimer	
Effects of Surface Roughness on Self- and Transport Diffusion in Porous Media in the Knudsen Regime	125505
Kourosh Malek and Marc-Olivier Coppens	
Anisotropic Interactions of Hydrogen Molecules from the Pressure Dependence of the Rotational Spectrum in the $\text{Ar}(\text{H}_2)_2$ Compound	125506
Francesco Grazzi, Mario Santoro, Massimo Moraldi, and Lorenzo Ulivi	

(Continued on Preceding Page)

Contents (Continued)

Binary Separation in Very Thin Nematic Films: Thickness and Phase Coexistence	125701
D. van Effenterre, R. Ober, M.P. Valignat, and A.M. Cazabat	
Anisotropic Scaling and Generalized Conformal Invariance at Lifshitz Points	125702
Michel Pleimling and Malte Henkel	
Hexatic Order and Surface Ripples in Spherical Geometries	125703
Peter Lenz and David R. Nelson	
Ge Self-Diffusion in Epitaxial $\text{Si}_{1-x}\text{Ge}_x$ Layers	125901
N.R. Zangenberg, J. Lundsgaard Hansen, J. Fage-Pedersen, and A. Nylandsted Larsen	
Closing the Gap between Experiment and Theory: Crystal Growth by Temperature Accelerated Dynamics	126101
F. Montalenti, M.R. Sørensen, and A.F. Voter	
Adsorption-Induced Step Formation	126102
P. Thosttrup, E. Christoffersen, H.T. Lorensen, K.W. Jacobsen, F. Besenbacher, and J.K. Nørskov	
Self-Assembly of Two-Dimensional Islands via Strain-Mediated Coarsening	126103
Feng Liu, Adam H. Li, and M.G. Lagally	
Condensed Matter: Electronic Properties, etc.	
Negative Resistance and Local Charge-Density-Wave Dynamics	126401
H.S.J. van der Zant, E. Slot, S.V. Zaitsev-Zotov, and S.N. Artemenko	
Exact Results for the Crossover from Gaussian to Non-Gaussian Order Parameter Fluctuations in Quasi-One-Dimensional Electronic Systems	126402
Hartmut Monien	
Polarity Inversion in Polar-Nonpolar-Polar Heterostructures	126403
Sunglae Cho, Suk J. Youn, Yunki Kim, Antonio DiVenere, George K.L. Wong, Authur J. Freeman, and J.B. Ketterson	
Nature of Charge Carriers in Disordered Molecular Solids: Are Polarons Compatible with Observations?	126601
P.E. Parris, V.M. Kenkre, and D.H. Dunlap	
Quantum Loop Current in a C_{60} Molecular Bridge	126801
Shousuke Nakanishi and Masaru Tsukada	
Metallic Behavior in Dilute Two-Dimensional Hole Systems	126802
A.R. Hamilton, M.Y. Simmons, M. Pepper, E.H. Linfield, and D.A. Ritchie	
Anisotropic Disorder in High-Mobility 2D Heterostructures and Its Correlation to Electron Transport	126803
R.L. Willett, J.W.P. Hsu, D. Natelson, K.W. West, and L.N. Pfeiffer	
Coulomb Blockade of Tunneling between Disordered Conductors	126804
Jörg Rollbühler and Hermann Grabert	
Quasiclassical Negative Magnetoresistance of a 2D Electron Gas: Interplay of Strong Scatterers and Smooth Disorder	126805
A.D. Mirlin, D.G. Polyakov, F. Evers, and P. Wölfle	
Evidence for Strong-Coupling s -Wave Superconductivity in MgB_2 : ^{11}B NMR Study	127001
H. Kotegawa, K. Ishida, Y. Kitaoka, T. Muranaka, and J. Akimitsu	
Observation of Two-Magnon Bound States in the Two-Leg Ladders of $(\text{Ca}, \text{La})_{14}\text{Cu}_{24}\text{O}_{41}$	127002
M. Windt, M. Grüninger, T. Nunner, C. Knetter, K.P. Schmidt, G.S. Uhrig, T. Kopp, A. Freimuth, U. Ammerahl, B. Büchner, and A. Revcolevschi	
Strong Enhancement of Superconducting T_c in Ferromagnetic Phases	127003
T.R. Kirkpatrick, D. Belitz, Thomas Vojta, and R. Narayanan	
Critical State Theory for Nonparallel Flux Line Lattices in Type-II Superconductors	127004
A. Badía and C. López	
Loss of Superconducting Phase Coherence in $\text{YBa}_2\text{Cu}_3\text{O}_7$ Films: Vortex-Loop Unbinding and Kosterlitz-Thouless Phenomena	127005
Jürgen Kötzler, Detlef Görlitz, Sven Skwirblies, and Axel Wriedt	
Parity-Forbidden Excitations of $\text{Sr}_2\text{CuO}_2\text{Cl}_2$ Revealed by Optical Third-Harmonic Spectroscopy	127006
A.B. Schumacher, J.S. Dodge, M.A. Carnahan, R.A. Kaindl, D.S. Chemla, and L.L. Miller	
Atomic-Scale Magnetic Domain Walls in Quasi-One-Dimensional Fe Nanostripes	127201
M. Pratzer, H.J. Elmers, M. Bode, O. Pietzsch, A. Kubetzka, and R. Wiesendanger	

(Continued on Preceding Page)

Contents (Continued)

Zero-Magnetization Ferromagnet Proven by Helicity-Switching Compton Scattering	127202
H. Adachi, H. Kawata, H. Hashimoto, Y. Sato, I. Matsumoto, and Y. Tanaka	
Two-Stage Spin-Flop Transitions in the $S = 1/2$ Antiferromagnetic Spin Chain $\text{BaCu}_2\text{Si}_2\text{O}_7$	127203
I. Tsukada, J. Takeya, T. Masuda, and K. Uchinokura	
High Resolution Study of Permanent Photoinduced Reflectivity Changes and Charge-Order Domain Switching in $\text{Bi}_{0.3}\text{Ca}_{0.7}\text{MnO}_3$	127204
I. I. Smolyaninov, V. N. Smolyaninova, C. C. Davis, B.-G. Kim, S.-W. Cheong, and R. L. Greene	
Non-Gaussian Noise in Quantum Spin Glasses and Interacting Two-Level Systems	127205
A. K. Nguyen and S. M. Girvin	
Ultralow Polaron Dynamics in Low-Doped Manganites from ^{139}La NMR-NQR and Muon Spin Rotation	127206
G. Allodi, M. Cestelli Guidi, R. De Renzi, A. Caneiro, and L. Pinsard	
High-Temperature Electron Paramagnetic Resonance in Magnets with the Dzyaloshinskii-Moriya Interaction	127207
J. Choukroun, J.-L. Richard, and A. Stepanov	
Rigorous Results for a Hierarchy of Generalized Heisenberg Models	127208
You-Quan Li	
Exact Solutions for Diluted Spin Glasses and Optimization Problems	127209
Silvio Franz, Michele Leone, Federico Ricci-Tersenghi, and Riccardo Zecchina	
Polarized Absorption Spectra of Single-Walled 4 Å Carbon Nanotubes Aligned in Channels of an AlPO_4 -5 Single Crystal	127401
Z. M. Li, Z. K. Tang, H. J. Liu, N. Wang, C. T. Chan, R. Saito, S. Okada, G. D. Li, J. S. Chen, N. Nagasawa, and S. Tsuda	
Magnetotransverse Scattering of Surface Plasmon Polaritons	127402
G. Duchs, G. L. J. A. Rikken, T. Grenet, and P. Wyder	
Parametric Polariton Amplification in Semiconductor Microcavities	127403
G. Messin, J. Ph. Karr, A. Baas, G. Khitrova, R. Houdré, R. P. Stanley, U. Oesterle, and E. Giacobino	
Surface Temperature Dependence of Rotational Excitation of H_2 Scattered from $\text{Pd}(111)$	127601
H. F. Busnengo, W. Dong, P. Sautet, and A. Salin	
Interdisciplinary Physics: Biological Physics, Quantum Information, etc.	
Light-Shift-Induced Quantum Gates for Ions in Thermal Motion	127901
Daniel Jonathan and Martin B. Plenio	
Active Fusion and Fission Processes on a Fluid Membrane	128101
Madan Rao and Sarasij R. C.	
Emergence of Taxis and Synergy in Angiogenesis	128102
B. Capogrosso Sansone, M. Scalerandi, and C. A. Condat	
Comments	
Comment on “Hole-Burning Experiments within Glassy Models with Infinite Range Interactions”	129601
R. V. Chamberlin and R. Richert	
Comment on “Hole-Burning Experiments within Glassy Models with Infinite Range Interactions”	129602
Gregor Diezemann and Roland Böhmer	
Cugliandolo and Iguain Reply	129603
Leticia F. Cugliandolo and José Luis Iguain	
Comment on “Scaling of the Conductivity with Temperature and Uniaxial Stress in Si:B at the Metal-Insulator Transition”	129701
T. G. Castner	
Bhatt, Bogdanovich, and Sarachik Reply	129702
R. N. Bhatt, S. Bogdanovich, and M. P. Sarachik	
Comment on “Low Temperature Magnetic Instabilities in Triply Charged Fulleride Polymers”	129703
Ferenc Simon, Slaven Garaj, and László Forró	
Arčon <i>et al.</i> Reply	129704
D. Arčon, K. Prassides, A. L. Maniero, and L. C. Brunel	
Comment on “Quantum Clock Synchronization Based on Shared Prior Entanglement”	129801
Eric A. Burt, Christopher R. Ekstrom, and Thomas B. Swanson	
Jozsa <i>et al.</i> Reply	129802
Richard Jozsa, Danial S. Abrams, Jonathan P. Dowling, and Colin P. Williams	