

Channel electron distribution of a helical gold nanowire sandwiched between electrodes. Calculations show that such wires can be good candidates for nanometer-scale solenoids. See article 206806.

PHYSICAL REVIEW LETTERS

Contents

Articles published 21 May–27 May 2005

VOLUME 94, NUMBER 20 27 May 2005

General Physics: Statistical and Quantum Mechanics, Quantum Information, etc.

Quantum Multimode Model of Elastic Scattering from Bose-Einstein Condensates 200401
P. Ziń, J. Chwedeńczuk, A. Veitia, K. Rzążewski, and M. Trippenbach

Ultracold Collisions Involving Heteronuclear Alkali Metal Dimers 200402
Marko T. Cvitaš, Pavel Soldán, Jeremy M. Hutson, Pascal Honvault, and Jean-Michel Launay

Multiple-Time Correlation Functions for Non-Markovian Interaction: Beyond the Quantum Regression Theorem 200403
Daniel Alonso and Inés de Vega

Locking Entanglement with a Single Qubit 200501
Karol Horodecki, Michał Horodecki, Paweł Horodecki, and Jonathan Oppenheim

High-Temperature Expansion for Nonequilibrium Steady States in Driven Lattice Gases 200601
Raphael Lefevere and Hal Tasaki

Phase Transition with the Berezinskii-Kosterlitz-Thouless Singularity in the Ising Model on a Growing Network 200602
M. Bauer, S. Coulomb, and S. N. Dorogovtsev

Gravitation and Astrophysics

Constraining Nuclear Equations of State Using Gravitational Waves from Hypermassive Neutron Stars 201101
Masaru Shibata

The Flatness Problem and Λ 201102
Kayll Lake

Elementary Particles and Fields

Hadronic Spectrum of a Holographic Dual of QCD 201601
Guy F. de Téramond and Stanley J. Brodsky

Chiral Symmetry Breaking and the Dirac Spectrum at Nonzero Chemical Potential 202001
J. C. Osborn, K. Splittorff, and J. J. Verbaarschot

First Measurement of the Transverse Spin Asymmetries of the Deuteron in Semi-inclusive Deep Inelastic Scattering 202002
V. Yu. Alexakhin *et al.* (COMPASS Collaboration)

Nuclear Physics

Interpretation of Correlations between Nuclear Observables in Rare-Earth Nuclei 202501
B. Buck, A. C. Merchant, and S. M. Perez

Fully Coupled Channel Approach to Doubly Strange *s*-Shell Hypernuclei 202502
H. Nemura, S. Shinmura, Y. Akaishi, and Khin Swe Myint

The Complement: A Solution to Liquid Drop Finite Size Effects in Phase Transitions 202701
L. G. Moretto, K. A. Bugaev, J. B. Elliott, R. Ghetti, J. Helgesson, and L. Phair

Atomic, Molecular, and Optical Physics

Optical Production of Ultracold Polar Molecules 203001
Jeremy M. Sage, Sunil Sainis, Thomas Bergeman, and David DeMille

(Continued on Third Cover)

Copyright 2005 by The American Physical Society

0031-9007(20050527)94:20;1-S

Suppression of Spin Projection Noise in Broadband Atomic Magnetometry 203002
JM Geremia, John K. Stockton, and Hideo Mabuchi
Phase Dependence of Enhanced Ionization in Asymmetric Molecules 203003
G. Lagmago Kamta and A. D. Bandrauk
State-Selective Quantum Interference Observed in the Recombination of Highly Charged $Hg^{75+\cdots78+}$ Mercury Ions in an Electron Beam Ion Trap 203201
A. J. González Martínez, J. R. López-Urrutia, J. Braun, G. Brenner, H. Bruhns, A. Lapierre, V. Mironov, R. Soria Orts, H. Tawara, M. Trinczek, J. Ullrich, and J. H. Scofield
Application of Radiative Electron Capture for the Diagnostics of Spin-Polarized Ion Beams at Storage Rings 203202
Andrey Surzhykov, Stephan Fritzsche, Thomas Stöhlker, and Stanislav Tashenov
Photon Number Squeezing of Ultrabroadband Laser Pulses Generated by Microstructure Fibers 203601
Kenichi Hirosawa, Hiroto Furumochi, Atsushi Tada, Fumihiko Kannari, Masahiro Takeoka, and Masahide Sasaki

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Three-Dimensional Nonlinear Lattices: From Oblique Vortices and Octupoles to Discrete Diamonds and Vortex Cubes 203901
R. Carretero-González, P. G. Kevrekidis, B. A. Malomed, and D. J. Frantzeskakis
Explanation of the Inverse Doppler Effect Observed in Nonlinear Transmission Lines 203902
Alexander B. Kozyrev and Daniel W. van der Weide
Dynamics of Periodic Pulse Collisions in a Strongly Dissipative-Dispersive System 203903
Vincent Roy, Michel Olivier, François Babin, and Michel Piché
Long-Distance Frequency Dissemination with a Resolution of 10^{-17} 203904
C. Daussy, O. Lopez, A. Amy-Klein, A. Goncharov, M. Guinet, C. Chardonnet, F. Narbonneau, M. Lours, D. Chambon, S. Bize, A. Clairon, G. Santarelli, M. E. Tobar, and A. N. Luiten
Heavy Photon States in Photonic Chains of Resonantly Coupled Cavities with Supermonodispersive Microspheres 203905
Yoshiko Hara, Takashi Mukaiyama, Kenji Takeda, and Makoto Kuwata-Gonokami
Nonlocality in Imaging 203906
M. P. Oxley, E. C. Cosgriff, and L. J. Allen
Complex Oscillations and Chaos in Electrostatic Microelectromechanical Systems under Superharmonic Excitations 204101
Sudipto K. De and N. R. Aluru
Gravity Waves at the Interface between Miscible Fluids and at the Top of a Settling Suspension 204501
Georges Gauthier, Jérôme Martin, and Dominique Salin
Compressibility in Solar Wind Plasma Turbulence 204502
Bogdan Hnat, Sandra C. Chapman, and George Rowlands

Plasma and Beam Physics

Role of Kinetic Effects on the Polarization Current around a Magnetic Island 205001
E. Poli, A. Bergmann, and A. G. Peeters
Ion Cyclotron Production by a Four-Wave Interaction with a Helicon Pump 205002
O. Sutherland, M. Giles, and R. Boswell
Relaxation to Nonequilibrium in Expanding Ultracold Neutral Plasmas 205003
T. Pohl, T. Pattard, and J. M. Rost
Guiding of Intense Laser Pulses in Plasma Waveguides Produced from Efficient, Femtosecond End-Pumped Heating of Clustered Gases 205004
V. Kumarappan, K. Y. Kim, and H. M. Milchberg

Condensed Matter: Structure, etc.

"Work-Hardenable" Ductile Bulk Metallic Glass 205501
Jayanta Das, Mei Bo Tang, Ki Buem Kim, Ralf Theissmann, Falko Baier, Wei Hua Wang, and Jürgen Eckert
Amorphous Metallic Plastic 205502
B. Zhang, D. Q. Zhao, M. X. Pan, W. H. Wang, and A. L. Greer
Widening of Phononic Transmission Gaps via Anderson Localization 205503
R. Sainidou, N. Stefanou, and A. Modinos

(Continued on Preceding Page)

Evidence for a Magnetic Collapse in the Epsilon Phase of Solid Oxygen 205701
Igor N. Goncharenko

Condensed Matter: Electronic Properties, etc.

Electron Correlation and Fermi Surface Topology of Na_xCoO_2 206401
Sen Zhou, Meng Gao, Hong Ding, Patrick A. Lee, and Ziqiang Wang

Unified Description of Charge-Carrier Mobilities in Disordered Semiconducting Polymers 206601
W. F. Pasveer, J. Cottaar, C. Tanase, R. Coehoorn, P. A. Bobbert, P. W. Blom, D. M. de Leeuw, and M. A. Michels

Zitterbewegung of Electronic Wave Packets in III-V Zinc-Blende Semiconductor Quantum Wells 206801
John Schliemann, Daniel Loss, and R. M. Westervelt

Supersymmetric Quantum-Hall Effect on a Fuzzy Supersphere 206802
Kazuki Hasebe

Direct Measurement of Quantum Confinement Effects at Metal to Quantum-Well Nanocontacts 206803
C. Tivarus, J. P. Pelz, M. K. Hudait, and S. A. Ringel

Franck-Condon Blockade and Giant Fano Factors in Transport through Single Molecules 206804
Jens Koch and Felix von Oppen

Cotunneling-Mediated Transport through Excited States in the Coulomb-Blockade Regime 206805
R. Schleser, T. Ihn, E. Ruh, K. Ensslin, M. Tews, D. Pfannkuche, D. C. Driscoll, and A. C. Gossard

First-Principles Study of Electron-Conduction Properties of Helical Gold Nanowires 206806
Tomoya Ono and Kikuji Hirose

Scaling and Universality of Integer Quantum Hall Plateau-to-Plateau Transitions 206807
Wanli Li, G. A. Csáthy, D. C. Tsui, L. N. Pfeiffer, and K. W. West

Optical Experimental Evidence for a Universal Length Scale for the Dynamic Charge Inhomogeneity of Cuprate Superconductors 207001
D. Mihailovic

Evidence for Line Nodes in the Superconducting Energy Gap of Noncentrosymmetric $CePt_3Si$ from Magnetic Penetration Depth Measurements 207002
Ismardo Bonalde, Werner Brämer-Escamilla, and Ernst Bauer

Momentum Dependence of Charge Excitations in the Electron-Doped Superconductor $Nd_{1.85}Ce_{0.15}CuO_4$: A Resonant Inelastic X-Ray Scattering Study 207003
K. Ishii, K. Tsutsui, Y. Endoh, T. Tohyama, S. Maekawa, M. Hoesch, K. Kuzushita, M. Tsubota, T. Inami, J. Mizuki, Y. Murakami, and K. Yamada

Magic Doping Fractions for High-Temperature Superconductors 207004
Seiki Komiya, Han-Dong Chen, Shou-Cheng Zhang, and Yoichi Ando

Mn Distribution and Spin Polarization in $Ga_{1-x}Mn_xAs$ 207201
Ruqian Wu

Supersolids versus Phase Separation in Two-Dimensional Lattice Bosons 207202
Pinaki Sengupta, Leonid P. Pryadko, Fabien Alet, Matthias Troyer, and Guido Schmid

Metamagnetic Phase Transition of the Antiferromagnetic Heisenberg Icosahedron 207203
Christian Schröder, Heinz-Jürgen Schmidt, Jürgen Schnack, and Marshall Luban

Zero-Temperature Criticality in the Two-Dimensional Gauge Glass Model 207204
Lei-Han Tang and Peiqing Tong

Possible Quantum Critical Point in $La_{2/3}Ca_{1/3}Mn_{1-x}Ga_xO_3$ 207205
J. M. De Teresa, P. A. Algarabel, C. Ritter, J. Blasco, M. R. Ibarra, L. Morellon, J. I. Espeso, and J. C. Gómez-Sal

Cooperative Density Wave and Giant Spin Gap in the Quarter-Filled Zigzag Electron Ladder 207206
R. T. Clay and S. Mazumdar

Analytic Relations between Localizable Entanglement and String Correlations in Spin Systems 207207
L. Campos Venuti and M. Roncaglia

Molecular Engineering of Antiferromagnetic Rings for Quantum Computation 207208
F. Troiani, A. Ghirri, M. Affronte, S. Carretta, P. Santini, G. Amoretti, S. Piligkos, G. Timco, and R. E. Winpenny

(Continued on Preceding Page)

Method for Analyzing Second-Order Phase Transitions: Application to the Ferromagnetic Transition of a Polaronic System 207209
J. A. Souza, Yi-Kuo Yu, J. J. Neumeier, H. Terashita, and R. F. Jardim
Spin-Dependent Resonant Tunneling through Quantum-Well States in Magnetic Metallic Thin Films 207210
Zhong-Yi Lu, X.-G. Zhang, and Sokrates T. Pantelides
Deroughening of Domain Wall Pairs by Dipolar Repulsion 207211
M. Bauer, A. Mougin, J. P. Jamet, V. Repain, J. Ferré, R. L. Stamps, H. Bernas, and C. Chappert
Intersubband Exciton Relaxation Dynamics in Single-Walled Carbon Nanotubes 207401
C. Manzoni, A. Gambetta, E. Menna, M. Meneghetti, G. Lanzani, and G. Cerullo
Microscale Localized Spectroscopy with a Magnetic Resonance Force Microscope 207601
C. L. Degen, Q. Lin, A. Hunkeler, U. Meier, M. Tomaselli, and B. H. Meier

Soft Matter, Biological, and Interdisciplinary Physics
Two Scenarios for Avalanche Dynamics in Inclined Granular Layers 208001
Tamás Börzsönyi, Thomas C. Halsey, and Robert E. Ecke
How White Noise Generates Power-Law Switching in Bacterial Flagellar Motors 208101
Yuhai Tu and G. Grinstein
Dynamical Arrest in Attractive Colloids: The Effect of Long-Range Repulsion 208301
Andrew I. Campbell, Valerie J. Anderson, Jeroen S. van Duijneveldt, and Paul Bartlett
Orthorhombic *Fddd* Network in Triblock and Diblock Copolymer Melts 208302
Christopher A. Tyler and David C. Morse
Comparative Study of C-H Stretch and Bend Vibrations in Methane Activation on Ni(100) and Ni(111) 208303
L. B. Juurlink, R. R. Smith, D. R. Killelea, and A. L. Utz
Adaptability and "Intermediate Phase" in Randomly Connected Networks 208701
J. Barré, A. R. Bishop, T. Lookman, and A. Saxena

Comments
Comment on "Temperature in Nonequilibrium Systems with Conserved Energy" 208901
Yair Srebro and Dov Levine
Bertin, Dauchot, and Droz Reply 208902
E. Bertin, O. Dauchot, and M. Droz
Comment on "Dynamical Role of Anyonic Excitation Statistics in Rapidly Rotating Bose Gases" 208903
Pijush K. Ghosh
Fischer Replies 208904
Uwe R. Fischer
Comment on "Thermal Contraction of Carbon Fullerenes and Nanotubes" 209701
P. Keblinski and P. K. Schelling
Kwon, Berber, and Tománek Reply 209702
Young-Kyun Kwon, Savas Berber, and David Tománek
Comment on "Momentum-Dependent Energy Losses in Core Level Photoemission Spectra of Poorly Conducting Metals" 209703
Ph. Hofmann, G. Zampieri, L. Petaccia, S. Lizzit, and A. Baraldi
Ast and Höchst Reply 209704
Christian R. Ast and Hartmut Höchst

Errata
Erratum: Control of Raman Lasing in the Nonimpulsive Regime [Phys. Rev. Lett. **92**, 243003 (2004)] 209901
B. J. Pearson and P. H. Bucksbaum
Erratum: Dirty, Skewed, and Backwards: The Smectic $A - C$ Phase Transition in Aerogel [Phys. Rev. Lett. **94**, 137803 (2005)] 209902
Leiming Chen and John Toner
Erratum: Local Observation and Spectroscopy of Optical Modes in an Active Photonic-Crystal Microcavity [Phys. Rev. Lett. **94**, 113907 (2005)] 209903
N. Louvion, D. Gérard, J. Mouette, F. de Fornel, C. Seassal, X. Letartre, A. Rahmani, and S. Callard