



Apparatus to test the Aharonov-Bohm (AB) effect by tracking a laser-extracted electron pulse as it passes between two solenoids. The absence of any time delay rules out external forces on the electron pulse, which in turn excludes semiclassical explanations of the AB effect. See article 210401.

PHYSICAL REVIEW LETTERS

Contents

Articles published 17 November–23 November 2007

VOLUME 99, NUMBER 21

23 November 2007

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

Macroscopic Test of the Aharonov-Bohm Effect	210401
Adam Caprez, Brett Barwick, and Herman Batelaan	
Strongly Resonant p -Wave Superfluids	210402
J. Levinsen, N.R. Cooper, and V. Gurarie	
Quantum Reflection and Dwell Times of Metastable States	210403
N.G. Kelkar	
Quasibound States in the Continuum in a Two Channel Quantum Wire with an Adatom	210404
Hiroaki Nakamura, Naomichi Hatano, Sterling Garmon, and Tomio Petrosky	
Bell Inequalities for Continuous-Variable Correlations	210405
E.G. Cavalcanti, C.J. Foster, M.D. Reid, and P.D. Drummond	
Experimental Test of Nonlocal Realistic Theories Without the Rotational Symmetry Assumption	210406
Tomasz Paterek, Alessandro Fedrizzi, Simon Gröblacher, Thomas Jennewein, Marek Żukowski, Markus Aspelmeyer, and Anton Zeilinger	
Experimental Falsification of Leggett's Nonlocal Variable Model	210407
Cyril Branciard, Alexander Ling, Nicolas Gisin, Christian Kurtsiefer, Antia Lamas-Linares, and Valerio Scarani	
Distribution of Time-Averaged Observables for Weak Ergodicity Breaking	210601
A. Rebenshtok and E. Barkai	
NMR Measurement of Nonlocal Dispersion in Complex Flows	210602
M.W. Hunter and P.T. Callaghan	

Gravitation and Astrophysics

Friedmann Equations and Thermodynamics of Apparent Horizons	211301
Yungui Gong and Anzhong Wang	

Elementary Particles and Fields

Search for the CP -Violating Decays $Y(4S) \rightarrow B^0 \bar{B}^0 \rightarrow J/\psi K_S^0 + J/\psi(\eta_c) K_S^0$	211601
O. Tajima <i>et al.</i> (Belle Collaboration)	
Color Screening Melts Quarkonium	211602
Ágnes Mócsy and Péter Petreczky	
Six-Quark Decays of the Higgs Boson in Supersymmetry with R -Parity Violation	211801
Linda M. Carpenter, David E. Kaplan, and Eun-Jung Rhee	
Color Transfer in Associated Heavy-Quarkonium Production	212001
Gouranga C. Nayak, Jian-Wei Qiu, and George Sterman	
Sivers Single-Spin Asymmetry in Photon-Jet Production	212002
Alessandro Bacchetta, Cedran Bomhof, Umberto D'Alesio, Piet J. Mulders, and Francesco Murgia	

(Continued Inside)

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Copyright 2007 by The American Physical Society



0031-9007(20071123)99:21;1-F

PRL 99 (21), 210401–219902, 23 November 2007 (280 total pages)

Contents (Continued)

Nuclear Physics

- Spin and Magnetic Moment of ^{33}Mg : Evidence for a Negative-Parity Intruder Ground State 212501
D.T. Yordanov, M. Kowalska, K. Blaum, M. De Rydt, K.T. Flanagan, P. Lievens, R. Neugart, G. Neyens, and H.H. Stroke

Atomic, Molecular, and Optical Physics

- Inclusion of Electric Octupole Contributions Explains the Fast Radiative Decays of Two Metastable States in Ar^+ 213001
P. Lundin, J. Gurell, L.-O. Norlin, P. Royen, S. Mannervik, P. Palmeri, P. Quinet, V. Fivet, and É. Biémont
- Photoelectric Effect at Ultrahigh Intensities 213002
A.A. Sorokin, S.V. Bobashev, T. Feigl, K. Tiedtke, H. Wabnitz, and M. Richter
- Direct Determination of the Sign of the NO Dipole Moment 213003
A. Gijsbertsen, W. Siu, M.F. Kling, P. Johnsson, P. Jansen, S. Stolte, and M.J. Vrakking
- Intensity Inversion between Main and Satellite Lines in Atomic Photoionization 213004
D. Cubaynes, S. Diehl, F.J. Wuilleumier, M. Meyer, E. Heinecke, T. Richter, and P. Zimmermann
- Water Fragmentation and Energy Loss by Carbon Ions at the Distal Region of the Bragg Peak 213201
E.C. Montenegro, M.B. Shah, H. Luna, S.W. Scully, A.L. de Barros, J.A. Wyer, and J. Lecointre
- Cavity Nonlinear Optics at Low Photon Numbers from Collective Atomic Motion 213601
Subhadeep Gupta, Kevin L. Moore, Kater W. Murch, and Dan M. Stamper-Kurn
- Geometric Resonance Cooling of Polarizable Particles in an Optical Waveguide 213602
G. Szirmai and P. Domokos

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

-  Observation of Accelerating Airy Beams 213901
G.A. Siviloglou, J. Broky, A. Dogariu, and D.N. Christodoulides
- Deconstructing Spatiotemporal Chaos Using Local Symbolic Dynamics 214101
Shawn D. Pethel, Ned J. Corron, and Erik Bollt
- Spatiotemporal Chaos of Self-Replicating Spots in Reaction-Diffusion Systems 214102
Hongli Wang and Qi Ouyang
- Mobility of Discrete Solitons in Quadratically Nonlinear Media 214103
H. Susanto, P.G. Kevrekidis, R. Carretero-González, B.A. Malomed, and D.J. Frantzeskakis
- Nanometer-Resolved Collective Micromeniscus Oscillations through Optical Diffraction 214501
Helmut Rathgen, Kazuyasu Sugiyama, Claus-Dieter Ohl, Detlef Lohse, and Frieder Mugele

Condensed Matter: Structure, etc.

- Free Volume and Finite-Size Effects in a Polymer Glass under Stress 215501
Robert A. Riggelman, Hau-Nan Lee, M.D. Ediger, and Juan J. de Pablo
- Origin of Polarity in Amorphous SrTiO_3 215502
Anatoly I. Frenkel, David Ehre, Vera Lyahovitskaya, Leah Kanner, Ellen Wachtel, and Igor Lubomirsky
- Stability and Dynamics of Frenkel Pairs in Si 215503
M.J. Beck, L. Tsetseris, and S.T. Pantelides
- Tuning Oxygen Packing in Silica by Nonhydrostatic Pressure 215504
Yunfeng Liang, Caetano R. Miranda, and Sandro Scandolo
- Correlation between Dynamic Heterogeneity and Medium-Range Order in Two-Dimensional Glass-Forming Liquids 215701
Takeshi Kawasaki, Takeaki Araki, and Hajime Tanaka
- Zero Thermal Expansion in a Nanostructured Inorganic-Organic Hybrid Crystal 215901
Y. Zhang, Z. Islam, Y. Ren, P.A. Parilla, S.P. Ahrenkiel, P.L. Lee, A. Mascarenhas, M.J. McNevin, I. Naumov, H.-X. Fu, X.-Y. Huang, and J. Li
- Block-Copolymer Ordering with a Spatiotemporally Heterogeneous Mobility 216101
August W. Bosse, Jack F. Douglas, Brian C. Berry, Ronald L. Jones, and Alamgir Karim
- What Orchestrates the Self-Assembly of Glycine Molecules on $\text{Cu}(100)$? 216102
Ken Kanazawa, Atsushi Taninaka, Osamu Takeuchi, and Hidemi Shigekawa
- Manifestation of Work Function Difference in High Order Gundlach Oscillation 216103
C.L. Lin, S.M. Lu, W.B. Su, H.T. Shih, B.F. Wu, Y.D. Yao, C.S. Chang, and Tien T. Tsong

(Continued on Preceding Page)

Contents (Continued)

Condensed Matter: Electronic Properties, etc.

Aging Effects across the Metal-Insulator Transition in Two Dimensions	216401
J. Jaroszyński and Dragana Popović	
Itinerant Ferromagnetism in the Multiorbital Hubbard Model: A Dynamical Mean-Field Study	216402
Shiro Sakai, Ryotaro Arita, and Hideo Aoki	
Phase Diagram of the One-Dimensional Half-Filled Extended Hubbard Model	216403
Satoshi Ejima and Satoshi Nishimoto	
Novel Mechanism of a Charge Density Wave in a Transition Metal Dichalcogenide	216404
D.W. Shen, B.P. Xie, J.F. Zhao, L.X. Yang, L. Fang, J. Shi, R.H. He, D.H. Lu, H.H. Wen, and D.L. Feng	
Sample-Size Effects in the Magnetoresistance of Graphite	216601
J.C. González, M. Muñoz, N. García, J. Barzola-Quiquia, D. Spoddig, K. Schindler, and P. Esquinazi	
Minimum Electrical and Thermal Conductivity of Graphene: A Quasiclassical Approach	216602
Maxim Trushin and John Schliemann	
Bipolaron Mechanism for Organic Magnetoresistance	216801
P.A. Bobbert, T.D. Nguyen, F.W. van Oost, B. Koopmans, and M. Wohlgenannt	
Biased Bilayer Graphene: Semiconductor with a Gap Tunable by the Electric Field Effect	216802
Eduardo V. Castro, K.S. Novoselov, S.V. Morozov, N.M. Peres, J.M. dos Santos, Johan Nilsson, F. Guinea, A.K. Geim, and A.H. Neto	
Superconductivity in Novel Ge-Based Skutterudites: $\{\text{Sr}, \text{Ba}\}\text{Pt}_4\text{Ge}_{12}$	217001
E. Bauer, A. Grytsiv, Xing-Qiu Chen, N. Melnychenko-Koblyuk, G. Hilscher, H. Kaldarar, H. Michor, E. Royanian, G. Giester, M. Rotter, R. Podloucky, and P. Rogl	
Magnetic Interference Patterns and Vortices in Diffusive SNS Junctions	217002
J.C. Cuevas and F.S. Bergeret	
Phase States of Multiterminal Mesoscopic Normal-Metal-Superconductor Structures	217003
P. Virtanen, J. Zou, I. Sosnin, V.T. Petrashov, and T.T. Heikkilä	
Magnetic Field Switching between the Two Orbital-Ordered States in DyVO_3	217201
S. Miyasaka, T. Yasue, J. Fujioka, Y. Yamasaki, Y. Okimoto, R. Kumai, T. Arima, and Y. Tokura	
Electric Polarization, Magnetoelectric Effect, and Orbital State of a Layered Iron Oxide with Frustrated Geometry	217202
A. Nagano, M. Naka, J. Nasu, and S. Ishihara	
Giant Negative Magnetization in a Layered Organic Magnet	217203
Randy S. Fishman and Fernando A. Reboredo	
Subpicosecond Magnetization Reversal across Ferrimagnetic Compensation Points	217204
C.D. Stanciu, A. Tsukamoto, A.V. Kimel, F. Hansteen, A. Kirilyuk, A. Itoh, and Th. Rasing	
Spin Supersolid in an Anisotropic Spin-One Heisenberg Chain	217205
P. Sengupta and C.D. Batista	
Tunnel Spin Polarization Versus Energy for Clean and Doped Al_2O_3 Barriers	217206
B.G. Park, T. Banerjee, J.C. Lodder, and R. Jansen	
Competing Ordered Phases in URu_2Si_2 : Hydrostatic Pressure and Rhenium Substitution	217207
J.R. Jeffries, N.P. Butch, B.T. Yukich, and M.B. Maple	
Creep and Flow Regimes of Magnetic Domain-Wall Motion in Ultrathin Pt/Co/Pt Films with Perpendicular Anisotropy	217208
P.J. Metaxas, J.P. Jamet, A. Mougin, M. Cormier, J. Ferré, V. Baltz, B. Rodmacq, B. Dieny, and R.L. Stamps	
Theory of Fast Optical Spin Rotation in a Quantum Dot Based on Geometric Phases and Trapped States	217401
Sophia E. Economou and T.L. Reinecke	
Field-Induced Paramagnons at the Metamagnetic Transition of $\text{Ca}_{1.8}\text{Sr}_{0.2}\text{RuO}_4$	217402
P. Steffens, Y. Sidis, P. Link, K. Schmalzl, S. Nakatsuji, Y. Maeno, and M. Braden	
Ultrannarrow Optical Absorption and Two-Phonon Excitation Spectroscopy of Cu_2O Paraexcitons in a High Magnetic Field	217403
Jan Brandt, Dietmar Fröhlich, Christian Sandfort, Manfred Bayer, Heinrich Stolz, and Nobuko Naka	
Ultraweak-Absorption Microscopy of a Single Semiconductor Quantum Dot in the Midinfrared Range	217404
Julien Houel, Sébastien Sauvage, Philippe Boucaud, Alexandre Dazzi, Rui Prazeres, François Glotin, Jean-Michel Ortéga, Audrey Miard, and Aristide Lemaître	

(Continued on Preceding Page)



Contents (Continued)

Coherent Generation of Acoustic Phonons in an Optical Microcavity	217405
N.D. Lanzillotti-Kimura, A. Fainstein, A. Huynh, B. Perrin, B. Jusserand, A. Miard, and A. Lemaître	
Probing the Electron Delocalization in Liquid Water and Ice at Attosecond Time Scales	217406
D. Nordlund, H. Ogasawara, H. Bluhm, O. Takahashi, M. Odelius, M. Nagasono, L.G. Pettersson, and A. Nilsson	
Strain Control of Domain-Wall Stability in Epitaxial BiFeO ₃ (110) Films	217601
M.P. Cruz, Y.H. Chu, J.X. Zhang, P.L. Yang, F. Zavaliche, Q. He, P. Shafer, L.Q. Chen, and R. Ramesh	
Soft Matter, Biological, and Interdisciplinary Physics	
Metastable Tight Knots in a Wormlike Polymer	217801
Alexander Y. Grosberg and Yitzhak Rabin	
Dynamics of Nearly Spherical Vesicles in an External Flow	218101
V.V. Lebedev, K.S. Turitsyn, and S.S. Vergeles	
Motor Driven Microtubule Shape Fluctuations: Force from within the Lattice	218102
Hervé Mohrbach and Igor M. Kulić	
Experiments Confirm the Influence of Genome Long-Range Correlations on Nucleosome Positioning	218103
C. Vaillant, B. Audit, and A. Arneodo	
Quasipatterns in a Model for Chemical Oscillations Forced at Multiple Resonance Frequencies	218301
Jessica M. Conway and Hermann Riecke	
Errata	
Erratum: Orientational Coupling Amplification in Ferroelectric Nematic Colloids [Phys. Rev. Lett. 97 , 147801 (2006)]	219901
Fenghua Li, Oleksandr Buchnev, Chae Il Cheon, Anatoliy Glushchenko, Victor Reshetnyak, Yuri Reznikov, Timothy J. Sluckin, and John L. West	
Publisher's Note: Anderson Localization of Bogolyubov Quasiparticles in Interacting Bose-Einstein Condensates [Phys. Rev. Lett. 99 , 180402 (2007)]	219902
P. Lugan, D. Clement, P. Bouyer, A. Aspect, and L. Sanchez-Palencia	



By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).



Brief explanations of selected papers from this and other APS journals appear regularly at the *Phys. Rev. Focus* web site (<http://focus.aps.org>). Readers can also sign up for weekly e-mail summaries of *Focus* stories.