



Diagram of a modern high-precision Michelson-Morley experiment to test for variations in the speed of light with direction. The resonant frequencies of two cryogenic optical resonators (COREs) were compared over a period of more than a year; an anisotropy in c would cause the beat frequency to vary as the apparatus rotates with the Earth. See article 020401.

PHYSICAL REVIEW LETTERS

Contents

Articles published 5 July–11 July 2003

VOLUME 91, NUMBER 2

11 JULY 2003

General Physics

- Modern Michelson-Morley Experiment using Cryogenic Optical Resonators 020401
 Holger Müller, Sven Herrmann, Claus Braxmaier, Stephan Schiller, and Achim Peters
- Measurement of the Interaction Energy near a Feshbach Resonance in a ^6Li Fermi Gas 020402
 T. Bourdel, J. Cubizolles, L. Khaykovich, K. M. F. Magalhães, S. J. J. M. F. Kokkelmans,
 G. V. Shlyapnikov, and C. Salomon

Gravitation and Astrophysics

- Gravitational Waves from Sub-Lunar-Mass Primordial Black-Hole Binaries: A New Probe of Extradimensions 021101
 Kaiki Taro Inoue and Takahiro Tanaka
- Primordial Gravity Waves and Weak Lensing 021301
 Scott Dodelson, Eduardo Rozo, and Albert Stebbins

Elementary Particles and Fields

- Black Holes in Gödel Universes and pp Waves 021601
 Eric Gimon and Akikazu Hashimoto
- Observation of the Decay $B^\pm \rightarrow \pi^\pm \pi^0$, Study of $B^\pm \rightarrow K^\pm \pi^0$, and Search for $B^0 \rightarrow \pi^0 \pi^0$ 021801
 B. Aubert *et al.* (BABAR Collaboration)
- Observation of a Near-Threshold Enhancement in the $p\bar{p}$ Mass Spectrum from Radiative $J/\psi \rightarrow \gamma p\bar{p}$ Decays 022001
 J.Z. Bai *et al.* (BES Collaboration)
- Measurement of $ep \rightarrow e'p\pi^+\pi^-$ and Baryon Resonance Analysis 022002
 M. Ripani *et al.* (CLAS Collaboration)
- Cross-Section Measurement of Charged-Pion Photoproduction from Hydrogen and Deuterium 022003
 L. Y. Zhu *et al.* (Jefferson Lab Hall A Collaboration)
- Locality of Quark-Hadron Duality and Deviations from Quark Counting Rules Above the Resonance Region 022004
 Qiang Zhao and Frank E. Close

Nuclear Physics

- Ion-Induced Quark-Gluon Implosion 022301
 L. Frankfurt and M. Strikman
- Enhanced Production of Neutron-Rich Rare Isotopes in Peripheral Collisions at Fermi Energies 022701
 G. A. Souliotis, M. Veselsky, G. Chubarian, L. Trache, A. Keksis, E. Martin, D. V. Shetty, and S. J. Yennello

Atomic, Molecular, and Optical Physics

- Parity-Violation Effects in the C-F Stretching Mode of Heavy-Atom Methyl Fluorides 023001
 Radovan Bast and Peter Schwerdtfeger

(Continued on Third Cover)



Contents (Continued)

Autler-Townes Splitting in the Multiphoton Resonance Ionization Spectrum of Molecules Produced by Ultrashort Laser Pulses	023002
Zhigang Sun and Nanquan Lou	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Increasing Spatial Complexity toward Near-Resonant Regimes of Quadratic Media	023901
Mustapha Tlidi and Majid Taki	
Polarization-Independent Linear Waveguides in 3D Photonic Crystals	023902
E. Lidorikis, M.L. Povinelli, S.G. Johnson, and J.D. Joannopoulos	
Three Types of Transitions to Phase Synchronization in Coupled Chaotic Oscillators	024101
Grigory V. Osipov, Bambi Hu, Changsong Zhou, Mikhail V. Ivanchenko, and Jürgen Kurths	
Close-Packed Floating Clusters: Granular Hydrodynamics Beyond the Freezing Point?	024301
Baruch Meerson, Thorsten Pöschel, and Yaron Bromberg	
Plasma and Beam Physics	
Generation of a Self-Chirped Few-Cycle Optical Pulse in a FEL Oscillator	024801
Ryoichi Hajima and Ryoji Nagai	
Continuum Self-Organized-Criticality Model of Turbulent Heat Transport in Tokamaks	025001
Varun Tangri, Amita Das, Predhiman Kaw, and Raghvendra Singh	
Condensed Matter: Structure, etc.	
Lattice Trapping Barriers to Brittle Fracture	025501
N. Bernstein and D.W. Hess	
Monolayer Ice	025502
Ronen Zangi and Alan E. Mark	
Anomalous Dislocation Multiplication in FCC Metals	025503
Maurice de Koning, Wei Cai, and Vasily V. Bulatov	
First One-Dimensional Stress-Strain Experiments inside an Aperiodic Inclusion Compound: Evidence of Depinning Effects	025504
Lydie Bourgeois, Claude Ecolivet, Bertrand Toudic, Philippe Bourges, and Tomaz Brezczewski	
Metastable Frenkel Pair Defect in Graphite: Source of Wigner Energy?	025505
C.P. Ewels, R.H. Telling, A.A. El-Barbary, M.I. Heggie, and P.R. Briddon	
New Mechanism for the α to ω Martensitic Transformation in Pure Titanium	025701
D.R. Trinkle, R.G. Hennig, S.G. Srinivasan, D.M. Hatch, M.D. Jones, H.T. Stokes, R.C. Albers, and J.W. Wilkins	
Critical Behavior of Thermal Relaxation near a Breakdown Point	025702
C.D. Mukherjee and K.K. Bardhan	
Evidence of 1D Behavior of He ⁴ Confined within Carbon-Nanotube Bundles	025901
J.C. Lasjaunias, K. Biljaković, J.L. Sauvajol, and P. Monceau	
Grains, Growth, and Grooving	026101
M.J. Rost, D.A. Quist, and J.W.M. Frenken	
Knudsen Diffusivity of a Hard Sphere in a Rough Slit Pore	026102
Gaurav Arya, Hsueh-Chia Chang, and Edward J. Maginn	
Nucleation and Growth of Molecular Organic Crystals in a Liquid Film under Vapor Deposition	026103
M. Voigt, S. Dorsfeld, A. Volz, and M. Sokolowski	
Doping of Magic Nanoclusters in the Submonolayer In/Si(100) System	026104
V. G. Kotlyar, A. V. Zotov, A. A. Saranin, E. N. Chukurov, T. V. Kasyanova, M. A. Cherevik, I. V. Pisarenko, H. Okado, M. Katayama, K. Oura, and V. G. Lifshits	
Condensed Matter: Electronic Properties, etc.	
Locally Critical Point in an Anisotropic Kondo Lattice	026401
D.R. Grempel and Qimiao Si	
How Irrelevant Operators Affect the Determination of Fractional Charge	026801
A. Koutouza, H. Saleur, and B. Trauzettel	

(Continued on Preceding Page)

Contents (Continued)

Ionic Shell and Subshell Structures in Aluminum and Gold Nanocontacts	026802
E. Medina, M. Díaz, N. León, C. Guerrero, A. Hasmy, P.A. Serena, and J.L. Costa-Krämer	
Spin-Blockade Spectroscopy of a Two-Level Artificial Molecule	026803
M. Pioro-Ladrière, M. Ciorga, J. Lapointe, P. Zawadzki, M. Korkusiński, P. Hawrylak, and A.S. Sachrajda	
Even-Odd Effect in Spontaneously Coherent Bilayer Quantum Hall Droplets	026804
K. Park, V.W. Scarola, and S. Das Sarma	
Metallic Behavior of Lightly Doped $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ with a Fermi Surface Forming an Arc	027001
T. Yoshida, X.J. Zhou, T. Sasagawa, W.L. Yang, P.V. Bogdanov, A. Lanzara, Z. Hussain, T. Mizokawa, A. Fujimori, H. Eisaki, Z.-X. Shen, T. Kakeshita, and S. Uchida	
Disordered Nanocrystalline Superconducting PbMo_6S_8 with a Very Large Upper Critical Field	027002
H.J. Niu and D.P. Hampshire	
Perpendicular Interlayer Coupling in $\text{Ni}_{80}\text{Fe}_{20}/\text{NiO}/\text{Co}$ Trilayers	027201
J. Camarero, Y. Pennec, J. Vogel, M. Bonfim, S. Pizzini, F. Ernult, F. Fetta, F. Garcia, F. Lançon, L. Billard, B. Dieny, A. Tagliaferri, and N.B. Brookes	
Local Magnetic Susceptibility of the Positive Muon in the Quasi-One-Dimensional $S = 1/2$ Antiferromagnet Dichlorobis (Pyridine) Copper (II)	027202
J. A. Chakhalian, R. F. Kiefl, R. Miller, J. Brewer, S. R. Dunsiger, G. Morris, W. A. MacFarlane, J. E. Sonier, S. Eggert, I. Affleck, A. Keren, and M. Verdaguer	
Exchange Interaction Effects on the Optical Properties of LuMnO_3	027203
A. B. Souchkov, J. R. Simpson, M. Quijada, H. Ishibashi, N. Hur, J. S. Ahn, S. W. Cheong, A. J. Millis, and H. D. Drew	
Quasiparticle Relaxation Dynamics in Heavy Fermion Compounds	027401
J. Demsar, R. D. Averitt, K. H. Ahn, M. J. Graf, S. A. Trugman, V. V. Kabanov, J. L. Sarrao, and A. J. Taylor	
Interdisciplinary Physics: Biological Physics, Quantum Information, etc.	
Classical and Quantum Communication without a Shared Reference Frame	027901
Stephen D. Bartlett, Terry Rudolph, and Robert W. Spekkens	
Programmable Networks for Quantum Algorithms	027902
Norbert Schuch and Jens Siewert	
Exact Two-Qubit Universal Quantum Circuit	027903
Jun Zhang, Jiri Vala, Shankar Sastry, and K. Birgitta Whaley	
Discontinuous Unbinding of Lipid Multibilayers	028101
B. Pozo-Navas, V. A. Raghunathan, J. Katsaras, M. Rappolt, K. Lohner, and G. Pabst	
Saltatory Waves in the Spike-Diffuse-Spike Model of Active Dendritic Spines	028102
S. Coombes and P. C. Bressloff	
Dynamic Force Spectroscopy of Protein-DNA Interactions by Unzipping DNA	028103
Steven J. Koch and Michelle D. Wang	
Ion Multivalence and Like-Charge Polyelectrolyte Attraction	028301
John C. Butler, Thomas Angelini, Jay X. Tang, and Gerard C. L. Wong	
Does a Single Zealot Affect an Infinite Group of Voters?	028701
Mauro Mobilia	
Comments	
Comment on “Repulsive Casimir Forces”	029101
Davide Iannuzzi and Federico Capasso	
Kenneth <i>et al.</i> Reply	029102
O. Kenneth, I. Klich, A. Mann, and M. Revzen	
Comment on “Transverse NMR Relaxation as a Probe of Mesoscopic Structure”	029801
Y.-Q. Song and P. N. Sen	
Kiselev and Novikov Reply	029802
Valerij G. Kiselev and Dmitry S. Novikov	

(Continued on Preceding Page)

Contents (Continued)

Errata

Erratum: Edge Dislocations in Crystal Structures Considered as Traveling Waves in Discrete Models [Phys. Rev. Lett. 90 , 135502 (2003)]	029901
A. Carpio and L.L. Bonilla	
Erratum: Ion-trap Quantum Logic Using Long-Wavelength Radiation [Phys. Rev. Lett. 87 , 257904 (2001)]	029902
Florian Mintert and Christof Wunderlich	