

Cross section from a 3D simulation of two upward-propagating crossed laser beams interacting with a rightward flow of plasma out of a laser target. Less laser energy is deposited within the target in the presence of such interactions. See article 195001.

PHYSICAL REVIEW LETTERS

Contents

Articles published 13 May–19 May 2006

VOLUME 96, NUMBER 19 19 May 2006

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

Integrable Nonlinear Evolution Partial Differential Equations in 4 + 2 and 3 + 1 Dimensions 190201
A. S. Fokas

Quantum Magnetism with Multicomponent Dipolar Molecules in an Optical Lattice 190401
Ryan Barnett, Dmitry Petrov, Mikhail Lukin, and Eugene Demler

Phase Diagram of Bose-Fermi Mixtures in One-Dimensional Optical Lattices 190402
Lode Pollet, Matthias Troyer, Kris Van Houcke, and Stefan M. Rombouts

Spin-3 Chromium Bose-Einstein Condensates 190404
L. Santos and T. Pfau

^{52}Cr Spinor Condensate: A Biaxial or Uniaxial Spin Nematic 190405
Roberto B. Diener and Tin-Lun Ho

Complete Deterministic Linear Optics Bell State Analysis 190501
Carsten Schuck, Gerhard Huber, Christian Kurtsiefer, and Harald Weinfurter

Giant Colloidal Diffusivity on Corrugated Optical Vortices 190601
Sang-Hyuk Lee and David G. Grier

Demonstration of a Controllable Three-Dimensional Brownian Motor in Symmetric Potentials 190602
P. Sjölund, S. J. Petra, C. M. Dion, S. Jonsell, M. Nylén, L. Sanchez-Palencia, and A. Kastberg

Gravitation and Astrophysics

Hidden Supersymmetry of Domain Walls and Cosmologies 191301
Kostas Skenderis and Paul K. Townsend

Dipole of the Luminosity Distance: A Direct Measure of $H(z)$ 191302
Camille Bonvin, Ruth Durrer, and Martin Kunz

Elementary Particles and Fields

Measurement of the Ratios of Branching Fractions $\mathcal{B}(B_s^0 \to D_s^- \pi^+)/\mathcal{B}(B^0 \to D^- \pi^+)$ and $\mathcal{B}(B^+ \to \overline{D}^0 \pi^+)/\mathcal{B}(B^0 \to D^- \pi^+)$ 191801
A. Abulencia *et al.* (CDF Collaboration)

Clean Prediction of *CP*-Violating Processes ψ, ϕ, and $\Upsilon(1S)$ Decay to $K_S K_S$ and $K_L K_L$ 192001
Haibo Li and Maozhi Yang

Nuclear Physics

Partial Photoneutron Cross Sections for the Isomeric State ^{180}Ta^m 192501
S. Goko, H. Utsunomiya, S. Goriely, A. Makinaga, T. Kaihori, S. Hohara, H. Akimune, T. Yamagata, Y.-W. Lui, H. Toyokawa, A. J. Koning, and S. Hilaire

Signatures for Multi-α-Condensed States 192502
Tz. Kokalova, N. Itagaki, W. von Oertzen, and C. Wheldon

(Continued on Third Cover)

Copyright 2006 by The American Physical Society

0031-9007(20060519)96:19;1-G

Atomic, Molecular, and Optical Physics

Electric Quadrupole Moments of the D States of Alkaline-Earth-Metal Ions 193001
Chiranjib Sur, K. V. Latha, Bijaya K. Sahoo, Rajat K. Chaudhuri, B. P. Das, and D. Mukherjee

Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.

Conical Emission, Pulse Splitting, and X-Wave Parametric Amplification in Nonlinear Dynamics of Ultrashort Light Pulses 193901
Daniele Faccio, Miguel A. Porras, Audrius Dubietis, Francesca Bragheri, Arnaud Couairon, and Paolo Di Trapani

Determination of a Coupling Function in Multicoupled Oscillators 194101
Jun Miyazaki and Shuichi Kinoshita

Bulk Flow in Ferrofluids in a Uniform Rotating Magnetic Field 194501
A. Chaves, C. Rinaldi, S. Elborai, X. He, and M. Zahn

Plasma and Beam Physics

Creation of Hot Radiation Environments in Laser-Driven Targets 195001
D. E. Hinkel, M. B. Schneider, B. K. Young, A. B. Langdon, E. A. Williams, M. D. Rosen, and L. J. Suter

Observation of Turbulent-Driven Shear Flow in a Cylindrical Laboratory Plasma Device 195002
C. Holland, J. H. Yu, A. James, D. Nishijima, M. Shimada, N. Taheri, and G. R. Tynan

Observation of High-Field-Side Crash and Heat Transfer during Sawtooth Oscillation in Magnetically Confined Plasmas 195003
H. K. Park, N. C. Luhmann, Jr., A. J. Donné, I. G. Classen, C. W. Domier, E. Mazzucato, T. Munsat, M. J. van de Pol, and Z. Xia (TEXTOR team)

Comparison Study of 2D Images of Temperature Fluctuations during Sawtooth Oscillation with Theoretical Models . 195004
H. K. Park, A. J. Donné, N. C. Luhmann, Jr., I. G. Classen, C. W. Domier, E. Mazzucato, T. Munsat, M. J. van de Pol, and Z. Xia (TEXTOR Team)

Condensed Matter: Structure, etc.

Phase Transitions in Solids Stimulated by Simultaneous Exposure to High Pressure and Relativistic Heavy Ions 195701
Ulrich A. Glasmacher, Maik Lang, Hans Keppler, Falko Langenhorst, Reinhard Neumann, Dieter Schardt, Christina Trautmann, and Günther A. Wagner

Birth and Morphological Evolution of Step Bunches under Electromigration 195901
J. Chang, O. Pierre-Louis, and C. Misbah

Similarities in the C_p/T^3 Peaks in Amorphous and Crystalline Metals 195902
D. J. Safarik, R. B. Schwarz, and M. F. Hundley

Banding in Entangled Polymer Fluids under Oscillatory Shearing 196001
Prashant Tapadia, Sham Ravindranath, and Shi-Qing Wang

Determination of Interface Atomic Structure and Its Impact on Spin Transport Using Z-Contrast Microscopy and Density-Functional Theory 196101
Thomas J. Zega, Aubrey T. Hanbicki, Steven C. Erwin, Igor Žutić, George Kioseoglou, Connie H. Li, Berend T. Jonker, and Rhonda M. Stroud

New Linear-Parabolic Rate Equation for Thermal Oxidation of Silicon 196102
Takanobu Watanabe, Kosuke Tatsumura, and Iwao Ohdomari

Condensed Matter: Electronic Properties, etc.

Correlated Hybridization in Transition-Metal Complexes 196401
A. Hübsch, J. C. Lin, J. Pan, and D. L. Cox

Nitrogen Vacancies as Major Point Defects in Gallium Nitride 196402
M. G. Ganchenkova and R. M. Nieminen

New Luttinger-Liquid Physics from Photoemission on $Li_{0.9}Mo_6O_{17}$ 196403
Feng Wang, J. V. Alvarez, S.-K. Mo, J. W. Allen, G.-H. Gweon, J. He, R. Jin, D. Mandrus, and H. Höchst

Tunable Anomalous Hall Effect in a Nonferromagnetic System 196404
John Cumings, L. S. Moore, H. T. Chou, K. C. Ku, G. Xiang, S. A. Crooker, N. Samarth, and D. Goldhaber-Gordon

(Continued on Preceding Page)

Dynamic Response of One-Dimensional Interacting Fermions 196405
M. Pustilnik, M. Khodas, A. Kamenev, and L. I. Glazman
Magnetic Domain Formation in Itinerant Metamagnets 196406
B. Binz, H. B. Braun, T. M. Rice, and M. Sigrist
Quantum-Tunneling-Induced Kondo Effect in Single Molecular Magnets 196601
C. Romeike, M. R. Wegewijs, W. Hofstetter, and H. Schoeller
Nonlinear 2D Spin Susceptibility in a Finite Magnetic Field: Spin-Polarization Dependence 196602
Ying Zhang and S. Das Sarma
Crossover between Monopole and Multipole Plasmon of Cs Monolayers on Si(111) Individually Resolved in Energy and Momentum 196801
Volkmar Zielasek, Neele Rönitz, Martin Henzler, and Herbert Pfnür
Anisotropic States of Two-Dimensional Electrons in High Magnetic Fields 196802
A. M. Ettouhami, C. B. Doiron, F. D. Klironomos, R. Côté, and Alan T. Dorsey
Universal Behavior of Nearly Free Electron States in Carbon Nanotubes 196803
E. R. Margine and Vincent H. Crespi
Ehrenfest Time and the Coherent Backscattering Off Ballistic Cavities 196804
Saar Rahav and Piet W. Brouwer
Spin Quantum Tunneling in Single Molecular Magnets: Fingerprints in Transport Spectroscopy of Current and Noise 196805
C. Romeike, M. R. Wegewijs, and H. Schoeller
Interface Energetics and Level Alignment at Covalent Metal-Molecule Junctions: π-Conjugated Thiols on Gold 196806
Georg Heimel, Lorenz Romaner, Jean-Luc Brédas, and Egbert Zojer
Photochemistry on Thin Metal Films: Probe of Electron Dynamics in Metal-Semiconductor Heterosystems 196807
Olaf Autzen, Claudia Wesenberg, and Eckart Hasselbrink
Quantization of 2D Hole Gas in Conductive Hydrogenated Diamond Surfaces Observed by Electron Field Emission. 196808
L. Gan, E. Baskin, C. Saguy, and R. Kalish
Magnetic Order in the Pseudogap Phase of High-T_C Superconductors 197001
B. Fauqué, Y. Sidis, V. Hinkov, S. Pailhès, C. T. Lin, X. Chaud, and P. Bourges
Local Electronic Structure of $Bi_2Sr_2CaCu_2O_8$ near Oxygen Dopants: A Window on the High-T_c Pairing Mechanism. 197002
Y. He, T. S. Nunner, P. J. Hirschfeld, and H.-P. Cheng
Thickness Dependence of the Josephson Ground States of Superconductor-Ferromagnet-Superconductor Junctions ... 197003
V. A. Oboznov, V. V. Bol'ginov, A. K. Feofanov, V. V. Ryazanov, and A. I. Buzdin
Quasi-Kondo Phenomenon due to the Dynamical Jahn-Teller Effect 197201
Takashi Hotta
Random-Field Spin Models beyond 1 Loop: A Mechanism for Decreasing the Lower Critical Dimension 197202
Pierre Le Doussal and Kay Jörg Wiese
Half-Metallic Ferromagnetism Induced by Dynamic Electron Correlations in VAs 197203
L. Chioncel, Ph. Mavropoulos, M. Ležaić, S. Blügel, E. Arrigoni, M. I. Katsnelson, and A. I. Lichtenstein
Low-Temperature Solution of the Sherrington-Kirkpatrick Model 197204
Sergey Pankov
Spin-Liquid Correlations in the Nd-Langasite Anisotropic Kagomé Antiferromagnet 197205
J. Robert, V. Simonet, B. Canals, R. Ballou, P. Bordet, P. Lejay, and A. Stunault
Evidence of Two Dimensionality in Quasi-One-Dimensional Cobalt Oxides 197206
J. Sugiyama, H. Nozaki, Y. Ikedo, K. Mukai, D. Andreica, A. Amato, J. H. Brewer, E. J. Ansaldo, G. D. Morris, T. Takami, and H. Ikuta
Influence of Current on Field-Driven Domain Wall Motion in Permalloy Nanowires from Time Resolved Measurements of Anisotropic Magnetoresistance 197207
M. Hayashi, L. Thomas, Ya. B. Bazaliy, C. Rettner, R. Moriya, X. Jiang, and S. S. Parkin
Room-Temperature Magneto-Optics of Ferromagnetic Transition-Metal-Doped ZnO Thin Films 197208
J. R. Neal, A. J. Behan, R. M. Ibrahim, H. J. Blythe, M. Ziese, A. M. Fox, and G. A. Gehring

Soft Matter, Biological, and Interdisciplinary Physics

Rearrangement of Lipid Ordered Phases Upon Protein Adsorption Due to Multiple Site Binding 198101
H. Yim, M. S. Kent, D. Y. Sasaki, B. D. Polizzotti, K. L. Kiick, J. Majewski, and S. Satija

(Continued on Preceding Page)

Sequential Recruitment and Combinatorial Assembling of Multiprotein Complexes in Transcriptional Activation 198102
Vincent Lemaire, Chiu Fan Lee, Jinzhi Lei, Raphaël Métivier, and Leon Glass
Glasslike Structure of Globular Proteins and the Boson Peak 198103
Stefano Ciliberti, Paolo De Los Rios, and Francesco Piazza
Irreversible Shear-Activated Aggregation in Non-Brownian Suspensions 198301
J. Guery, E. Bertrand, C. Rouzeau, P. Levitz, D. A. Weitz, and J. Bibette
Spin Transition in Magnesiowüstite in Earth's Lower Mantle 198501
Taku Tsuchiya, Renata M. Wentzcovitch, Cesar R. da Silva, and Stefano de Gironcoli

Comments

Comment on "Surprises in Threshold Antikaon-Nucleon Physics" 199201
B. Borasoy, R. Nißler, and W. Weise
Oller *et al.* Reply 199202
José A. Oller, Joaquim Prades, and Michela Verbeni
Comment on "Finite Element Mapping for Spring Network Representations of the Mechanics of Solids" 199401
Phani Kumar Nukala and Srđan Šimunović
Gusev Reply 199402
Andrei A. Gusev
Comment on "Fraction of Boroxol Rings in Vitreous Boron Oxide from a First-Principles Analysis of Raman and NMR Spectra" 199701
Jan Swenson and Lars Börjesson
Umari and Pasquarello Reply 199702
P. Umari and Alfredo Pasquarello
Comment on "Trapping Single Molecules by Dielectrophoresis" 199801
Liming Ying, Dejian Zhou, and Andreas Bruckbauer
Hölzel *et al.* Reply 199802
Ralph Hölzel, Nils Calander, Zackary Chiragwandi, Magnus Willander, and Frank F. Bier

Errata

Publisher's Note: Novel Heat Conduction Model for Bridging Different Space and Time Scales [Phys. Rev. Lett. **96**, 184301 (2006)] 199901
Christianne V. Anderson and Kumar K. Tamma
Erratum: Chaotic Dynamics of the Fractional Lorenz System [Phys. Rev. Lett. **91**, 034101 (2003)] 199902
Ilia Grigorenko and Elena Grigorenko
Erratum: Measurement of Absolute Hadronic Branching Fractions of D Mesons and $e^+e^- \rightarrow D\overline{D}$ Cross Sections at $E_{\mathrm{c.m.}} = 3773$ MeV [Phys. Rev. Lett. **95**, 121801 (2005)] 199903
Q. He *et al.* (CLEO Collaboration)

Physical Review Focus

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.