



Calculated photon spectra for the decay $Y \rightarrow X\gamma$ using a nonrelativistic QCD approach and soft-collinear effective theory (dashed line) plus "resummation" effects (solid line). The shaded areas indicate the theoretical uncertainties. Shown for comparison are experimental data from the CLEO Collaboration. See article 032001.

PHYSICAL REVIEW LETTERS

Contents

Articles published 18 January–24 January 2003

VOLUME 90, NUMBER 3

24 JANUARY 2003

General Physics

Condensate Statistics in One-Dimensional Interacting Bose Gases: Exact Results	030401
Iacopo Carusotto and Yvan Castin	
Creating Maximally Entangled Atomic States in a Bose-Einstein Condensate	030402
L. You	
Coherent Collisions between Bose-Einstein Condensates	030403
J.M. Vogels, J.K. Chin, and W. Ketterle	
Cooling Dynamics of Ultracold Two-Species Fermi-Bose Mixtures	030404
Carlo Presilla and Roberto Onofrio	
Doubly Stochastic Coherence via Noise-Induced Symmetry in Bistable Neural Models	030601
A. Zaikin, J. García-Ojalvo, R. Báscónes, E. Ullner, and J. Kurths	

Gravitation and Astrophysics

Cosmological Parameters Are Dressed	031101
Thomas Buchert and Mauro Carfora	
Parametrization of Dark-Energy Properties: A Principal-Component Approach	031301
Dragan Huterer and Glenn Starkman	
Quantum Cosmology and Conformal Invariance	031302
B. Pioline and A. Waldron	
Domination of Black Hole Accretion in Brane Cosmology	031303
A. S. Majumdar	

Elementary Particles and Fields

Black Hole Evaporation with Separated Fermions	031601
Tao Han, Graham D. Kribs, and Bob McElrath	
Resummed Photon Spectrum in Radiative Y Decays	032001
Sean Fleming and Adam K. Leibovich	

Nuclear Physics

Azimuthal Anisotropy and Correlations in the Hard Scattering Regime at RHIC	032301
C. Adler <i>et al.</i> (STAR Collaboration)	

Atomic, Molecular, and Optical Physics

Two-Step Enantio-Selective Optical Switch	033001
Petr Král, Ioannis Thanopoulos, Moshe Shapiro, and Doron Cohen	
Observation of a Transition in the Dynamics Of Strong-Field Double Ionization	033002
J.L. Chaloupka, J. Rudati, R. Lafon, P. Agostini, K.C. Kulander, and L.F. DiMauro	

(Continued on Third Cover)

Contents (Continued)

Sensitive Detection of Cold Cesium Molecules Formed on Feshbach Resonances	033201
Cheng Chin, Andrew J. Kerman, Vladan Vuletić, and Steven Chu	
Element- and Size-Dependent Electron Delocalization in Au_NX^+ Clusters ($X = \text{Sc, Ti, V, Cr, Mn, Fe, Co, Ni}$)	033401
S. Neukermans, E. Janssens, H. Tanaka, R.E. Silverans, and P. Lievens	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
Observation of a Chiral State in a Microwave Cavity	034101
C. Dembowski, B. Dietz, H.-D. Gräf, H.L. Harney, A. Heine, W.D. Heiss, and A. Richter	
Arithmetical Method to Detect Integrability in Maps	034102
J.A.G. Roberts and F. Vivaldi	
Decay of Scalar Turbulence Revisited	034501
M. Chertkov and V. Lebedev	
Ultimate State of Thermal Convection	034502
Detlef Lohse and Federico Toschi	
Plasma and Beam Physics	
Experimental Study for the Feasibility of a Crystalline Undulator	034801
S. Bellucci, S. Bini, V.M. Biryukov, Yu.A. Chesnokov, S. Dabagov, G. Giannini, V. Guidi, Yu.M. Ivanov, V.I. Kotov, V.A. Maisheev, C. Malagù, G. Martinelli, A.A. Petrunin, V.V. Skorobogatov, M. Stefancich, and D. Vincenzi	
Temperature-Transformed “Minimal Coupling”: Magnetofluid Unification	035001
S.M. Mahajan	
Measurement of Internal Magnetic Field Fluctuations in a Reversed-Field Pinch by Faraday Rotation	035002
W.X. Ding, D.L. Brower, S.D. Terry, D. Craig, S.C. Prager, J.S. Sarff, and J.C. Wright	
Measurement of the Current Sheet during Magnetic Reconnection in a Toroidal Plasma	035003
N.A. Crocker, G. Fiksel, S.C. Prager, and J.S. Sarff	
Measurements of the Shear Alfvén Wave Dispersion for Finite Perpendicular Wave Number	035004
C.A. Kletzing, S.R. Bounds, J. Martin-Hiner, W. Geckelman, and C. Mitchell	
Demonstration of Radiation Symmetry Control for Inertial Confinement Fusion in Double Z-Pinch Hohlraums	035005
R.A. Vesey, M.E. Cuneo, G.R. Bennett, J.L. Porter, Jr., R.G. Adams, R.A. Aragon, P.K. Rambo, L.E. Ruggles, W.W. Simpson, and I.C. Smith	
Magnetic Shear Damping of Dissipative Drift Wave Turbulence	035006
A. Kendl and B.D. Scott	
Condensed Matter: Structure, etc.	
Liquid ^3He Thermomechanical Effect in Regular Cylinders	035301
Daren Sawkey and J.P. Harrison	
Enhanced Friedel Structure and Proton Pairing in Dense Solid Hydrogen	035501
Kazutaka Nagao, S.A. Bonev, A. Bergara, and N.W. Ashcroft	
Fully Coordinated Silica Nanoclusters: $(\text{SiO}_2)_N$ Molecular Rings	035502
S.T. Bromley, M.A. Zwijnenburg, and Th. Maschmeyer	
Light Scattering Study of a Twist Grain Boundary Liquid Crystal	035503
A. Adorjan, S. Stojadinovic, L. Sukhomlinova, R. Twieg, and S. Sprunt	
First-Principles Calculations of Pseudolocal Vibrational Modes: The Case of Cu and Cu Pairs in Si	035504
S.K. Estreicher, D. West, J. Goss, S. Knack, and J. Weber	
Use of a Wave Reverberation Technique to Infer the Density Compression of Shocked Liquid Deuterium to 75 GPa	035505
M.D. Knudson, D.L. Hanson, J.E. Bailey, C.A. Hall, and J.R. Asay	
Structure of a Collapsed Polymer Chain with Stickers: A Single- or Multiflower?	035506
Guangzhao Zhang, Françoise M. Winnik, and Chi Wu	
Endohedral Impurities in Carbon Nanotubes	035507
Dennis P. Clougherty	
Fast Calculation of the Density of States of a Fluid by Monte Carlo Simulations	035701
Qiliang Yan and Juan J. de Pablo	

(Continued on Preceding Page)

Contents (Continued)

Effect of Impurities in the Large Au-Au Distances in Gold Nanowires	036101
Frederico D. Novaes, Antônio J.R. da Silva, E.Z. da Silva, and A. Fazzio	
Ion Beam Triangulation of Ultrathin Mn and CoMn Films Grown on Cu(001)	036102
R. Pfandzelter, T. Bernhard, and H. Winter	
Measurements of Elastic Constants in Thin Films of Colossal Magnetoresistance Material	036103
Jin H. So, J.R. Gladden, Y.F. Hu, J.D. Maynard, and Qi Li	
Condensed Matter: Electronic Properties, etc.	
First-Principles Calculation of Vibrational Raman Spectra in Large Systems: Signature of Small Rings in Crystalline SiO ₂	036401
Michele Lazzeri and Francesco Mauri	
Triplet-to-Singlet Exciton Formation in poly(<i>p</i> -phenylene-vinylene) Light-Emitting Diodes	036601
L.C. Lin, H.F. Meng, J.T. Shy, S.F. Horng, L.S. Yu, C.H. Chen, H.H. Liaw, C.C. Huang, K.Y. Peng, and S.A. Chen	
Second-Harmonic Generation in GaAs: Experiment versus Theoretical Predictions of $\chi_{xyz}^{(2)}$	036801
S. Bergfeld and W. Daum	
Artificial Dielectric Superlattices with Broken Inversion Symmetry	036802
Maitri P. Warusawithana, Eugene V. Colla, J.N. Eckstein, and M.B. Weissman	
Evidence of Landau Levels and Interactions in Low-Lying Excitations of Composite Fermions at $1/3 \leq \nu \leq 2/5$...	036803
Irene Dujovne, A. Pinczuk, Moonsoo Kang, B.S. Dennis, L.N. Pfeiffer, and K.W. West	
Dynamical Matching of Josephson Vortex Lattice with Sample Edge in Layered High- T_c Superconductors: Origin of the Periodic Oscillation of Flux Flow Resistance	037001
M. Machida	
Phase Diagram of La _{2-x} Sr _x CuO ₄ Probed in the Infrared: Imprints of Charge Stripe Excitations	037002
A. Lucarelli, S. Lupi, M. Ortolani, P. Calvani, P. Maselli, M. Capizzi, P. Giura, H. Eisaki, N. Kikugawa, T. Fujita, M. Fujita, and K. Yamada	
Multiphoton Transitions between Energy Levels in a Current-Biased Josephson Tunnel Junction	037003
A. Wallraff, T. Duty, A. Lukashenko, and A.V. Ustinov	
Anisotropic Enhancement of Superconductivity in Heavy-Ion Irradiated (K, Ba)BiO ₃	037004
C. Marcenat, S. Blanchard, J. Marcus, L.M. Paulius, C.J. van der Beek, M. Konczykowski, and T. Klein	
Quantum Confinement and Fullerene-like Surface Reconstructions in Nanodiamonds	037401
Jean-Yves Raty, Giulia Galli, C. Bostedt, Tony W. van Buuren, and Louis J. Terminello	
NMR Evidence for the Coexistence of Order-Disorder and Displacive Components in Barium Titanate	037601
Boštjan Zalar, Valentin V. Laguta, and Robert Blinc	
Survival of He ⁺ Ions during Grazing Scattering from a Ag(111) Surface	037602
S. Wethekam, A. Mertens, and H. Winter	
Dominance of the Final State in Photoemission Mapping of the Fermi Surface of Co/Cu(001)	037603
Xingyu Gao, Alexey N. Koveshnikov, Reginald H. Madjoe, Roger L. Stockbauer, and Richard L. Kurtz	
Interdisciplinary Physics: Biological Physics, Quantum Information, etc.	
Robust Dynamical Decoupling of Quantum Systems with Bounded Controls	037901
Lorenza Viola and Emanuel Knill	
Experimental Demonstration of a Technique to Generate Arbitrary Quantum Superposition States of a Harmonically Bound Spin-1/2 Particle	037902
A. Ben-Kish, B. DeMarco, V. Meyer, M. Rowe, J. Britton, W.M. Itano, B.M. Jelenković, C. Langer, D. Leibfried, T. Rosenband, and D.J. Wineland	
Reactive Glass and Vegetation Patterns	038101
N.M. Shnerb, P. Sarah, H. Lavee, and S. Solomon	
Comments	
Using NMR to Measure Fractal Dimensions	039601
D. Candela and Po-zen Wong	
Stallmach and Kärger Reply	039602
Frank Stallmach and Jörg Kärger	

(Continued on Preceding Page)

Contents (Continued)

Errata

Erratum: Possibility of Large Final State Interaction Phases in Light of $B \rightarrow K\pi$ and $\pi\pi$ Data [Phys. Rev. Lett. 84 , 4806 (2000)]	039901
Wei-Shu Hou and Kwei-Chou Yang	
Erratum: Physical Limits on Electronic Nonlinear Molecular Susceptibilities [Phys. Rev. Lett. 85 , 001218 (2000)]	039902
Mark G. Kuzyk	