



Constant-energy plots of the band structure of TlBiTe_2 , a possible candidate for 3D topological superconductors. [Y. L. Chen, Z. K. Liu, J. G. Analytis, J.-H. Chu, H. J. Zhang, B. H. Yan, S.-K. Mo, R. G. Moore, D. H. Lu, I. R. Fisher, S. C. Zhang, Z. Hussain, and Z.-X. Shen, *Phys. Rev. Lett.* **105**, 266401 (2010)].

PHYSICAL REVIEW LETTERS

Contents

Articles published 18 December–31 December 2010

VOLUME 105, NUMBER 26

31 December 2010

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

Holographic Quantum States	260401
Tobias J. Osborne, Jens Eisert, and Frank Verstraete	
Dynamics of Thermalization in Small Hubbard-Model Systems	260402
S. Genway, A. F. Ho, and D. K. Lee	
Parallel State Transfer and Efficient Quantum Routing on Quantum Networks	260501
Christopher Chudzicki and Frederick W. Strauch	
Entanglement of Light-Shift Compensated Atomic Spin Waves with Telecom Light	260502
Y. O. Dudin, A. G. Radnaev, R. Zhao, J. Z. Blumoff, T. A. Kennedy, and A. Kuzmich	
Thermostatistics of Overdamped Motion of Interacting Particles	260601
J. S. Andrade, Jr., G. F. da Silva, A. A. Moreira, F. D. Nobre, and E. M. Curado	
Pink Noise of Ionic Conductance through Single Artificial Nanopores Revisited	260602
C. Tasserit, A. Koutsoubas, D. Lairez, G. Zalczer, and M.-C. Clochard	
Generalization of the Khinchin Theorem to Lévy Flights	260603
Aleksander Weron and Marcin Magdziarz	

Gravitation and Astrophysics

Analytic Modeling of Tidal Effects in the Relativistic Inspiral of Binary Neutron Stars	261101
Luca Baiotti, Thibault Damour, Bruno Giacomazzo, Alessandro Nagar, and Luciano Rezzolla	
Test Bodies and Naked Singularities: Is the Self-Force the Cosmic Censor?	261102
Enrico Barausse, Vitor Cardoso, and Gaurav Khanna	
Unstable Growth of Curvature Perturbations in Nonsingular Bouncing Cosmologies	261301
BingKan Xue and Paul J. Steinhardt	

Elementary Particles and Fields

Pions in Large N Quantum Chromodynamics	261601
Steven Weinberg	
Evidence for ψ' Decays into $\gamma\pi^0$ and $\gamma\eta$	261801
M. Ablikim <i>et al.</i> (BESIII Collaboration)	
2540 km: Bimagic Baseline for Neutrino Oscillation Parameters	261802
Amol Dighe, Srubabati Goswami, and Shamayita Ray	
Laboratory Constraints on Chameleon Dark Energy and Power-Law Fields	261803
J. H. Steffen, A. Upadhye, A. Baumbaugh, A. S. Chou, P. O. Mazur, R. Tomlin, A. Weltman, and W. Wester	
Search for Quark Compositeness with the Dijet Centrality Ratio in pp Collisions at $\sqrt{s} = 7$ TeV	262001
V. Khachatryan <i>et al.</i> (CMS Collaboration)	

(Continued Inside)

 Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

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



Contents (Continued)

Measurement of Single- and Double-Spin Asymmetries in Deep Inelastic Pion Electroproduction with a Longitudinally Polarized Target	262002
H. Avakian <i>et al.</i> (CLAS Collaboration)	
Nuclear Physics	
Perturbative QCD Description of Heavy and Light Flavor Jet Quenching	262301
Guang-You Qin and Abhijit Majumder	
Measurements of the Electric Form Factor of the Neutron up to $Q^2 = 3.4 \text{ GeV}^2$ Using the Reaction $^3\text{He}(\vec{e}, e'n)pp$	262302
S. Riordan <i>et al.</i>	
Beyond Mean-Field Theories with Zero-Range Effective Interactions: A Way to Handle the Ultraviolet Divergence	262501
K. Moghrabi, M. Grasso, G. Colò, and N. Van Giai	
Atomic, Molecular, and Optical Physics	
Guiding Electron Emissions by Excess Negative Charges in Multiply Charged Molecular Anions	263001
Chuan-Gang Ning, Phuong Diem Dau, and Lai-Sheng Wang	
Ultrafast Extreme Ultraviolet Induced Isomerization of Acetylene Cations	263002
Y.H. Jiang, A. Rudenko, O. Herrwerth, L. Foucar, M. Kurka, K.U. Kühnel, M. Lezius, M.F. Kling, J. van Tilborg, A. Belkacem, K. Ueda, S. Düsterer, R. Treusch, C.D. Schröter, R. Moshhammer, and J. Ullrich	
Monitoring and Controlling the Electron Dynamics in Helium with Isolated Attosecond Pulses	263003
Steve Gilbertson, Michael Chini, Ximao Feng, Sabih Khan, Yi Wu, and Zenghu Chang	
Stochastic Coupled Cluster Theory	263004
Alex J. Thom	
Detecting Electron Motion in Atoms and Molecules	263201
Hua-Chieh Shao and Anthony F. Starace	
Asymmetry in Multiple-Electron Capture Revealed by Radiative Charge Transfer in Ar Dimers	263202
J. Matsumoto, A. Leredde, X. Flechard, K. Hayakawa, H. Shiromaru, J. Rangama, C.L. Zhou, S. Guillous, D. Hennecart, T. Muranaka, A. Mery, B. Gervais, and A. Cassimi	
Universal Model for Exoergic Bimolecular Reactions and Inelastic Processes	263203
Bo Gao	
Resonant Scattering of Positronium in Collision with CO_2	263401
S.J. Brawley, A.I. Williams, M. Shipman, and G. Laricchia	
Quantum Plasmonics with Quantum Dot-Metal Nanoparticle Molecules: Influence of the Fano Effect on Photon Statistics	263601
A. Ridolfo, O. Di Stefano, N. Fina, R. Saija, and S. Savasta	
Observing the Phase Space Trajectory of an Entangled Matter Wave Packet	263602
U. Poschinger, A. Walther, K. Singer, and F. Schmidt-Kaler	
Deep Strong Coupling Regime of the Jaynes-Cummings Model	263603
J. Casanova, G. Romero, I. Lizuain, J.J. García-Ripoll, and E. Solano	
Bloch Oscillations of Path-Entangled Photons	263604
Yaron Bromberg, Yoav Lahini, and Yaron Silberberg	
Nonlinear Dynamics, Fluid Dynamics, Classical Optics, etc.	
 Three-Dimensional Light Bullets in Arrays of Waveguides	263901
S. Minardi, F. Eilenberger, Y.V. Kartashov, A. Szameit, U. Röpke, J. Kobelke, K. Schuster, H. Bartelt, S. Nolte, L. Torner, F. Lederer, A. Tünnermann, and T. Pertsch	
 Highly Noninstantaneous Solitons in Liquid-Core Photonic Crystal Fibers	263902
Claudio Conti, Markus A. Schmidt, Philip St. Russell, and Fabio Biancalana	
High Frequency GaAs Nano-Optomechanical Disk Resonator	263903
Lu Ding, Christophe Baker, Pascale Senellart, Aristide Lemaitre, Sara Ducci, Giuseppe Leo, and Ivan Favero	
Low-Threshold Optical Parametric Oscillations in a Whispering Gallery Mode Resonator	263904
J.U. Fürst, D.V. Strekalov, D. Elser, A. Aiello, U.L. Andersen, Ch. Marquardt, and G. Leuchs	
Local Diffusion Theory for Localized Waves in Open Media	263905
Chu-Shun Tian, Sai-Kit Cheung, and Zhao-Qing Zhang	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

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

Cloaked Near-Field Scanning Optical Microscope Tip for Noninvasive Near-Field Imaging	263906
Andrea Alù and Nader Engheta	
Crowd Synchrony and Quorum Sensing in Delay-Coupled Lasers	264101
Jordi Zamora-Munt, C. Masoller, Jordi Garcia-Ojalvo, and Rajarshi Roy	
Turbulence Decay Rate as a Measure of Flow Dimensionality	264501
M. Shats, D. Byrne, and H. Xia	
From Intermittent to Nonintermittent Behavior in Two Dimensional Thermal Convection in a Soap Bubble	264502
F. Seychelles, F. Ingremau, C. Pradere, and H. Kellay	
Plasma and Beam Physics	
Compression of Subrelativistic Space-Charge-Dominated Electron Bunches for Single-Shot Femtosecond Electron Diffraction	264801
T. van Oudheusden, P.L. Pasmans, S.B. van der Geer, M.J. de Loos, M.J. van der Wiel, and O.J. Luiten	
Self-Induced Transparency and Electromagnetic Pulse Compression in a Plasma or an Electron Beam under Cyclotron Resonance Conditions	265001
N.S. Ginzburg, I.V. Zotova, and A.S. Sergeev	
Condensed Matter: Structure, etc.	
Three-Sublattice Ordering of the SU(3) Heisenberg Model of Three-Flavor Fermions on the Square and Cubic Lattices	265301
Tamás A. Tóth, Andreas M. Läuchli, Frédéric Mila, and Karlo Penc	
Weakly Interacting Bose Gas in the One-Dimensional Limit	265302
P. Krüger, S. Hofferberth, I.E. Mazets, I. Lesanovsky, and J. Schmiedmayer	
Controlling and Detecting Spin Correlations of Ultracold Atoms in Optical Lattices	265303
Stefan Trotzky, Yu-Ao Chen, Ute Schnorrberger, Patrick Cheinet, and Immanuel Bloch	
✂ Electron-Phonon Renormalization of the Direct Band Gap of Diamond	265501
Feliciano Giustino, Steven G. Louie, and Marvin L. Cohen	
Ultrafast Melting of Carbon Induced by Intense Proton Beams	265701
A. Pelka, G. Gregori, D.O. Gericke, J. Vorberger, S.H. Glenzer, M.M. Günther, K. Harres, R. Heathcote, A.L. Kritcher, N.L. Kugland, B. Li, M. Makita, J. Mithen, D. Neely, C. Niemann, A. Otten, D. Riley, G. Schaumann, M. Schollmeier, An. Tauschwitz, and M. Roth	
Topological Catastrophe and Isostructural Phase Transition in Calcium	265702
Travis E. Jones, Mark E. Eberhart, and Dennis P. Clougherty	
Temperature-Driven Structural Phase Transition for Trapped Ions and a Proposal for its Experimental Detection	265703
Zhe-Xuan Gong, G.-D. Lin, and L.-M. Duan	
Dynamic Facilitation Picture of a Higher-Order Glass Singularity	265704
Mauro Sellitto, Daniele De Martino, Fabio Caccioli, and Jeferson J. Arenzon	
Structural Order-Disorder Transitions and Phonon Conductivity of Partially Filled Skutterudites	265901
Hyoungchul Kim, Massoud Kaviany, John C. Thomas, Anton Van der Ven, Ctirad Uher, and Baoling Huang	
Universal Additive Effect of Temperature on the Rheology of Amorphous Solids	266001
Joyjit Chattoraj, Christiane Caroli, and Anaël Lemaître	
Transverse Shear Oscillator Investigation of Boundary Lubrication in Weakly Adhered Films	266101
J. Léopoldès and X. Jia	
✂ Reversible Bond Formation in a Gold-Atom–Organic-Molecule Complex as a Molecular Switch	266102
Fabian Mohn, Jascha Repp, Leo Gross, Gerhard Meyer, Matthew S. Dyer, and Mats Persson	
Dips and Rims in Dried Colloidal Films	266103
C. Parneix, P. Vandoolaeghe, V.S. Nikolayev, D. Quéré, J. Li, and B. Cabane	
Condensed Matter: Electronic Properties, etc.	
Single Dirac Cone Topological Surface State and Unusual Thermoelectric Property of Compounds from a New Topological Insulator Family	266401
Y.L. Chen, Z.K. Liu, J.G. Analytis, J.-H. Chu, H.J. Zhang, B.H. Yan, S.-K. Mo, R.G. Moore, D.H. Lu, I.R. Fisher, S.C. Zhang, Z. Hussain, and Z.-X. Shen	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

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

Quantum Confinement Induced Molecular Correlated Insulating State in $\text{La}_4\text{Ni}_3\text{O}_8$	266402
Victor Pardo and Warren E. Pickett	
Route to Ferromagnetism in Organic Polymers	266403
Zsolt Gulácsi, Arno Kampf, and Dieter Vollhardt	
Tunneling into a Luttinger Liquid Revisited	266404
D.N. Aristov, A.P. Dmitriev, I.V. Gornyi, V.Yu. Kachorovskii, D.G. Polyakov, and P. Wölfle	
Stability of the Spontaneous Quantum Hall State in the Triangular Kondo-Lattice Model	266405
Yasuyuki Kato, Ivar Martin, and C.D. Batista	
Limits on Charge Carrier Mobility in Suspended Graphene due to Flexural Phonons	266601
Eduardo V. Castro, H. Ochoa, M.I. Katsnelson, R.V. Gorbachev, D.C. Elias, K.S. Novoselov, A.K. Geim, and F. Guinea	
Role of Polaron Pair Diffusion and Surface Losses in Organic Semiconductor Devices	266602
Thomas Strobel, Carsten Deibel, and Vladimir Dyakonov	
Hybridization and Spin Decoherence in Heavy-Hole Quantum Dots	266603
Jan Fischer and Daniel Loss	
Coherent Description of the Intrinsic and Extrinsic Anomalous Hall Effect in Disordered Alloys on an <i>Ab Initio</i> Level	266604
S. Lowitzer, D. Ködderitzsch, and H. Ebert	
Sharp Transition for Single Polarons in the One-Dimensional Su-Schrieffer-Heeger Model	266605
D.J. Marchand, G. De Filippis, V. Cataudella, M. Berciu, N. Nagaosa, N.V. Prokof'ev, A.S. Mishchenko, and P.C. Stamp	
Lighting Up Multipolar Surface Plasmon Polaritons by Collective Resonances in Arrays of Nanoantennas	266801
V. Giannini, G. Vecchi, and J. Gómez Rivas	
Fundamental Gaps in Finite Systems from Eigenvalues of a Generalized Kohn-Sham Method	266802
Tamar Stein, Helen Eisenberg, Leeor Kronik, and Roi Baer	
Diffusion and Criticality in Undoped Graphene with Resonant Scatterers	266803
P.M. Ostrovsky, M. Titov, S. Bera, I.V. Gornyi, and A.D. Mirlin	
Surface Plasmon Mode Steering and Negative Refraction	266804
Benedikt Stein, Jean-Yves Laluet, Eloïse Devaux, Cyriaque Genet, and Thomas W. Ebbesen	
Regular Atomic Narrowing of Ni, Fe, and V Nanowires Resolved by Two-Dimensional Correlation Analysis	266805
A. Halbritter, P. Makk, Sz. Mackowiak, Sz. Csonka, M. Wawrzyniak, and J. Martinek	
Spin Polarization and Transport of Surface States in the Topological Insulators Bi_2Se_3 and Bi_2Te_3 from First Principles	266806
Oleg V. Yazyev, Joel E. Moore, and Steven G. Louie	
Collection and Concentration of Light by Touching Spheres: A Transformation Optics Approach	266807
A.I. Fernández-Domínguez, S.A. Maier, and J.B. Pendry	
Interlaced Dynamical Decoupling and Coherent Operation of a Singlet-Triplet Qubit	266808
C. Barthel, J. Medford, C.M. Marcus, M.P. Hanson, and A.C. Gossard	
Phase Diagram of Electron Systems near the Superconductor-Insulator Transition	267001
V.L. Pokrovsky, G.M. Falco, and T. Nattermann	
Quasiparticle Scattering Induced by Charge Doping of Iron-Pnictide Superconductors Probed by Collective Vortex Pinning	267002
Cornelis J. van der Beek, Marcin Konczykowski, Shigeru Kasahara, Takahito Terashima, Ryuji Okazaki, Takasada Shibauchi, and Yuji Matsuda	
Anomalies in the Fermi Surface and Band Dispersion of Quasi-One-Dimensional CuO Chains in the High-Temperature Superconductor $\text{YBa}_2\text{Cu}_4\text{O}_8$	267003
Takeshi Kondo, R. Khasanov, J. Karpinski, S.M. Kazakov, N.D. Zhigadlo, Z. Bukowski, M. Shi, A. Bendounan, Y. Sassa, J. Chang, S. Pailh��s, J. Mesot, J. Schmalian, H. Keller, and A. Kaminski	
Density-of-State Oscillation of Quasiparticle Excitation in the Spin Density Wave Phase of $(\text{TMTSF})_2\text{ClO}_4$	267201
S. Uji, M. Kimata, S. Moriyama, J. Yamada, D. Graf, and J.S. Brooks	
Nuclear Spin Cooling Using Overhauser-Field Selective Coherent Population Trapping	267202
M. Issler, E.M. Kessler, G. Giedke, S. Yelin, I. Cirac, M.D. Lukin, and A. Imamoglu	
Magnetism in C- or N-doped MgO and ZnO : A Density-Functional Study of Impurity Pairs	267203
Hua Wu, Alessandro Stroppa, Sung Sakong, Silvia Picozzi, Matthias Scheffler, and Peter Kratzer	

(Continued on Preceding Page)



Selected for a Viewpoint in *Physics*. Please visit <http://physics.aps.org/>.

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

Effective Spin Model for the Spin-Liquid Phase of the Hubbard Model on the Triangular Lattice	267204
Hong-Yu Yang, Andreas M. Läuchli, Frédéric Mila, and Kai Phillip Schmidt	
Unconventional Magnetization Processes and Thermal Runaway in Spin-Ice $\text{Dy}_2\text{Ti}_2\text{O}_7$	267205
D. Slobinsky, C. Castelnovo, R. A. Borzi, A. S. Gibbs, A. P. Mackenzie, R. Moessner, and S. A. Grigera	
Soft Matter, Biological, and Interdisciplinary Physics	
Dynamical Phase Transition in a Model for Evolution with Migration	268101
Bartłomiej Waclaw, Rosalind J. Allen, and Martin R. Evans	
Tubulin Bistability and Polymorphic Dynamics of Microtubules	268102
Hervé Mohrbach, Albert Johner, and Igor M. Kulić	
Reproduction of a Protocell by Replication of a Minority Molecule in a Catalytic Reaction Network	268103
Atsushi Kamimura and Kunihiro Kaneko	
Dynamical Entropy Production in Spiking Neuron Networks in the Balanced State	268104
Michael Monteforte and Fred Wolf	
Shear Banding and Flow-Concentration Coupling in Colloidal Glasses	268301
R. Besseling, L. Isa, P. Ballesta, G. Petekidis, M. E. Cates, and W. C. Poon	
Active Motion of a Janus Particle by Self-Thermophoresis in a Defocused Laser Beam	268302
Hong-Ren Jiang, Natsuhiko Yoshinaga, and Masaki Sano	
Shear Thickening and Migration in Granular Suspensions	268303
Abdoulaye Fall, Anaël Lemaître, François Bertrand, Daniel Bonn, and Guillaume Ovarlez	
Crossover between 2D and 3D Fluid Dynamics in the Diffusion of Islands in Ultrathin Freely Suspended Smectic Films	268304
Zoom Hoang Nguyen, Markus Atkinson, Cheol Soo Park, Joseph MacLennan, Matthew Glaser, and Noel Clark	
Errata	
Erratum: Mode Coupling for Phonons in a Single-Layer Dusty Plasma Crystal [Phys. Rev. Lett. 105 , 085004 (2010)]	269901
Bin Liu, J. Goree, and Yan Feng	
Publisher's Note: Fractional Topological Insulators in Three Dimensions [Phys. Rev. Lett. 105 , 246809 (2010)]	269902
Joseph Maciejko, Xiao-Liang Qi, Andreas Karch, and Shou-Cheng Zhang	
Erratum: <i>s</i> -Wave Interaction in a Two-Species Fermi-Fermi Mixture at a Narrow Feshbach Resonance [Phys. Rev. Lett. 105 , 123201 (2010)]	269903
L. Costa, J. Brachmann, A.-C. Voigt, C. Hahn, M. Taglieber, T. W. Hänsch, and K. Dieckmann	
Erratum: Ultracold Heteronuclear Fermi-Fermi Molecules [Phys. Rev. Lett. 102 , 020405 (2009)]	269904
A.-C. Voigt, M. Taglieber, L. Costa, T. Aoki, W. Wieser, T. W. Hänsch, and K. Dieckmann	
Erratum: Directional Bremsstrahlung from a Ti Laser-Produced X-Ray Source at Relativistic Intensities in the 3–12 keV Range [Phys. Rev. Lett. 105 , 085001 (2010)]	269905
F. Zamponi, A. Lübcke, T. Kämpfer, I. Uschmann, E. Förster, A. P. Robinson, A. Giulietti, P. Köster, L. Labate, T. Levato, and L. A. Gizzi	
Publisher's Note: Cascaded Optical Field Enhancement in Composite Plasmonic Nanostructures [Phys. Rev. Lett. 105 , 246806 (2010)]	269906
V. G. Kravets, G. Zorinants, C. P. Burrows, F. Schedin, C. Casiraghi, P. Klar, A. K. Geim, W. L. Barnes, and A. N. Grigorenko	
Erratum: Helical Electron-Beam Microbunching by Harmonic Coupling in a Helical Undulator [Phys. Rev. Lett. 102 , 174801 (2009)]	269907
E. Hemsing, P. Musumeci, S. Reiche, R. Tikhoplav, A. Marinelli, J. B. Rosenzweig, and A. Gover	
Erratum: All-Optical Control of Gigahertz Acoustic Resonances by Forward Stimulated Interpolarization Scattering in a Photonic Crystal Fiber [Phys. Rev. Lett. 105 , 153901 (2010)]	269908
M. S. Kang, A. Brenn, and P. St. J. Russell	

