

PHYSICAL REVIEW B

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 0163-1829)

PERIODICALS

Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 64, NUMBER 22

CONTENTS

1 DECEMBER 2001-II

Announcement: Electronic-First Publication and Article Numbers i

RAPID COMMUNICATIONS

Structure, structural phase transitions, mechanical properties, defects, etc.

Accessibility of quantum effects in mesomechanical systems (*4 pages*) 220101(R)
S. M. Carr, W. E. Lawrence, and M. N. Wybourne

Magnetism

Model for ferromagnetic nanograins with discrete electronic states (*4 pages*) 220401(R)
Silvia Kleff, Jan von Delft, Mandar M. Deshmukh, and D. C. Ralph
Role of an order-disorder phase transition in increasing the exchange magnetic field in a diluted magnetic semiconductor (*4 pages*) 220402(R)
M. C. Morón and S. Hull
Influence of Nd on the magnetic properties of $\text{Nd}_{1-x}\text{Ca}_x\text{MnO}_3$: An ESR study (*4 pages*) 220403(R)
F. Dupont, F. Millange, S. de Brion, A. Janossy, and G. Chouteau
Nanoscale magnetic-domain structure in colossal magnetoresistance islands (*4 pages*) 220404(R)
Yan Wu, Y. Matsushita, and Y. Suzuki
Magnetic-field-induced collapse of charge-ordered nanoclusters and the colossal magnetoresistance effect in $\text{Nd}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ (*4 pages*) 220405(R)
T. Y. Koo, V. Kiryukhin, P. A. Sharma, J. P. Hill, and S-W. Cheong

Superfluidity and superconductivity

Universal thermal conductivity in the vortex state of cuprate superconductors (*4 pages*) 220501(R)
M. Franz and O. Vafek
Nondiverging vortex pinning barriers at low current densities across the putative elastic vortex-glass-vortex-liquid transition in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ films (*4 pages*) 220502(R)
L. Miu, M. Basset, G. Jakob, H. Rodriguez, and H. Adrian
Anisotropy and pressure dependence of the upper critical field of the ferromagnetic superconductor UGe_2 (*4 pages*) 220503(R)
I. Sheikin, A. Huxley, D. Braithwaite, J. P. Brison, S. Watanabe, K. Miyake, and J. Flouquet
Origin of the zero-resistance anomaly in heavy fermion superconducting CeIrIn_5 : A clue from magnetic-field and Rh-doping studies (*4 pages*) 220504(R)
A. Bianchi, R. Movshovich, M. Jaime, J. D. Thompson, P. G. Pagliuso, and J. L. Sarrao
Magnetic-field scaling of the conductance of epitaxial cuprate-manganite bilayers (*4 pages*) 220505(R)
P. A. Kraus, A. Bhattacharya, and A. M. Goldman
Unusual Hall effect in superconducting MgB_2 films (*4 pages*) 220506(R)
R. Jin, M. Paranthaman, H. Y. Zhai, H. M. Christen, D. K. Christen, and D. Mandrus



CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 64, NUMBER 22

1 DECEMBER 2001-II

Chemical potential shift in $\text{Nd}_{2-x}\text{Ce}_x\text{CuO}_4$: Contrasting behavior between the electron- and hole-doped cuprates (4 pages)	220507(R)
N. Harima, J. Matsuno, A. Fujimori, Y. Onose, Y. Taguchi, and Y. Tokura	
Low-field reorientation transition and anisotropic orientational order of vortex lattices in $\text{LuNi}_2\text{B}_2\text{C}$ (4 pages)	220508(R)
L. Ya. Vinnikov, T. L. Barkov, P. C. Canfield, S. L. Bud'ko, J. E. Ostenson, F. D. Laabs, and V. G. Kogan	
Nearest-neighbor attraction stabilizes staggered currents in the two-dimensional Hubbard model (4 pages)	220509(R)
Tudor D. Stanescu and Philip Phillips	

ARTICLES

Structure, structural phase transitions, mechanical properties, defects, etc.

Non-Arrhenius stretched exponential dielectric relaxation in antiferromagnetic TiBO_3 single crystals (6 pages)	224101
A. A. Bokov, M. Mahesh Kumar, Z. Xu, and Z.-G. Ye	
Statistical dynamics of dislocation systems: The influence of dislocation-dislocation correlations (9 pages)	224102
M. Zaiser, M.-Carmen Miguel, and I. Groma	
Structural ordering transition and repulsion of the giant LO-TO splitting in polycrystalline $\text{Ba}_x\text{Sr}_{1-x}\text{TiO}_3$ (7 pages)	224103
Shou-Yi Kuo, Wen-Yi Liao, and Wen-Feng Hsieh	
Modeling disorder in amorphous silica with embedded clusters: The peroxy bridge defect center (8 pages)	224104
Davide Ricci, Gianfranco Pacchioni, Marek A. Szymanski, Alexander L. Shluger, and A. Marshall Stoneham	
Grain-boundary sliding in nanocrystalline fcc metals (9 pages)	224105
H. Van Swygenhoven and P. M. Derlet	
<i>Ab initio</i> calculation of electromigration effects at polyvacancy clusters in aluminum (5 pages)	224106
J. P. Dekker and A. Lodder	
Prediction of a low-temperature ferroelectric instability in antiphase domain boundaries of strontium titanate (14 pages)	224107
Alexander K. Tagantsev, Eric Courtens, and Ludovic Arzel	
Structure and electrical levels of point defects in monoclinic zirconia (10 pages)	224108
A. S. Foster, V. B. Sulimov, F. Lopez Gejo, A. L. Shluger, and R. M. Nieminen	
Ferroelectric nanodomains in the uniaxial relaxor system $\text{Sr}_{0.61-x}\text{Ba}_{0.39}\text{Nb}_2\text{O}_6\text{:Ce}_x^{3+}$ (5 pages)	224109
P. Lehnen, W. Kleemann, Th. Woike, and R. Pankrath	
Model for the defect-related electrical conductivity in ion-damaged diamond (9 pages)	224110
E. Baskin, A. Reznik, D. Saada, Joan Adler, and R. Kalish	
Cusp-condition constraints and the thermodynamic properties of dense hot hydrogen (12 pages)	224111
K. Nagao, S. A. Bonev, and N. W. Ashcroft	
Hydrogen in jellium: First-principles pair interactions (9 pages)	224112
S. A. Bonev and N. W. Ashcroft	
Characterization of modulation structure in $\text{La}_2\text{CuO}_{4.12}$ by electron diffraction (9 pages)	224113
M. Gao, G. D. Liu, G. C. Che, Z. X. Zhao, and L.-M. Peng	
Determination of the crystal system and space group of BaBiO_3 by convergent-beam electron diffraction and x-ray diffraction using synchrotron radiation (6 pages)	224114
Takuya Hashimoto, Kenji Tsuda, Junichiro Shiono, Junichiro Mizusaki, and Michiyoshi Tanaka	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 64, NUMBER 22

1 DECEMBER 2001-II

Inhomogeneous, disordered, and partially ordered systems

Crystalline ground states of an entropically stabilized quasicrystal model (4 pages)	224201
H. K. Lee, R. H. Swendsen, and M. Widom	
Single-parameter scaling in one-dimensional Anderson localization: Exact analytical solution (11 pages)	224202
Lev I. Deych, A. A. Lisyansky, and B. L. Altshuler	
First-principles study of solute-dislocation interaction in aluminum-rich alloys (8 pages)	224203
S. Vannarat, Marcel H. F. Sluiter, and Yoshiyuki Kawazoe	
Vibrational and relaxational contributions in disaccharide/H ₂ O glass formers (8 pages)	224204
C. Branca, S. Magazù, G. Maisano, and F. Migliardo	
Structural properties of molten silicates from <i>ab initio</i> molecular-dynamics simulations: Comparison between CaO-Al ₂ O ₃ -SiO ₂ and SiO ₂ (10 pages)	224205
Magali Benoit, Simona Ispas, and Mark E. Tuckerman	
Monte Carlo study of a bond-diluted <i>q</i> -state clock model: A simple representation for the glass transition (10 pages)	224206
Saeid Davatolhagh and Bruce R. Patton	
Structure of Ca _{0.4} K _{0.6} (NO ₃) _{1.4} from the glass to the liquid state (9 pages)	224207
Charbel Tengroth, Jan Swenson, Alessandro Isopo, and Lars Börjesson	
Low-temperature saturation of dephasing in heavily doped polyacetylene (5 pages)	224208
A. N. Aleshin, V. I. Kozub, D.-S. Suh, and Y. W. Park	
Unusual spin-glass phase in icosahedral Tb-Mg-Zn quasicrystals (4 pages)	224209
J. Dolinšek, Z. Jagličić, M. A. Chernikov, I. R. Fisher, and P. C. Canfield	
Quantum mechanical relaxation of open quasiperiodic systems (5 pages)	224210
A. Ossipov, M. Weiss, Tsampikos Kottos, and T. Geisel	

Dynamics, dynamical systems, lattice effects, quantum solids, etc.

Vibrational model for the direct-exchange diffusion of substitutional B in Cu (5 pages)	224301
H.-J. Stöckmann, K.-H. Ergezinger, M. Füllgrabe, B. Ittermann, F. Kroll, and D. Peters	
Diffusion parameters of B in Cu determined by β -radiation-detected NMR (11 pages)	224302
M. Füllgrabe, B. Ittermann, H.-J. Stöckmann, F. Kroll, D. Peters, and H. Ackermann	
<i>Ab initio</i> zone-center phonons in LiTaO ₃ : Comparison to LiNbO ₃ (6 pages)	224303
V. Caciuc and A. V. Postnikov	
Corrections to scaling for percolative conduction: Anomalous behavior at small <i>L</i> (4 pages)	224304
Ivica Reš	

Magnetism

Finite-size effects in Heisenberg antiferromagnetic films with a body-centered cubic lattice (6 pages)	224401
Kok-Kwei Pan	
Fermi surface and magnetic properties of Ce _x La _{1-x} Sb alloys (<i>x</i> =0.5,0.9) (9 pages)	224402
Yoshiki Nakanishi, Takuo Sakon, Fumihiko Takahashi, Mitsuhiro Motokawa, Akihiro Uesawa, Masato Kubota, and Takashi Suzuki	
Spin-wave transport in serial loop structures (4 pages)	224403
A. Mir, H. Al Wahsh, A. Akjouj, B. Djafari-Rouhani, L. Dobrzynski, and J. O. Vasseur	
Ferrimagnetic behavior of Nd _{0.67} Sr _{0.33} CoO ₃ (4 pages)	224404
A. Krimmel, M. Reehuis, M. Paraskevopoulos, J. Hemberger, and A. Loidl	
Electric, magnetic, and thermal properties of Ce ₂ NiGe ₃ : A Kondo lattice compound showing spin glass behavior (5 pages)	224405
Dexuan Huo, Junji Sakurai, Tomohiko Kuwai, Yosikazu Isikawa, and Qingfeng Lu	
State hierarchy induced by correlated spin domains in short-range spin glasses (21 pages)	224406
Eytan Domany, Guy Hed, Matteo Palassini, and A. P. Young	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 64, NUMBER 22

1 DECEMBER 2001-II

Magnetic properties of $\text{Fe}_2\text{O}_3(0001)$ thin layers studied by soft x-ray linear dichroism (7 pages)	224407
Susana Gota, Martine Gautier-Soyer, and Maurizio Sacchi	
Aging dynamics of quantum spin glasses of rotors (15 pages)	224408
Malcolm P. Kennett, Claudio Chamon, and Jinwu Ye	
Mapping the magnetic phase diagram of metastable fct Fe/Cu(100) using Co atoms (4 pages)	224409
J. P. Pierce, M. A. Torija, J. Shen, and E. W. Plummer	
Pressure effects on the charge-ordering state in $\text{Sm}_{0.2}\text{Ca}_{0.8}\text{Mn}_{1-x}\text{Ru}_x\text{O}_3$ ($x=0,0.04$) (5 pages)	224410
V. Markovich, E. Rozenberg, G. Gorodetsky, C. Martin, A. Maignan, M. Hervieu, and B. Raveau	
Thermodynamics and spin-tunneling dynamics in ferric wheels with excess spin (14 pages)	224411
Florian Meier and Daniel Loss	
Plaquette-singlet solid state and topological hidden order in a spin-1 antiferromagnetic Heisenberg ladder (9 pages)	224412
Synge Todo, Munehisa Matsumoto, Chitoshi Yasuda, and Hajime Takayama	
Magnetoresistance in ultrafine powders of half-metallic perovskite manganites (6 pages)	224413
H. Sun and Z. Y. Li	
Observation of a spin reorientation in TbCu_2Ge_2 from resonant and nonresonant x-ray scattering (5 pages) ...	224414
C. Song, D. Johnson, D. Wermeille, A. I. Goldman, S. L. Bud'ko, I. R. Fisher, and P. C. Canfield	
Heisenberg exchange parameters of molecular magnets from the high-temperature susceptibility expansion (6 pages)	224415
Heinz-Jürgen Schmidt, Jürgen Schnack, and Marshall Luban	
Neutron scattering studies of the cooperative paramagnet pyrochlore $\text{Tb}_2\text{Ti}_2\text{O}_7$ (10 pages)	224416
J. S. Gardner, B. D. Gaulin, A. J. Berlinsky, P. Waldron, S. R. Dunsiger, N. P. Raju, and J. E. Greedan	
Fermi surface instability in CeRh_2Si_2 under pressure (7 pages)	224417
S. Araki, R. Settai, T. C. Kobayashi, H. Harima, and Y. Onuki	
Anomalous strain effect in $\text{La}_{0.8}\text{Ba}_{0.2}\text{MnO}_3$ epitaxial thin film: Role of the orbital degree of freedom in stabilizing ferromagnetism (5 pages)	224418
Teruo Kanki, Hidekazu Tanaka, and Tomoji Kawai	
Magnetic coupling and site occupancy of impurities in Fe_3Al (4 pages)	224419
B. V. Reddy, D. H. Sastry, S. C. Deevi, and S. N. Khanna	
Superconductivity in $\text{La}_3\text{Rh}_2\text{Ge}_2$ and dense Kondo behavior in $\text{Ce}_3\text{Rh}_2\text{Ge}_2$ (5 pages)	224420
D. Kaczorowski, Yu. Prots, and Yu. Grin	
Mössbauer study of the superspin glass transition in nanogranular $\text{Al}_{49}\text{Fe}_{30}\text{Cu}_{21}$ (6 pages)	224421
J. A. De Toro, M. A. López de la Torre, J. M. Riveiro, J. Bland, J. P. Goff, and M. F. Thomas	
Anisotropic antiferromagnetic spin chains in a transverse field: Reentrant behavior of the staggered magnetization (6 pages)	224422
Yasuhiro Hieida, Kouichi Okunishi, and Yasuhiro Akutsu	
Electrical transport and carrier density collapse in doped manganite thin films (6 pages)	224423
L. M. Wang, H. C. Yang, and H. E. Horng	
Enhanced paramagnetism of the 4d itinerant electrons in the rhodium oxide perovskite SrRhO_3 (5 pages)	224424
K. Yamaura and E. Takayama-Muromachi	
Comparison of two models for spin polarization measurements by Andreev reflection (4 pages)	224425
Y. Ji, G. J. Strijkers, F. Y. Yang, and C. L. Chien	
Temperature dependence of low-lying electronic excitations of LaMnO_3 (7 pages)	224426
M. A. Quijada, J. R. Simpson, L. Vasiliu-Doloc, J. W. Lynn, H. D. Drew, Y. M. Mukovskii, and S. G. Karabashev	
Finite-size effects at diamagnetic phase transitions and in the Condon domain phase (6 pages)	224427
A. Gordon and P. Wyder	
Current-induced metastable resistive states with memory in low-doped manganites (10 pages)	224428
Y. Yuzhelevski, V. Markovich, V. Dikovskiy, E. Rozenberg, G. Gorodetsky, G. Jung, D. A. Shulyatev, and Ya. M. Mukovskii	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 64, NUMBER 22

1 DECEMBER 2001-II

Magnetic coupling in the insulating and metallic ferromagnetic $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ (6 pages)	224429
Pengcheng Dai, J. A. Fernandez-Baca, E. W. Plummer, Y. Tomioka, and Y. Tokura	
Ferromagnetic–spin-glass transition in a four-dimensional random-bond Ising model (5 pages)	224430
Alexander K. Hartmann	
Correlation between magnetic and transport properties in nanocrystalline Fe thin films: A grain-boundary magnetic disorder effect (4 pages)	224431
Z. Sefrioui, J. L. Menéndez, E. Navarro, A. Cebollada, F. Briones, P. Crespo, and A. Hernando	
Superfluidity and superconductivity	
Structural phase control of $(\text{La}_{1.48}\text{Nd}_{0.40}\text{Sr}_{0.12})\text{CuO}_4$ thin films by epitaxial growth technique (6 pages)	224501
I. Tsukada	
Charge current in a ferromagnet-superconductor junction with the pairing state of broken time-reversal symmetry (9 pages)	224502
N. Stefanakis	
Electron dynamics in $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_{4+\delta}$: Evidence for the pseudogap state and unconventional c -axis response (12 pages)	224503
E. J. Singley, D. N. Basov, K. Kurahashi, T. Uefuji, and K. Yamada	
General solution for the complex frequency shift in microwave measurements of thin films (12 pages)	224504
D.-N. Peligrad, B. Nebendahl, M. Mehring, A. Dulčić, M. Požek, and D. Paar	
Doping and temperature dependence of incommensurate antiferromagnetism in underdoped lanthanum cuprates (5 pages)	224505
Feng Yuan, Shiping Feng, Zhao-Bin Su, and Lu Yu	
Superconductivity and partial violation of spin correlation in electron stripes (6 pages)	224506
S. Kuwata	
Effects of misfit stresses on the structure and transport properties of grain boundaries in high- T_c superconducting films (10 pages)	224507
S. V. Bobylev, I. A. Ovid'ko, and A. G. Sheinerman	
Quasiparticle Hall transport of d -wave superconductors in the vortex state (17 pages)	224508
O. Vafek, A. Melikyan, and Z. Tešanović	
Detailed electronic structure studies on superconducting MgB_2 and related compounds (15 pages)	224509
P. Ravindran, P. Vajeeston, R. Vidya, A. Kjekshus, and H. Fjellvåg	
Multiterminal transport measurements: In-plane anisotropy and vortex liquid correlation in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ (7 pages)	224510
T. Björnängen, A. Rydh, and Ö. Rapp	
Pair transfer spectral function at finite temperature in nanometer-scale superconducting grains (9 pages)	224511
R. Rossignoli, N. Canosa, and J. L. Egido	
Bilayer effects on the electronic spectra of doped cuprates (8 pages)	224512
Amit Pratap, Ratan Lal, Govind, and S. K. Joshi	
Reflectionless tunneling in ballistic normal-metal–superconductor junctions (13 pages)	224513
M. Schechter, Y. Imry, and Y. Levinson	
Local quasiparticle density of states in ferromagnet/superconductor nanostructures (8 pages)	224514
I. Baladié and A. Buzdin	
Direct-current Josephson effect in SNS junctions of anisotropic superconductors (9 pages)	224515
Yasuhiro Asano	
Spin and current correlation functions in the d -density-wave state of the cuprates (9 pages)	224516
Sumanta Tewari, Hae-Young Kee, Chetan Nayak, and Sudip Chakravarty	
Simple model for plastic dynamics of a disordered flux-line lattice (10 pages)	224517
Kevin E. Bassler, Maya Paczuski, and Ernesto Altshuler	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 64, NUMBER 22

1 DECEMBER 2001-II

Probing d -wave pairing correlations in the pseudogap regime of the cuprate superconductors via low-energy states near impurities (8 pages)	224518
Daniel E. Sheehy, Inanç Adagideli, Paul M. Goldbart, and Ali Yazdani	
Onset of the vortexlike Nernst signal above T_c in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and $\text{Bi}_2\text{Sr}_{2-y}\text{La}_y\text{CuO}_6$ (10 pages)	224519
Yayu Wang, Z. A. Xu, T. Kakeshita, S. Uchida, S. Ono, Yoichi Ando, and N. P. Ong	
Oxygen ordering in $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$ using Monte Carlo simulation and analytic theory (16 pages)	224520
Dan Mønster, Per-Anker Lindgård, and Niels Hessel Andersen	
Bose-Einstein condensation and long-range phase coherence in the many-particle Schrödinger wave function (20 pages)	224521
J. Mayers	
Quasiparticle lifetimes in a $d_{x^2-y^2}$ superconductor (5 pages)	224522
Daniel Duffy, P. J. Hirschfeld, and Douglas J. Scalapino	
Structure and stability of superfluid ^4He systems with cylindrical symmetry (13 pages)	224523
Leszek Szybisz and Silvina M. Gatica	
Thermodynamic properties of the attractive Hubbard model (15 pages)	224524
Alain Sewer and Hans Beck	
Atomic structure of large-angle grain boundaries $\Sigma 5$ and $\Sigma 13$ in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ and their transport properties (6 pages)	224525
V. S. Boyko and A. M. Levine	
Influence of the boundary resistivity on the proximity effect (4 pages)	224526
C. Ciuhu and A. Lodder	

ERRATA

Erratum: Debye-Waller factors in a quasicrystal [Phys. Rev. B 63 , 014202 (2000)] (1 page)	229901(E)
R. Colella, Y. Zhang, J. P. Sutter, S. N. Ehrlich, and S. W. Kycia	
Erratum: Epitaxial Bain path of tetragonal Fe [Phys. Rev. B 64 , 104431 (2001)] (1 page)	229902(E)
S. L. Qiu, P. M. Marcus, and Hong Ma	

Cumulative Author Index	iii
-------------------------------	-----