

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 70, NUMBER 2

CONTENTS

JULY 2004-1(II)

RAPID COMMUNICATIONS

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

- Charge separation and polymerization of hydrocarbons at an ultrahigh pressure (4 pages) 020101(R)
Martina Mugnai, Gianni Cardini, and Vincenzo Schettino

Magnetism

- Magnetic phase separation in EuB_6 detected by muon spin rotation (4 pages) 020401(R)
M. L. Brooks, T. Lancaster, S. J. Blundell, W. Hayes, F. L. Pratt, and Z. Fisk
- Coherence scale of the two-dimensional Kondo lattice model (4 pages) 020402(R)
F. F. Assaad
- Dynamics of an anisotropic spin dimer system in a strong magnetic field (4 pages) 020403(R)
A. K. Kolezhuk, V. N. Glazkov, H. Tanaka, and A. Oosawa
- Induced spin currents in alkali films (4 pages) 020404(R)
Gerd Bergmann, Funing Song, and Doug Garrett
- Chiral mixed phase in disordered 3d Heisenberg models (4 pages) 020405(R)
S. Bekhechi and B. W. Southern
- NMR and local-density-approximation evidence for spiral magnetic order in the chain cuprate LiCu_2O_2
(4 pages) 020406(R)
A. A. Gippius, E. N. Morozova, A. S. Moskvina, A. V. Zalesky, A. A. Bush, M. Baenitz, H. Rosner,
and S.-L. Drechsler

Superfluidity and superconductivity

- Pseudogap, competing order, and the coexistence of staggered flux and d -wave pairing in high-temperature
superconductors (4 pages) 020501(R)
Sen Zhou and Ziqiang Wang
- Kondo effect and Josephson current through a quantum dot between two superconductors (4 pages) 020502(R)
Mahn-Soo Choi, Minchul Lee, Kicheon Kang, and W. Belzig
- Superconductivity in the geometrically frustrated pyrochlore RbOs_2O_6 (4 pages) 020503(R)
M. Brühwiler, S. M. Kazakov, N. D. Zhigadlo, J. Karpinski, and B. Batlogg
- Order and disorder in the triangular-lattice t - J - V model at $\frac{2}{3}$ electron density (4 pages) 020504(R)
Weihong Zheng, Jaan Oitmaa, Chris J. Hamer, and Rajiv R. P. Singh



Copyright 2004 by The American Physical Society

(Continued)



0163-1829(20040701)70:2;1-J

Two superconducting phases in $\text{CeRh}_{1-x}\text{Ir}_x\text{In}_5$ (4 pages)	020505(R)
M. Nicklas, V. A. Sidorov, H. A. Borges, P. G. Pagliuso, J. L. Sarrao, and J. D. Thompson	
High-field state of the flux-line lattice in the unconventional superconductor CeCoIn_5 (4 pages)	020506(R)
T. Watanabe, Y. Kasahara, K. Izawa, T. Sakakibara, Y. Matsuda, C. J. van der Beek, T. Hanaguri, H. Shishido, R. Settai, and Y. Onuki	

ARTICLES

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

Sodium ion ordering in Na_xCoO_2 : Electron diffraction study (8 pages)	024101
H. W. Zandbergen, M. Foo, Q. Xu, V. Kumar, and R. J. Cava	
Origin of second-harmonic generation in the incommensurate phase of K_2SeO_4 (5 pages)	024102
T. A. Aslanyan	
Thermodynamics from <i>ab initio</i> computations (8 pages)	024103
W. Zhang, J. R. Smith, and X.-G. Wang	
Quantum paraelectricity versus ferroelectricity: Nonlinear polarizability model (5 pages)	024104
A. Bussmann-Holder and A. R. Bishop	
X- and Q-band ENDOR study of the $\text{Fe}^{+}(\text{II})$ center in chlorinated $\text{SrCl}_2\text{:Fe}$ crystals (7 pages)	024105
D. Ghica, S. V. Nistor, H. Vrielinck, F. Callens, and D. Schoemaker	
Dynamic dislocation modeling by combining Peierls Nabarro and Galerkin methods (5 pages)	024106
Christophe Denoual	
Grain-size effects on the ferroelectric behavior of dense nanocrystalline BaTiO_3 ceramics (8 pages)	024107
Zhe Zhao, Vincenzo Buscaglia, Massimo Viviani, Maria Teresa Buscaglia, Liliana Mitoseriu, Andrea Testino, Mats Nygren, Mats Johnsson, and Paolo Nanni	

Inhomogeneous, disordered, and partially ordered systems

ac conductivity of a Coulomb glass from computer simulations (5 pages)	024201
S. A. Basylo, V. A. Onischouk, and A. Rosengren	
Composition-driven changes in lattice sites occupied by indium solutes in Ni_2Al_3 phases (17 pages)	024202
Matthew O. Zacate and Gary S. Collins	
Atomic structure of an Al-Co-Ni decagonal quasicrystalline surface (7 pages)	024203
J. Yuhara, J. Klikovits, M. Schmid, P. Varga, Y. Yokoyama, T. Shishido, and K. Soda	
Emergence of conduction channels in lithium silicate (5 pages)	024204
Heiko Lammert and Andreas Heuer	
Mean-field theory of collective transport with phase slips (29 pages)	024205
Karl Saunders, J. M. Schwarz, M. Cristina Marchetti, and A. Alan Middleton	
First-principles description of phonons in $\text{Ni}_{50}\text{Pt}_{50}$ disordered alloys: The role of relaxation (6 pages)	024206
Subhradip Ghosh, J. B. Neaton, Armin H. Antons, Morrel H. Cohen, and P. L. Leath	
Solution of local-field equations for self-generated glasses (11 pages)	024207
Sangwook Wu, Jörg Schmalian, Gabriel Kotliar, and Peter G. Wolynes	
Scattering theories of the one-dimensional multilayer (11 pages)	024208
N. J. de Lautour, C. T. Tindle, and S. M. Tan	

Electronic transport properties in amorphous and crystalline FeZr_2 examined via the density of states (6 pages)	024209
M. Dikeakos, Z. Altounian, and M. Fradkin	
Orbital hybridizations versus the Fermi surface–Brillouin zone interaction in strongly hybridizing Al–Li–Cu 1/1-1/1-1/1 approximant (12 pages)	024210
Hirokazu Sato, Tsunehiro Takeuchi, and Uichiro Mizutani	
Dynamics, dynamical systems, lattice effects, quantum solids, etc.	
Quasi-Mössbauer effect in two dimensions (9 pages)	024301
Dennis D. Dietrich and Lester L. Hirst	
Nonequilibrium transfer and decoherence in quantum impurity problems (14 pages)	024302
Holger Baur, Andrea Fubini, and Ulrich Weiss	
Elastic wave propagation through a random array of dislocations (15 pages)	024303
Agnes Maurel, Jean-François Mercier, and Fernando Lund	
Magnetism	
Disorder effects near a magnetic instability in $\text{CePtSi}_{1-x}\text{Ge}_x$ ($x=0, 0.1$) (14 pages)	024401
Ben-Li Young, D. E. MacLaughlin, M. S. Rose, K. Ishida, O. O. Bernal, H. G. Lukefahr, K. Heuser, G. R. Stewart, N. P. Butch, P.-C. Ho, and M. B. Maple	
Switching-field distribution in amorphous magnetic bistable microwires (5 pages)	024402
R. Varga, K. L. García, M. Vázquez, A. Zhukov, and P. Vojtanik	
Effect of pressure on magnetic and transport properties of $\text{CaMn}_{1-x}\text{Ru}_x\text{O}_3$ ($x=0-0.15$): Collapse of ferromagnetic phase in $\text{CaMn}_{0.9}\text{Ru}_{0.1}\text{O}_3$ (5 pages)	024403
V. Markovich, I. Fita, R. Puzniak, E. Rozenberg, C. Martin, A. Wisniewski, A. Maignan, B. Raveau, Y. Yuzhelevskii, and G. Gorodetsky	
Theory of phonon-assisted forbidden optical transitions in spin-gap systems (8 pages)	024404
O. Cépas and T. Ziman	
Instability of planar vortices in the two-dimensional easy-plane Heisenberg model with distance-dependent interactions (8 pages)	024405
Myoung Won Cho and Seunghwan Kim	
Impurity effects at finite temperature in the two-dimensional $S=1/2$ Heisenberg antiferromagnet (14 pages)	024406
Kaj H. Höglund and Anders W. Sandvik	
Theoretical and experimental study of the magnetic structure of TlCo_2Se_2 (7 pages)	024407
Raquel Lizárraga, Sabina Ronneteg, Rolf Berger, Anders Bergman, Peter Mohn, Olle Eriksson, and Lars Nordström	
Structural origin of dipole x-ray resonant scattering in the low-temperature phase of $\text{Nd}_{0.5}\text{Sr}_{0.5}\text{MnO}_3$ (10 pages)	024408
Javier Herrero-Martín, Joaquín García, Gloria Subías, Javier Blasco, and Maria Concepción Sánchez	
Mesoscopic phase separation in Na_xCoO_2 ($0.65 \leq x \leq 0.75$) (9 pages)	024409
P. Carretta, M. Mariani, C. B. Azzoni, M. C. Mozzati, I. Bradarić, I. Savić, A. Feher, and J. Šebek	

Magnetic field melting of the charge-ordered state of $\text{La}_{1/2}\text{Ca}_{1/2}\text{MnO}_3$: A local structure perspective (7 pages)	024410
T. A. Tyson, M. Deleon, M. Croft, V. G. Harris, C.-C. Kao, J. Kirkland, and S-W. Cheong	
Electronic and magnetic properties of bulk and (100) and (111) surfaces of MnPt_3 : An <i>ab initio</i> study (6 pages)	024411
M. P. J. Punkkinen, L. Vitos, K. Kokko, K. Laaksonen, and I. J. Vayrynen	
Anisotropic property of magnetic dipole in bulk, surface, and overlayer systems (6 pages)	024412
Tamio Oguchi and Tatsuya Shishidou	
Stripe order and magnetic transitions in $\text{La}_{2-x}\text{Sr}_x\text{NiO}_4$ (6 pages)	024413
P. G. Freeman, A. T. Boothroyd, D. Prabhakaran, M. Enderle, and C. Niedermayer	
Complex interplay of 3d and 4f magnetism in $\text{La}_{1-x}\text{Gd}_x\text{MnO}_3$ (8 pages)	024414
J. Hemberger, S. Lobina, H.-A. Krug von Nidda, N. Tristan, V. Yu. Ivanov, A. A. Mukhin, A. M. Balbashov, and A. Loidl	
Cooperative Jahn-Teller distortion in PrO_2 (11 pages)	024415
C. H. Gardiner, A. T. Boothroyd, P. Pattison, M. J. McKelvy, G. J. McIntyre, and S. J. S. Lister	
Field-induced magnetic and structural domain alignment in PrO_2 (11 pages)	024416
C. H. Gardiner, A. T. Boothroyd, M. J. McKelvy, G. J. McIntyre, and K. Prokeř	
Domain-wall dynamics driven by adiabatic spin-transfer torques (10 pages)	024417
Z. Li and S. Zhang	
Dissociation of spin objects in geometrically frustrated CdFe_2O_4 (5 pages)	024418
K. Kamazawa, S. Park, S.-H. Lee, T. J. Sato, and Y. Tsunoda	
Evidence of two different Mn states in $\text{CaCu}_3\text{Mn}_4\text{O}_{12}$ derivatives with colossal magnetoresistance (6 pages)	024419
J. Sanchez-Benitez, C. Prieto, A. de Andres, J. A. Alonso, M. J. Martinez-Lope, and M. T. Casais	
Spin dynamics in an ultrathin Fe film in the vicinity of the superparamagnetic/ferromagnetic phase transition (4 pages)	024420
S. J. Steinmuller, M. Tselepi, G. Wastlbauer, V. Strom, D. M. Gillingham, A. Ionescu, and J. A. C. Bland	
NMR and dc susceptibility studies of NaVGe_2O_6 (10 pages)	024421
B. Pedrini, J. L. Gavilano, D. Rau, H. R. Ott, S. M. Kazakov, J. Karpinski, and S. Wessel	
Effects of dissipation on disordered quantum spin models (12 pages)	024422
L. F. Cugliandolo, D. R. Grempel, G. Lozano, and H. Lozza	
Magnetic phase transition and spin-reorientation transition of Cu/Ni/Fe/Cu(001) studied by photoemission electron microscopy (6 pages)	024423
H. W. Zhao, C. Won, Y. Z. Wu, A. Scholl, A. Doran, and Z. Q. Qiu	
Antiferromagnetic phase transitions in an ordered $\text{Pt}_3\text{Fe(111)}$ film studied by neutron diffraction (5 pages) . . .	024424
V. V. Krishnamurthy, I. Zoto, G. J. Mankey, J. L. Robertson, S. Maat, Eric E. Fullerton, I. Nwagwu, and J. K. Akujieze	
Magnetization and magnetotransport of $\text{LBaCo}_2\text{O}_{5.5}$ ($L=\text{Gd, Eu}$) single crystals (8 pages)	024425
Z. X. Zhou, S. McCall, C. S. Alexander, J. E. Crow, P. Schlottmann, S. N. Barilo, S. V. Shiryayev, G. L. Bychkov, and R. P. Guertin	

Interface structure and magnetism of magnetic tunnel junctions with a Co_2MnSi electrode (7 pages)	024426
J. Schmalhorst, S. Kämmerer, M. Sacher, G. Reiss, A. Hütten, and A. Scholl	
First-principles calculation of the intersublattice exchange interactions and Curie temperatures of the full Heusler alloys Ni_2MnX ($X=\text{Ga}, \text{In}, \text{Sn}, \text{Sb}$) (5 pages)	024427
E. Şaşıoğlu, L. M. Sandratskii, and P. Bruno	
Superfluidity and superconductivity	
Flux melting in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$: Incorporating both electromagnetic and Josephson couplings (14 pages)	024501
Sandeep Tyagi and Yadin Y. Goldschmidt	
Influence of twin boundaries on the flux-line-lattice structure in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$: A small-angle neutron scattering (7 pages)	024502
Ch. Simon, A. Pautrat, G. Poullain, C. Goupil, C. Leblond-Harnois, X. Chaud, and A. Brûlet	
Superconducting spiral phase in the two-dimensional t - J model (13 pages)	024503
Oleg P. Sushkov and Valeri N. Kotov	
Carbon-substitution effect on the electronic properties of MgB_2 single crystals (7 pages)	024504
T. Masui, S. Lee, and S. Tajima	
Phase separation in $\text{La}_{1.85-1.5x}\text{Sr}_{0.15+1.5x}\text{Cu}_{1-x}\text{Mn}_x\text{O}_4$ (6 pages)	024505
Changjin Zhang, J. S. Kim, B. H. Kim, and Y. W. Park	
Single-crystal growth and investigation of Na_xCoO_2 and $\text{Na}_x\text{CoO}_2 \cdot y\text{H}_2\text{O}$ (8 pages)	024506
D. P. Chen, H. C. Chen, A. Maljuk, A. Kulakov, H. Zhang, P. Lemmens, and C. T. Lin	
Linear response theory around a localized impurity in the pseudogap regime of an anisotropic superconductor: Precursor pairing versus d -density-wave scenario (9 pages)	024507
N. Andrenacci, G. G. N. Angilella, H. Beck, and R. Pucci	
Superconducting vortex state in a mesoscopic disk containing a blind hole (15 pages)	024508
G. R. Berdiyrov, M. V. Milošević, B. J. Baelus, and F. M. Peeters	
Flux-pinning properties of superconducting films with arrays of blind holes (5 pages)	024509
S. Raedts, A. V. Silhanek, M. J. Van Bael, and V. V. Moshchalkov	
Depairing currents in superconducting films of Nb and amorphous MoGe (5 pages)	024510
A. Yu. Rusanov, M. B. S. Hesselberth, and J. Aarts	
Vortex fluctuations in high- T_c thin films close to the resistive transition (9 pages)	024511
Örjan Festin, Peter Svedlindh, Fredrik Rönnung, and Dag Winkler	
Structure and energetics of helium films on alkali substrates (9 pages)	024512
Massimo Boninsegni and Leszek Szybisz	
Generic incommensurate transition in the two-dimensional boson Hubbard model (12 pages)	024513
Fabien Alet and Erik S. Sørensen	
Study of the triangular lattice tV model near $x=\frac{1}{3}$ (8 pages)	024514
O. I. Motrunich and Patrick A. Lee	
Large thermoelectric effects in unconventional superconductors (9 pages)	024515
T. Löfwander and M. Fogelström	
Global phase diagram of the high- T_c cuprates (17 pages)	024516
Han-Dong Chen, Sylvain Capponi, Fabien Alet, and Shou-Cheng Zhang	

CONTENTS - Continued

PHYSICAL REVIEW B	THIRD SERIES, VOLUME 70, NUMBER 2	JULY 2004-1(II)
Pressure-dependent ground states and fermiology in β -(BDA-TTP) $_2$ MCl $_4$ (M =Fe,Ga) (8 pages)		024517
E. S. Choi, D. Graf, J. S. Brooks, J. Yamada, H. Akutsu, K. Kikuchi, and M. Tokumoto		
c -axis tunneling spectra in high- T_c superconductors in the presence of a d -charge-density wave (11 pages)		024518
A. Greco and R. Zeyher		
π -SQUIDs based on Josephson contacts between high- T_c and low- T_c superconductors (12 pages)		024519
H. J. H. Smilde, Ariando, D. H. A. Blank, H. Hilgenkamp, and H. Rogalla		
Coherent response of a low- T_c Josephson junction to an ultrafast laser pulse (12 pages)		024520
P. Lucignano, G. Rotoli, E. Santamato, and A. Tagliacozzo		
Spin magnetization of small metallic grains (4 pages)		024521
M. Schechter		
Origin of the hump structure in the in-plane optical conductivity of high- T_c cuprates based on a SU(2) slave-boson theory (8 pages)		024522
Jae-Hyeon Eom, Sung-Sik Lee, Ki-Seok Kim, and Sung-Ho Suck Salk		
Localized rotating-modes in capacitively coupled intrinsic Josephson junctions: Systematic study of branching structure and collective dynamical instability (6 pages)		024523
M. Machida and T. Koyama		
Noise rectification by a superconducting loop with two weak links (6 pages)		024524
Jorge Berger		
Relaxation in bulk RBa $_2$ Cu $_3$ O $_{7-\delta}$ superconductors (9 pages)		024525
M. Jirsa, T. Nishizaki, N. Kobayashi, M. Muralidhar, and M. Murakami		
ERRATA		
Erratum: Critical current density from magnetization hysteresis data using the critical-state model [Phys. Rev. B 64 , 014508 (2001)] (1 page)		029901(E)
A. A. Tulapurkar		
Publisher's Note: Transport properties of large-angle grain boundaries containing point defects in YBa $_2$ Cu $_3$ O $_{7-\delta}$ [Phys. Rev. B 69 , 212502 (2004)] (1 page)		029902(E)
V. S. Boyko, R. Ya. Kezerashvili, and A. M. Levine		
Publisher's Note: Spin-polaron model: Transport properties of EuB $_6$ [Phys. Rev. B 69 , 134423 (2004)] (1 page)		029903(E)
Jayita Chatterjee, Unjong Yu, and B. I. Min		
Cumulative Author Index		i