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 69, NUMBER 17 *CONTENTS* **MAY 2004-1(I)**

BRIEF REPORTS

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

Field-induced polarization rotation in (001)-cut $Pb(Mg_{1/3}Nb_{2/3})_{0.76}Ti_{0.24}O_3$ *(4 pages)* 172101
R. R. Chien, V. Hugo Schmidt, Chi-Shun Tu, L.-W. Hung, and H. Luo

Stability of the chevron domain at triple-line reconstructions *(4 pages)* 172102
Frédéric Lançon, Tamara Radetic, and Ulrich Dahmen

Structure and stability of rare-earth and transition-metal oxides *(4 pages)* 172103
Luca Marsella and Vincenzo Fiorentini

Universal binding-energy relation for crystals that accounts for surface relaxation *(4 pages)* 172104
Robin L. Hayes, Michael Ortiz, and Emily A. Carter

Incorporation of local structure in continuous dislocation theory *(4 pages)* 172105
R. LeSar and J. M. Rickman

Inhomogeneous, disordered, and partially ordered systems

Microchemical inhomogeneity of multicomponent systems and its evaluation from interatomic potentials *(4 pages)* 172201
J. H. Li, H. B. Guo, W. S. Lai, and B. X. Liu

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

Phonons and magnetic excitations in the Mott insulator $LaTiO_3$ *(4 pages)* 172301
M. N. Iliev, A. P. Litvinchuk, M. V. Abrashev, V. N. Popov, J. Cmaidalka, B. Lorenz, and R. L. Meng

Magnetism

Scaling approach to itinerant quantum critical points *(3 pages)* 172401
Catherine Pépin, Jérome Rech, and Revaz Ramazashvili

Magnetic response of dilute cobalt nanoparticles in an organic matrix: The effects of aging and interface chemistry *(4 pages)* 172402
J. P. Wilcoxon, E. L. Venturini, and P. Provencio

Temperature-driven dynamical phase transition: Spin reorientation in antiferromagnetism *(4 pages)* 172403
D. S. Deng, X. F. Jin, and Ruibao Tao

Nonlocal density functional study of the MnO_6 cluster *(4 pages)* 172404
P. Młynarski

Modification of interface magnetic anisotropy by ion irradiation on epitaxial Cu/Ni/Cu(002)/Si(100) films *(4 pages)* 172405
J.-S. Lee, K.-B. Lee, Y. J. Park, T. G. Kim, J. H. Song, K. H. Chae, J. Lee, C. N. Whang, K. Jeong, D.-H. Kim, and S.-C. Shin

World Year of PHYSICS 2005
www.physics2005.org

Copyright 2004 by The American Physical Society

0163-1829(20040501)69:17;1-Q

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 69, NUMBER 17** **MAY 2004-1(I)**

Pressure effects on the Kondo-lattice compound $Ce_2Pd_3Si_5$ *(3 pages)* 172406
Melike Abliz, Hedo Masato, Jiro Kitagawa, Yoshiya Uwatoko, and Masayasu Ishikawa
Magnetocrystalline anisotropy and orbital polarization in ferromagnetic transition metals *(4 pages)* 172407
Yuannan Xie and John A. Blackman
Role of the barrier in spin-dependent tunneling addressed with superconductor spectroscopy *(4 pages)* 172408
C. H. Kant, J. T. Kohlhepp, H. J. M. Swagten, B. Koopmans, and W. J. M. de Jonge

Superfluidity and superconductivity

Frustrated two-dimensional Josephson junction array near incommensurability *(4 pages)* 172501
In-Cheol Baek, Young-Je Yun, and Mu-Yong Choi
Second sound from cavitation in superfluid ^{4}He *(3 pages)* 172502
Andrey Ganshin and Norbert Mulders

ARTICLES

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

Absence of low-temperature phase transitions in epitaxial $BaTiO_3$ thin films *(5 pages)* 174101
D. A. Tenne, X. X. Xi, Y. L. Li, L. Q. Chen, A. Soukiassian, M. H. Zhu, A. R. James, J. Lettieri, D. G. Schlom, W. Tian, and X. Q. Pan
Multipole representation of the elastic field of dislocation ensembles *(7 pages)* 174102
Zhiqiang Wang, Nasr Ghoniem, and Richard LeSar
Crystal-melt interfacial free energies and mobilities in fcc and bcc Fe *(9 pages)* 174103
D. Y. Sun, M. Asta, and J. J. Hoyt
Ionic displacement correlations from the zero-point motion of pressurized solid argon *(5 pages)* 174104
Hadley M. Lawler, Eric K. Chang, and Eric L. Shirley
Decay kinetics in low-energy emission of KCl:Tl: A Jahn-Teller model interpretation *(5 pages)* 174105
P. Fabeni, D. Mugnai, G. P. Pazzi, and A. Ranfagni
Texture of tetragonal α-$FeSi_2$ films on Si(001) *(11 pages)* 174106
C. Detavernier, C. Lavoie, J. Jordan-Sweet, and A. S. Özcan
Lattice instabilities and ferroelectricity in $AScO_3$ perovskite alloys *(10 pages)* 174107
S. V. Halilov, M. Fornari, and D. J. Singh
Hydrogen-affected cross-slip process in fcc nickel *(6 pages)* 174108
M. Wen, S. Fukuyama, and K. Yokogawa
dc electric-field dependence of the dielectric constant in polar dielectrics: Multipolarization mechanism model *(8 pages)* 174109
Chen Ang and Zhi Yu
Cu^{2+} impurities in fluorite-type crystals: Mechanisms favoring an off-center motion *(8 pages)* 174110
P. García Fernández, J. A. Aramburu, M. T. Barriuso, and M. Moreno
Mechanisms for the reconstructive phase transition between the $B1$ and $B2$ structure types in NaCl and PbS *(5 pages)* 174111
Harold T. Stokes, Dorian M. Hatch, Jianjun Dong, and James P. Lewis

Inhomogeneous, disordered, and partially ordered systems

Origin of the complex dielectric relaxation spectra of molecular glass formers *(7 pages)* 174201
F. J. Bermejo, W. S. Howells, M. Jiménez-Ruiz, M. A. González, D. L. Price, M. L. Saboungi, and C. Cabrillo

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 69, NUMBER 17** **MAY 2004-1(I)**

Temperature- and composition-driven changes in site occupation of indium solutes in $Gd_{1+3x}Al_{2-3x}$ *(9 pages)* 174202
Matthew O. Zacate and Gary S. Collins

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

Polaron formation for nonlocal electron-phonon coupling: A variational wave-function study *(8 pages)* 174301
C. A. Perroni, E. Piegari, M. Capone, and V. Cataudella
Quantum hydrogen vibrational dynamics in LiH: Neutron-scattering measurements and variational Monte Carlo simulations *(9 pages)* 174302
J. Boronat, C. Cazorla, D. Colognesi, and M. Zoppi
Generating and detecting phonon solitons in MgO using picosecond ultrasonics *(6 pages)* 174303
Wisit Singhsomroje and Humphrey J. Maris

Magnetism

Micromagnetic analysis of exchange-coupled hard-soft planar nanocomposites *(19 pages)* 174401
Giovanni Asti, Massimo Solzi, Massimo Ghidini, and Franco M. Neri
Thickness-dependent magnetic excitations in Permalloy films with nonuniform magnetization *(9 pages)* 174402
J. Ben Youssef, N. Vukadinovic, D. Billet, and M. Labrune
Spin current carried by magnons *(5 pages)* 174403
Baigeng Wang, Jian Wang, Jin Wang, and D. Y. Xing
Spectrum and transition rates of the *XX* chain analyzed via Bethe ansatz *(9 pages)* 174404
Daniel Biegel, Michael Karbach, Gerhard Müller, and Klaus Wiele
High-field magnetization of $S=1$ antiferromagnetic bond-alternating chain compounds *(7 pages)* 174405
Yasuo Narumi, Koichi Kindo, Masayuki Hagiwara, Hiroki Nakano, Akira Kawaguchi, Kouichi Okunishi, and Masanori Kohno
Evolution of the Fermi surface and the oscillatory exchange coupling across Cr and Cr-based alloys *(5 pages)* 174406
R. J. Hughes, S. B. Dugdale, Zs. Major, M. A. Alam, T. Jarlborg, E. Bruno, and B. Ginatempo
Monte Carlo simulation of a planar rotator model with symmetry-breaking fields *(7 pages)* 174407
E. Rastelli, S. Regina, and A. Tassi
Effect of interface bonding on spin-dependent tunneling from the oxidized Co surface *(7 pages)* 174408
K. D. Belashchenko, E. Y. Tsymbal, M. van Schilfgaarde, D. A. Stewart, I. I. Oleynik, and S. S. Jaswal
Z_3 quantum criticality in a spin-$\frac{1}{2}$ chain model *(4 pages)* 174409
P. Lecheminant and E. Orignac
Smeared phase transition in a three-dimensional Ising model with planar defects: Monte Carlo simulations *(9 pages)* 174410
Rastko Sknepnek and Thomas Vojta
Diameter dependence of ferromagnetic spin moment in Au nanocrystals *(5 pages)* 174411
H. Hori, Y. Yamamoto, T. Iwamoto, T. Miura, T. Teranishi, and M. Miyake
Influence of a uniform current on collective magnetization dynamics in a ferromagnetic metal *(12 pages)* 174412
J. Fernández-Rossier, M. Braun, A. S. Núñez, and A. H. MacDonald
Origin of circular dichroism in simple antiferromagnetic fluorides *(7 pages)* 174413
D. J. Lockwood, R. M. White, and W. M. Yen
Orbital polarization, surface enhancement and quantum confinement in nanocluster magnetism *(14 pages)* 174414
Xiangang Wan, Lei Zhou, Jinming Dong, T. K. Lee, and Ding-sheng Wang
Resonant x-ray scattering from $UAs_{0.8}Se_{0.2}$: Multi-$\boldsymbol{k}$ configurations *(5 pages)* 174415
N. Bernhoeft, J. A. Paixão, C. Detlefs, S. B. Wilkins, P. Javorský, E. Blackburn, and G. H. Lander
Updated tests of scaling and universality for spin-spin correlations in the two- and three-dimensional spin-*S* Ising models using high-temperature expansions *(10 pages)* 174416
P. Butera and M. Comi

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 69, NUMBER 17** **MAY 2004-1(I)**

Size-dependent effects on the magnetization dynamics of Condon domains *(10 pages)* 174417
A. Gordon, N. Logoboy, and W. Joss
High-temperature weak ferromagnetism on the verge of a metallic state: Impact of dilute Sr doping on $BaIrO_3$ *(5 pages)* 174418
G. Cao, X. N. Lin, S. Chikara, V. Durairaj, and E. Elhami
Raman and infrared measurements on the $[Mn_4]_2$ dimer: A single-molecule magnet with an exchange bias *(6 pages)* 174419
J. M. North, N. S. Dalal, D. Foguet-Albiol, A. Vinslava, and G. Christou
X-band ESR determination of Dzyaloshinsky-Moriya interaction in the two-dimensional $SrCu_2(BO_3)_2$ system *(8 pages)* 174420
Andrej Zorko, Denis Arčon, Hans van Tol, Louis Claude Brunel, and Hiroshi Kageyama
Critical properties of the Fermi-Bose Kondo and pseudogap Kondo models: Renormalized perturbation theory *(16 pages)* 174421
Marijana Kirćan and Matthias Vojta
Phase-resolved pulsed precessional motion at a Schottky barrier *(5 pages)* 174422
M. Buess, T. P. J. Knowles, U. Ramsperger, D. Pescia, and C. H. Back
Magnetic ordering and superconductivity in the $R_2Ir_3Ge_5$ (R = Y, La, Ce–Nd, Gd–Tm, Lu) system *(13 pages)* 174423
Yogesh Singh and S. Ramakrishnan
Anisotropic manifestation of short-range magnetic correlations in $Ce_{0.6}La_{0.4}RhIn_5$ *(5 pages)* 174424
V. F. Correa, L. Tung, S. M. Hollen, P. G. Pagliuso, N. O. Moreno, J. C. Lashley, J. L. Sarrao, and A. H. Lacerda
Magnetism in the dilute Kondo lattice model *(6 pages)* 174425
M. Gulacsi, I. P. McCulloch, A. Juozapavicius, and A. Rosengren
Imaging the dephasing of spin wave modes in a square thin film magnetic element *(5 pages)* 174426
A. Barman, V. V. Kruglyak, R. J. Hicken, J. M. Rowe, A. Kundrotaite, J. Scott, and M. Rahman
Magnetic properties of $Sm_3Fe_{28.1-x}Co_xMo_{0.9}$ (x = 0,4,8,12,14,16) compounds *(11 pages)* 174427
W. X. Li, J. G. Guo, B. D. Liu, J. Shen, G. H. Wu, N. X. Chen, and F. M. Yang
Normal modes of spin excitations in magnetic nanoparticles *(12 pages)* 174428
Marcos Grimsditch, Gary K. Leaf, Hans G. Kaper, Dmitry A. Karpeev, and Robert E. Camley
Effect of electron correlations on the electronic and magnetic structure of Ti-doped α-hematite *(8 pages)* 174429
Amrit Bandyopadhyay, Julian Velev, W. H. Butler, Sanjoy K. Sarker, and O. Bengone
Thermodynamic properties of ferromagnetic mixed-spin chain systems *(7 pages)* 174430
Noboru Fukushima, Andreas Honecker, Stefan Wessel, and Wolfram Brenig
Magnetization in the case of anisotropic exchange interaction *(9 pages)* 174431
Huai-Yu Wang, Chong-Yu Wang, and En-Ge Wang
$EuMn_2Ge_2$ and $EuMn_2Si_2$: Magnetic structures and valence transitions *(9 pages)* 174432
M. Hofmann, S. J. Campbell, and A. V. J. Edge
Anomaly in the dielectric response at the charge-orbital-ordering transition of $Pr_{0.67}Ca_{0.33}MnO_3$ *(6 pages)* 174433
Silvana Mercone, Alexandre Wahl, Alain Pautrat, Michaël Pollet, and Charles Simon

Superfluidity and superconductivity

Anisotropy in the incommensurate spin fluctuations of Sr_2RuO_4 *(6 pages)* 174501
T. Nagata, M. Urata, H. Kawano-Furukawa, H. Yoshizawa, H. Kadowaki, and Pengcheng Dai
Mixed-parity superconductivity in centrosymmetric crystals *(5 pages)* 174502
I. A. Sergienko
Critical parameters of disordered nanocrystalline superconducting Chevrel-phase $PbMo_6S_8$ *(9 pages)* 174503
H. J. Niu and D. P. Hampshire
Induced ferromagnetism due to superconductivity in superconductor-ferromagnet structures *(5 pages)* 174504
F. S. Bergeret, A. F. Volkov, and K. B. Efetov

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 69, NUMBER 17** **MAY 2004-1(I)**

Nodeless pairing state in single-crystal $YBa_2Cu_3O_7$ *(13 pages)* 174505
Dale R. Harshman, W. J. Kossler, X. Wan, Anthony T. Fiory, A. J. Greer, D. R. Noakes, C. E. Stronach, E. Koster, and John D. Dow

Thermodynamic properties of excess-oxygen-doped $La_2CuO_{4.11}$ near a simultaneous transition to superconductivity and long-range magnetic order *(8 pages)* 174506
G. A. Jorge, M. Jaime, L. Civale, C. D. Batista, B. L. Zink, F. Hellman, B. Khaykovich, M. A. Kastner, Y. S. Lee, and R. J. Birgeneau

Evidence for an incommensurate magnetic resonance in $La_{2-x}Sr_xCuO_4$ *(7 pages)* 174507
J. M. Tranquada, C. H. Lee, K. Yamada, Y. S. Lee, L. P. Regnault, and H. M. Rønnow

Interplay of structural and electronic phase separation in single-crystalline $La_2CuO_{4.05}$ studied by neutron and Raman scattering *(8 pages)* 174508
V. P. Gnezdilov, Yu. G. Pashkevich, J. M. Tranquada, P. Lemmens, G. Güntherodt, A. V. Yeremenko, S. N. Barilo, S. V. Shiryaev, L. A. Kurnevich, and P. M. Gehring

Angle-dependent magnetoresistance of the layered organic superconductor κ-$(ET)_2Cu(NCS)_2$: Simulation and experiment *(14 pages)* 174509
P. A. Goddard, S. J. Blundell, J. Singleton, R. D. McDonald, A. Ardavan, A. Narduzzo, J. A. Schlueter, A. M. Kini, and T. Sasaki

Cumulative Author Index i