

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 61, NUMBER 21

CONTENTS

1 JUNE 2000-I

BRIEF REPORTS

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

- Identification of multisite behavior in a broadly emitting transition-metal system using pressure 14 263
Yongrong Shen, Kevin L. Bray, Marek Grinberg, Justyna Barzowska, and Irena Sókólska
- Analysis of tracks induced by cluster ions in CaF_2 14 267
G. Szenes
- Order-disorder transition in hcp binary alloys: Next-nearest-neighbor interactions 14 271
Masato Shimono and Hidehiro Onodera
- Generalized phase-field model for computer simulation of grain growth in anisotropic systems 14 275
A. Kazaryan, Y. Wang, S. A. Dregia, and Bruce R. Patton
- Long-range coupling interactions in ferroelectric superlattices 14 279
Jian Shen and Yu-qiang Ma
- Monoclinic phase of $\text{PbZr}_{0.52}\text{Ti}_{0.48}\text{O}_3$ ceramics: Raman and phenomenological thermodynamic studies 14 283
A. G. Souza Filho, K. C. V. Lima, A. P. Ayala, I. Guedes, P. T. C. Freire, J. Mendes Filho, E. B. Araújo,
and J. A. Eiras

Inhomogeneous, disordered, and partially ordered systems

- Structural properties of supercooled liquid silicon by molecular dynamics 14 287
N. Jakse, Y. Kadiri, and J.-L. Bretonnet
- Structural model for the $\text{Al}_{72}\text{Ni}_{20}\text{Co}_8$ decagonal quasicrystals 14 291
Yanfa Yan and Stephen J. Pennycook
- Spectral hole burning and x-ray irradiation in Eu^{3+} -doped glass 14 295
Masayuki Nogami and Shunsuke Ito

Magnetism

- Thermodynamic evidence for bulk charge-density wave rigidity in NbSe_3 14 299
N. Harrison, L. Balicas, J. S. Brooks, J. Sarrao, and Z. Fisk
- Thermodynamics of the spin-flop transition in a quantum XYZ chain 14 303
X. Wang, X. Zotos, J. Karadamoglou, and N. Papanicolaou
- Optical absorption of spin ladders 14 307
Christoph Jurecka and Wolfram Brenig
- High-resolution study of the supposed fourfold Nd spin-wave degeneracy of Nd_2CuO_4 14 311
N. M. Pyka, M. d'Astuto, A. Metz, A. S. Ivanov, M. Loewenhaupt, H. Casalta, D. Petitgrand, and
P. Bourges
- Evidence for strong magnetoelastic effects in Ni nanowires embedded in polycarbonate membranes 14 315
S. Dubois, J. Colin, J. L. Duvail, and L. Piraux



Possible signatures of magnetic phase segregation in electron-doped antiferromagnetic CaMnO_3	14 319
J. J. Neumeier and J. L. Cohn	
Nitrogen-annealing effects on the electrical resistivity and thermopower of layered $\text{La}_{1.4}\text{Sr}_{1.6}\text{Mn}_2\text{O}_{7+\delta}$ ceramics ...	14 323
C.-J. Liu, C.-S. Sheu, and M.-S. Huang	
Dynamical behavior of the random-bond transverse Ising model with four-spin interactions	14 327
Beatriz Boechat, Claudette Cordeiro, J. Florencio, F. C. Sá Barreto, and O. F. de Alcantara Bonfim	
Induced spin polarization in ferromagnetic $\text{Gd}_{62.4}\text{Y}_{37.6}$	14 331
J. A. Duffy, S. B. Dugdale, J. E. McCarthy, M. A. Alam, M. J. Cooper, S. B. Palmer, and T. Jarlborg	
Band effect: A possible mechanism for large magnetoresistance in nonmagnetic materials	14 335
Gang Xiong, Shi-Dong Wang, and X. R. Wang	
Direct evidence of laser-induced magnetic domain structures in metallic glasses	14 338
Monica Sorescu	
Far-infrared study of the two-dimensional dimer spin system $\text{SrCu}_2(\text{BO}_3)_2$	14 342
T. Rõõm, U. Nagel, E. Lippmaa, H. Kageyama, K. Onizuka, and Y. Ueda	
Field and temperature dependence of magnetization in FeCu-based amorphous alloys	14 346
P. Crespo, M. Multigner, F. J. Castaño, R. Casero, A. Hernando, A. García Escorial, L. Schultz, and S. N. Kaul	

Superfluidity and superconductivity

Impurity scattering effects on the low-temperature specific heat of <i>d</i> -wave superconductors	14 350
C. F. Chang, J.-Y. Lin, and H. D. Yang	
Melting of moving vortex lattices in systems with periodic pinning	14 354
C. Reichhardt and G. T. Zimányi	
Direct observation of vortices in the organic superconductor $\kappa\text{-(BEDT-TTF)}_2\text{Cu(NCS)}_2$	14 358
L. Ya. Vinnikov, T. L. Barkov, M. V. Kartsovnik, and N. D. Kushch	
Metastable vortex states in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ crystal	14 362
Y. Radzyner, S. B. Roy, D. Giller, Y. Wolfus, A. Shaulov, P. Chaddah, and Y. Yeshurun	
Incommensurate geometry of the elastic magnetic peaks in superconducting $\text{La}_{1.88}\text{Sr}_{0.12}\text{CuO}_4$	14 366
H. Kimura, H. Matsushita, K. Hirota, Y. Endoh, K. Yamada, G. Shirane, Y. S. Lee, M. A. Kastner, and R. J. Birgeneau	
Magnetic flux dynamics and structural features in fluorinated $\text{HgBa}_2\text{CuO}_4$ as probed by ^{19}F NMR	14 370
A. A. Gippius, E. N. Morozova, E. V. Antipov, A. M. Abakumov, M. G. Rozova, K. Lüders, W. Hoffmann, G. Buntkowsky, and O. Klein	
Enhancement of interlayer coupling in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+y}$ crystals upon heavy-ion irradiation	14 374
A. K. Pradhan, G. D. Gu, K. Nakao, N. Koshizuka, and D. Kanjilal	
Evidence for a strong impact of the electron-photon matrix element on angle-resolved photoelectron spectra of layered cuprate compounds	14 378
S. Haffner, C. G. Olson, L. L. Miller, and D. W. Lynch	

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

Infrared spectroscopy investigation of the CsHSeO_4 superionic phase transition	14 382
D. De Sousa Meneses, P. Simon, and Y. Luspín	
Force-microscopy contrast mechanisms in ferroelectric domain imaging	14 390
M. Labardi, V. Likodimos, and M. Allegrini	
Phase stability of highly compressed cesium	14 399
K. Takemura, N. E. Christensen, D. L. Novikov, K. Syassen, U. Schwarz, and M. Hanfland	

Structural and thermoelastic properties of crystalline and amorphous TiSi_2 phases by tight-binding molecular dynamics	14 405
M. Iannuzzi, Leo Miglio, and M. Celino	
High-pressure polymorphs of anatase TiO_2	14 414
T. Arlt, M. Bermejo, M. A. Blanco, L. Gerward, J. Z. Jiang, J. Staun Olsen, and J. M. Recio	
Structure, elastic moduli, and thermodynamics of sodium and potassium at ultrahigh pressures	14 420
M. I. Katsnelson, G. V. Sinko, N. A. Smirnov, A. V. Trefilov, and K. Yu. Khromov	
Order parameter for two-dimensional critical systems with boundaries	14 425
Ivica Reš and Joseph P. Straley	
Electronic structure and ferroelectricity in $\text{SrBi}_2\text{Ta}_2\text{O}_9$	14 434
M. G. Stachiotti, C. O. Rodriguez, C. Ambrosch-Draxl, and N. E. Christensen	
Kinetics of ferroelectric domains investigated by scanning force microscopy	14 440
V. Likodimos, M. Labardi, and M. Allegrini	
Coexistence of the critical slowing down and glassy freezing in relaxor ferroelectrics	14 448
B. E. Vugmeister and H. Rabitz	
Positron-annihilation study of the aging kinetics of AlCu-based alloys. I. Al-Cu-Mg	14 454
A. Somoza, A. Dupasquier, I. J. Polmear, P. Folegati, and R. Ferragut	
Positron-annihilation study of the aging kinetics of AlCu-based alloys. II. Ag microalloying	14 464
A. Somoza, A. Dupasquier, I. J. Polmear, P. Folegati, and R. Ferragut	
Intergranular segregation and vibrational effects: A local analysis	14 470
Jérôme Creuze, Fabienne Berthier, Robert Tétot, Bernard Legrand, and Guy Trégliat	

Inhomogeneous, disordered, and partially ordered systems

Dynamic processes during displacement cascades in oxide glasses: A molecular-dynamics study	14 481
J.-M. Delaye and D. Ghaleb	
Competition for charge compensation in borosilicate glasses: Wide-angle x-ray scattering and molecular dynamics calculations	14 495
L. Cormier, D. Ghaleb, J.-M. Delaye, and G. Calas	
Growth kinetics of quasicrystalline and polytetrahedral phases of Al-Pd-Mn, Al-Co, and Al-Fe from the undercooled melt	14 500
Jan Schroers, Dirk Holland-Moritz, Dieter M. Herlach, and Knut Urban	
Influence of cation constriction on the ac conductivity dispersion in metaphosphate glasses	14 507
D. L. Sidebottom	
Atom clusters and vibrational excitations in chemically-disordered $\text{Pt}_3^{57}\text{Fe}$	14 517
B. Fultz, T. A. Stephens, E. E. Alp, M. Y. Hu, J. P. Sutter, T. S. Toellner, and W. Sturhahn	

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

Lattice-dynamics effects on small-polaron properties	14 523
Marco Zoli	
<i>Ab initio</i> studies on the vibrational and thermal properties of Al_3Li	14 531
Zhiqiang Li and John S. Tse	
Effect of the insulator-metal transition on the phonon anomalies in La_2CuO_4	14 537
Claus Falter and Georg A. Hoffmann	
Formation and hopping motion of molecular polarons	14 543
David Emin	
Infrared vibrations in LaSrGaO_4 and LaSrAlO_4	14 554
J. Humlíček, R. Henn, and M. Cardona	

Single crystals of the organic semiconductor perylene tetracarboxylic dianhydride studied by Raman spectroscopy	14 564
D. A. Tenne, S. Park, T. U. Kampen, A. Das, R. Scholz, and D. R. T. Zahn	
Magnetism	
Magnetic states in frustrated bilayer models: The ordered phase of mixed-layer pnictide oxides	14 570
Matthew Enjalran, Richard T. Scalettar, and Susan M. Kauzlarich	
Topological phase interference induced by a magnetic field along hard anisotropy axis in nanospin systems with different crystal symmetries	14 581
Rong Lü, Hui Hu, Jia-Lin Zhu, Xiao-Bing Wang, Lee Chang, and Bing-Lin Gu	
Exact ground state for one-dimensional electronic models	14 592
D. V. Dmitriev, V. Ya. Krivnov, and A. A. Ovchinnikov	
Theory of magnetic order in the three-dimensional spatially anisotropic Heisenberg model	14 601
L. Siurakshina, D. Ihle, and R. Hayn	
Quantum phase transitions of a square-lattice Heisenberg antiferromagnet with two kinds of nearest-neighbor bonds: A high-order coupled-cluster treatment	14 607
Sven E. Krüger, Johannes Richter, Jörg Schulenburg, Damian J. J. Farnell, and Raymond F. Bishop	
Wave form of de Haas–van Alphen oscillations in a two-dimensional metal	14 616
M. A. Itskovsky, T. Maniv, and I. D. Vagner	
Correlation between magnetism and structural relaxation in thin Fe(001) films patterned by the atomic saw method	14 628
H. Jaffrès, P. Le Fèvre, H. Magnan, A. Midoir, D. Chandesris, L. Ressler, A. Schuhl, F. Nguyen Van Dau, M. Goiran, J. P. Peyrade, and A. R. Fert	
Non-Fermi-liquid behavior in Kondo lattices induced by peculiarities of magnetic ordering and spin dynamics	14 640
V. Yu. Irkhin and M. I. Katsnelson	
Phase transition in perovskite manganites with orbital degree of freedom	14 647
S. Okamoto, S. Ishihara, and S. Maekawa	
Dimensional crossover driven by magnetic ordering in optical conductivity of $\text{Pr}_{1/2}\text{Sr}_{1/2}\text{MnO}_3$	14 656
J. H. Jung, H. J. Lee, Jaeyun Yu, T. W. Noh, E. J. Choi, and Y. Moritomo	
Stability of a cubic fixed point in three dimensions: Critical exponents for generic N	14 660
K. B. Varnashev	
Temperature and doping dependence of the thermopower in LaMnO_3	14 675
P. Mandal	
Ordering in the dilute weakly anisotropic antiferromagnet $\text{Mn}_{0.35}\text{Zn}_{0.65}\text{F}_2$	14 681
F. C. Montenegro, D. P. Belanger, Z. Slanič, and J. A. Fernandez-Baca	
Magnetic behavior of a mixed Ising ferrimagnetic model in an oscillating magnetic field	14 686
G. M. Buendía and E. Machado	
Susceptibility amplitude ratio near a Lifshitz point	14 691
Marcelo M. Leite	
Solid-state nuclear-spin quantum computer based on magnetic resonance force microscopy	14 694
G. P. Berman, G. D. Doolen, P. C. Hammel, and V. I. Tsifrinovich	
Thermal conductivity of Mg-doped CuGeO_3	14 700
J. Takeya, I. Tsukada, Yoichi Ando, T. Masuda, and K. Uchinokura	
Raman spectroscopy of the charge-orbital ordering in layered manganites	14 706
K. Yamamoto, T. Kimura, T. Ishikawa, T. Katsufuji, and Y. Tokura	
Time-resolved magnetization-induced second-harmonic generation from the Ni(110) surface	14 716
H. Regensburger, R. Vollmer, and J. Kirschner	

Superfluidity and superconductivity

Critical exponents at the superconductor-insulator transition in dirty-boson systems	14 723
Igor F. Herbut	
Vortex phase diagram and two-dimensional bosons	14 727
Bahman Davoudi and Mohammad Kohandel	
Weak-localization effect in superconductors from radiation damage	14 733
Mi-Ae Park and Yong-Jihn Kim	
Condensation energy and spectral functions in high-temperature superconductors	14 742
M. R. Norman, M. Randeria, B. Jankó, and J. C. Campuzano	
Relation of neutron incommensurability to electronic structure in high-temperature superconductors	14 751
M. R. Norman	
Electron transport in normal-metal/superconductor junctions	14 759
Xin-Zhong Yan, Hongwei Zhao, and Chia-Ren Hu	
Model for a Josephson junction array coupled to a resonant cavity	14 765
J. Kent Harbaugh and D. Stroud	
Spin susceptibility in underdoped $\text{YBa}_2\text{Cu}_3\text{O}_{6+x}$	14 773
H. F. Fong, P. Bourges, Y. Sidis, L. P. Regnault, J. Bossy, A. Ivanov, D. L. Milius, I. A. Aksay, and B. Keimer	
Disorder-induced topological defects in a $d=2$ elastic medium at zero temperature	14 787
A. Alan Middleton	
Depinning of interacting particles in random media	14 791
Stefano Zapperi, José S. Andrade, Jr., and Josué Mendes Filho	
Fishtail effect in the magnetization of superconducting $\text{RBa}_2\text{Cu}_3\text{O}_{7-\delta}$ ($R=\text{Y}, \text{Nd}, \text{Yb}$) and $\text{Y}_2\text{Ba}_4\text{Cu}_8\text{O}_{16}$ single crystals	14 795
M. Werner, F. M. Sauerzopf, H. W. Weber, and A. Wisniewski	
Determination of irreversibility fields and superconducting parameters in $\text{BaPb}_{0.75}\text{Bi}_{0.25}\text{O}_3$	14 804
D. N. Zheng, Z. X. Zhao, and A. M. Campbell	
Local spectrum of a superconductor as a probe of interactions between magnetic impurities	14 810
Michael E. Flatté and David E. Reynolds	
Electronic transport in $\text{Ba}_{1-x}\text{K}_x\text{BiO}_3$ single crystals	14 815
J. H. Lee, K. Char, Y. W. Park, L. Z. Zhao, D. B. Zhu, G. C. McIntosh, and A. B. Kaiser	
Measuring condensate fraction in superconductors	14 821
Sudip Chakravarty and Hae-Young Kee	
Variation of anomalous Pr ordering and crystal symmetry for the oxygenated $\text{Pr}_{1+x}\text{Ba}_{2-x}\text{Cu}_3\text{O}_{7+y}$ system	14 825
H. M. Luo, B. N. Lin, Y. H. Lin, H. C. Chiang, Y. Y. Hsu, T. I. Hsu, T. J. Lee, H. C. Ku, C. H. Lin, H.-C. I. Kao, J. B. Shi, J. C. Ho, C. H. Chang, S. R. Hwang, and W.-H. Li	
Double-step resistive superconducting transitions of indium and gallium in porous glass	14 833
C. Tien, C. S. Wur, K. J. Lin, E. V. Charnaya, and Yu. A. Kumzerov	
Measurements of quasiparticle thermalization in a normal metal	14 839
J. N. Ullom, P. A. Fisher, and M. Nahum	

ERRATA

Erratum: High-temperature magnetoconductivity of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$: Reconsideration of the Maki-Thompson contribution [Phys. Rev. B 58 , 6628 (1998)]	14 844
J. Axnäs, B. Lundqvist, and Ö. Rapp	
Erratum: Dipole polarization and charge transfer effects in the lattice dynamics and dielectric properties of ionic crystals [Phys. Rev. B 60 , 12 051 (1999)]	14 844
Claus Falter, Michael Klenner, Georg A. Hoffmann, and Frank Schnetgöke	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 61, NUMBER 21

1 JUNE 2000-I

Erratum: Holographies and EXAFS in quantum electrodynamics [Phys. Rev. B 60 , 15 074 (1999)]	14 845
Y. Nishino and G. Materlik	
Erratum: Tunneling spectroscopy for ferromagnet/superconductor junctions [Phys. Rev. B 61 , 1555 (2000)]	14 845
Igor Žutić and Oriol T. Valls	
Cumulative Author Index	14 846