

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
500 Sunnyside Boulevard
Woodbury, NY 11797-2999

THIRD SERIES, VOLUME 55, NUMBER 14

CONTENTS

1 APRIL 1997-II

RAPID COMMUNICATIONS

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

- Microwave transmission through a periodic three-dimensional metal-wire network containing random scatterers ... R8617
M. Stoytchev and A. Z. Genack
- Single-crystal neutron-diffraction study of a structural phase transition induced by a magnetic field in
 $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ R8622
A. J. Campbell, G. Balakrishnan, M. R. Lees, D. McK. Paul, and G. J. McIntyre

Inhomogeneous, disordered, and partially ordered systems

- Localization in a rough billiard: A σ -model formulation R8626
Klaus M. Frahm
- Conductivity of the two-dimensional Coulomb glass R8630
A. Pérez-Garrido, M. Ortuño, E. Cuevas, J. Ruiz, and M. Pollak

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

- Polaron effective mass from Monte Carlo simulations R8634
P. E. Kornilovitch and E. R. Pike
- Fröhlich-interaction-induced multiphonon Raman scattering in SrCuO_2 and $\text{Sr}_{0.5}\text{Ca}_{0.5}\text{CuO}_2$ R8638
M. V. Abrashev, A. P. Litvinchuk, C. Thomsen, and V. N. Popov

Magnetism

- Chemical disorder and charge transport in ferromagnetic manganites R8642
W. E. Pickett and D. J. Singh
- Two-impurity Kondo problem for correlated electrons R8646
Karen Hallberg and Reinhold Egger
- Magnetoresistance in GdNi: Magnetic-polaronic-like effect near the Curie temperature and low-temperature sign reversal R8650
R. Mallik, E. V. Sampathkumaran, P. L. Paulose, and V. Nagarajan
- Nonanalytical magnetoresistance, the third angular effect, and a method to investigate Fermi surfaces in quasi-two-dimensional conductors R8654
A. G. Lebed and N. N. Bagmet
- Switching of the gapped singlet spin-liquid state to an antiferromagnetically ordered state in $\text{Sr}(\text{Cu}_{1-x}\text{Zn}_x)_2\text{O}_3$... R8658
M. Azuma, Y. Fujishiro, M. Takano, M. Nohara, and H. Takagi
- K-edge resonant x-ray magnetic scattering from a transition-metal oxide: NiO R8662
J. P. Hill, C.-C. Kao, and D. F. McMorrow
- Local lattice distortion during the spin-state transition in LaCoO_3 R8666
S. Yamaguchi, Y. Okimoto, and Y. Tokura

Superfluidity and superconductivity

- Low-temperature specific heat of κ -(BEDT-TTF) $_2\text{Cu}[\text{N}(\text{CN})_2]\text{Br}$ in the superconducting state R8670
Y. Nakazawa and K. Kanoda

(Continued)



0163-1829(19970401)55:14;1-7

Field dependence of the specific heat of single-crystal $\text{HgBa}_2\text{Ca}_2\text{Cu}_3\text{O}_{8+\delta}$	R8674
A. Carrington, C. Marcenat, F. Bouquet, D. Colson, A. Bertinotti, J. F. Marucco, and J. Hammann	
Phonon mode coupling in superconducting $\text{LuNi}_2\text{B}_2\text{C}$	R8678
C. Stassis, M. Bullock, J. Zarestky, P. Canfield, A. I. Goldman, G. Shirane, and S. M. Shapiro	
Josephson junctions with alternating critical current density	R8682
R. G. Mints and V. G. Kogan	
Excitation of Josephson plasma and vortex oscillation modes in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ in parallel magnetic fields	R8685
Y. Matsuda, M. B. Gaifullin, K. Kumagai, K. Kadowaki, T. Mochiku, and K. Hirata	
Effect of midgap states in d -wave superconductors on the flux quantization in tricrystal rings	R8689
Manoj P. Samanta and Supriyo Datta	
Vortex lattice transitions in borocarbides	R8693
V. G. Kogan, M. Bullock, B. Harmon, P. Miranović, Lj. Dobrosavljević-Grujić, P. L. Gammel, and D. J. Bishop	
Josephson-junction thermodynamics and the superconducting phase transition in a SQUID device	R8697
Alec Maassen van den Brink and H. Dekker	
In-plane and out-of-plane transport properties of $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ epitaxial films: Fluctuations and transition into a vortex solid state	R8701
D. V. Livanov, E. Milani, G. Balestrino, and C. Aruta	
Angular dependence of the first-order vortex-lattice phase transition in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$	R8705
B. Schmidt, M. Konczykowski, N. Morozov, and E. Zeldov	
Nature of the vortex liquid in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_y$	R8709
T. Tsuboi, T. Hanaguri, and A. Maeda	
Neutron-irradiation effects on the V - I characteristics of $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ twinned crystals: Linking transport results in a variety of copper oxide superconductors	R8713
Brandon Brown, J. M. Roberts, J. Tate, and J. W. Farmer	
Local vortex mobility below the irreversibility line of $\text{Tl}_2\text{Ba}_2\text{CaCu}_2\text{O}_8$: A ^{205}Tl NMR study of the transverse relaxation in single crystals	R8717
E. G. Nikolaev, J. Witteveen, M. de Kok, and H. B. Brom	

ARTICLES

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

Theoretical investigation of the structure of $\kappa\text{-Al}_2\text{O}_3$	8721
Y. Yourdshahyan, U. Engberg, L. Bengtsson, B. I. Lundqvist, and B. Hammer	
Systematic Mn d -configuration change in the $\text{La}_{1-x}\text{Ca}_x\text{MnO}_3$ system: A Mn K -edge XAS study	8726
M. Croft, D. Sills, M. Greenblatt, C. Lee, S.-W. Cheong, K. V. Ramanujachary, and D. Tran	
Metric tensor as the dynamical variable for variable-cell-shape molecular dynamics	8733
Ivo Souza and José Luís Martins	
Resonant OH^- photodissociation in alkali halide crystals	8743
L. Gomes and S. P. Morato	
Subnanometric-scale motion of the modulation wave in incommensurate solids studied by two-dimensional exchange-difference NMR	8755
J. Dolinšek and G. Papavassiliou	
Dynamical properties of epitaxial ferroelectric superlattices	8766
Y. Kim, R. A. Gerhardt, and A. Erbil	
Critical slowing down and dispersion of avalanche upconversion dynamics	8776
Q. Shu and S. C. Rand	

Inhomogeneous, disordered, and partially ordered systems

Short-range order, bulk moduli, and physical trends in $c\text{-Si}_{1-x}\text{C}_x$ alloys	8784
P. C. Kelires	
Photoinduced anisotropy in vitreous As_2S_3 : A reflectance-difference study	8788
A. V. Kolobov, V. Lyubin, T. Yasuda, M. Klebanov, and K. Tanaka	
Simulation of Mössbauer absorption spectra for decagonal AlCuCo	8793
P. Kramer, A. Quandt, Th. Schneider, and H. Teuscher	
<i>Ab initio</i> calculations of partial molar properties in the single-site approximation	8801
A. V. Ruban and H. L. Skriver	
Comparison of the electronic structure of AlPd and $\text{Al}_{70}\text{Pd}_{20}\text{Mn}_{10}$	8808
M. Zurkirch, M. De Crescenzi, M. Erbudak, M. Hochstrasser, and A. R. Kortan	

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

Stationary self-localized magnons in Heisenberg antiferromagnets	8812
J. Ohishi, M. Kubota, K. Kawasaki, and S. Takeno	
Friedel oscillations in the force constants of metals	8821
Peter J. Feibelman	
Boundary-condition effects in anharmonic lattice dynamics: Existence criteria for intrinsic localized modes from extended-mode properties	8829
D. Bonart, T. Rössler, and J. B. Page	
Raman and Fourier-transform infrared photoacoustic spectra of granular ZrO_2	8847
Liu Fangxin, Yang Jinlong, and Zhao Tianpeng	
Path renormalization of quasiperiodic generalized Fibonacci chains	8852
Dieter Walther and Ralph v. Baltz	
Density-functional theory of freezing of quantum liquids at zero temperature using exact liquid-state linear response	8867
C. N. Likos, Saverio Moroni, and Gaetano Senatore	
Different mechanisms of nonlinear quenching of luminescence	8881
D. A. Zubenko, M. A. Noginov, V. A. Smirnov, and I. A. Shcherbakov	

Magnetism

Stimulated cooperative Jahn-Teller effect in TmPO_4	8887
P. Morin and Z. Kazei	
Low-lying excited states and low-temperature properties of an alternating spin-1–spin-1/2 chain: A density-matrix renormalization-group study	8894
Swapan K. Pati, S. Ramasesha, and Diptiman Sen	
Structural, magnetic, and transport properties of the giant magnetoresistive perovskites $\text{La}_{2/3}\text{Ca}_{1/3}\text{Mn}_{1-x}\text{Al}_x\text{O}_{3-\delta}$	8905
J. Blasco, J. García, J. M. de Teresa, M. R. Ibarra, J. Perez, P. A. Algarabel, C. Marquina, and C. Ritter	
Effective potential for a scalar field in three dimensions: Ising model in the ferromagnetic phase	8911
M. M. Tsy-pin	
Magnetic-field dependence of macroscopic quantum tunneling and coherence of ferromagnetic particles	8918
Gwang-Hee Kim and Dae Sung Hwang	
Variational and density-matrix renormalization-group studies of the frustrated antiferromagnetic Heisenberg $S=1$ quantum spin chain	8928
A. Kolezhuk, R. Roth, and U. Schollwöck	
Normalization factors for magnetic relaxation of small-particle systems in a nonzero magnetic field	8940
Ll. Balcells, O. Iglesias, and A. Labarta	

Magnetism and superconductivity of Fe/Nb/Fe trilayers	8945
Th. Mühge, K. Westerholt, H. Zabel, N. N. Garif'yanov, Yu. V. Goryunov, I. A. Garifullin, and G. G. Khaliullin	
g -factor formulas of $3d^5$ ions in trigonal-symmetry fields and their applications	8955
M. G. Zhao and Y. Lei	
NMR study of deuteron interbond motion in CsDSO ₄	8961
D. Arčon, R. Blinc, J. Dolinšek, and L. A. Shuvalov	
Spectral hole-burning study of hyperfine and nuclear quadrupole interactions of $^{243}\text{Am}^{3+}$ in CaWO ₄	8967
G. K. Liu, Jin Huang, and M. M. Abraham	
Magnetic transition in perovskite Mn oxides at $T=0$	8973
Jie Jiang, Jinming Dong, and D. Y. Xing	
Low-field magnetoresistance in diverse magnetic phases of $\gamma\text{-Fe}_{80-x}\text{Ni}_x\text{Cr}_{20}$ alloys	8982
G. Sinha, R. D. Barnard, and A. K. Majumdar	
Asymmetric magneto-optic response in anisotropic thin films	8990
R. M. Osgood III, B. M. Clemens, and R. L. White	
Superfluidity and superconductivity	
Possible contribution of direct exchange to the superfluidity of ^3He	8997
J. E. Hirsch	
Correlations between normal-state properties and superconductivity	9007
J. E. Hirsch	
Visualization of longitudinal and transverse currents in a Josephson medium by polarized neutrons	9025
G. P. Gordeev, L. A. Akselrod, S. L. Ginzburg, V. N. Zabenkin, and I. M. Lazebnik	
Characteristics of two-dimensional vortex dynamics from XY -type models with Ginzburg-Landau dynamics	9035
Anna Jonsson and Petter Minnhagen	
Charge transport through superconductor/Anderson-insulator interfaces	9047
Aviad Frydman and Zvi Ovadyahu	
Lattice vibrations and electron-phonon coupling in superconducting quaternary borocarbides: An inelastic neutron-scattering investigation	9058
F. Gompf, W. Reichardt, H. Schober, B. Renker, and M. Buchgeister	
Resistance anomaly and excess voltage in inhomogeneous superconducting aluminum thin films	9067
M. Park, M. S. Isaacson, and J. M. Parpia	
Transition-temperature features of layered superconductors	9077
T. A. Mamedov, M. de Llano, and T. Firat	
c -axis Josephson tunneling in twinned and untwinned YBCO-Pb Junctions	9088
C. O'Donovan, M. D. Lumsden, B. D. Gaulin, and J. P. Carbotte	
Linear response and collective oscillations in superconductors with d -wave pairing	9094
S. N. Artemenko and A. G. Kobelkov	
Magnetic flux noise in superconducting rings and disks close to the superconducting transition	9098
S. A. L. Foulds, J. Smithyman, G. F. Cox, C. M. Muirhead, and R. G. Humphreys	
Critical exponents of the superconducting transition in granular YBa ₂ Cu ₃ O _{7-δ}	9107
R. J. Joshi, R. B. Hallock, and J. A. Taylor	
Temperature-dependent modulation amplitude of the CuO ₂ superconducting lattice in La ₂ CuO _{4.1}	9120
A. Lanzara, N. L. Saini, A. Bianconi, A. Bianconi, J. L. Hazemann, Y. Soldo, F. C. Chou, and D. C. Johnston	
Thermal expansion of superconducting Bi ₂ Sr ₂ CaCu ₂ O ₈	9125
T. Asahi, H. Suzuki, M. Nakamura, H. Takano, and J. Kobayashi	

Relation of the superstructure modulation and extra-oxygen local-structural distortion in $\text{Bi}_{2.1-y}\text{Pb}_y\text{Sr}_{1.9-x}\text{La}_x\text{CuO}_z$	9130
Mao Zhiqiang, Xu Gaojie, Zhang Shuyuan, Tan Shun, Lu Bin, Tian Mingliang, Fan Chenggao, Xu Cunyi, and Zhang Yuheng	
Optical phonons in the orthorhombic double-chain $\text{Sr}_{1-x}\text{Ca}_x\text{CuO}_2$ ($x=0, 0.5$)	9136
M. V. Abrashev, A. P. Litvinchuk, C. Thomsen, and V. N. Popov	
Energy level statistics of the two-dimensional Hubbard model at low filling	9142
Henrik Bruus and Jean-Christian Anglès d'Auriac	
X-ray absorption spectroscopy of detwinned $\text{Pr}_x\text{Y}_{1-x}\text{Ba}_2\text{Cu}_3\text{O}_{7-y}$ single crystals: Electronic structure and hole distribution	9160
M. Merz, N. Nücker, E. Pellegrin, P. Schweiss, S. Schuppler, M. Kielwein, M. Knupfer, M. S. Golden, J. Fink, C. T. Chen, V. Chakarian, Y. U. Idzerda, and A. Erb	
Cumulative Author Index	9173