

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 62, NUMBER 1

CONTENTS

1 JULY 2000-I

Subject Matter Categories for Physical Review B	iii
Physical Review B Editorial Policies and Practices	iv
Physical Review B Information for Contributors	viii
Guidelines for Estimating Length for Physical Review B	xi

BRIEF REPORTS

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

Effects of ac field amplitude on the dielectric susceptibility of relaxors	1
Zhi-Rong Liu, Bing-Lin Gu, and Xiao-Wen Zhang	
High-pressure phases and structural bonding of Ge_3N_4	5
J. E. Lowther	
Crystal structure of a high-pressure phase in Bi-based alloys related to Si VI	9
V. F. Degtyareva	
Swelling effects in lithium fluoride induced by swift heavy ions	13
C. Trautmann, M. Toulemonde, J. M. Costantini, J. J. Grob, and K. Schwartz	
Pressure-induced insulator-metal transition in a bilayer manganite: Pressure control of orbital stability	17
Y. Moritomo, K. Hirota, H. Nakao, T. Kiyama, Y. Murakami, S. Okamoto, S. Ishihara, S. Maekawa, M. Kubota, and H. Yoshizawa	
Angular magnetoresistance in the $(\text{DMET-TSeF})_2X$ family: ($X = \text{AuCl}_2, \text{AuI}_2$): Field-induced spin-density waves and commensurability effects	21
N. Biškup, J. S. Brooks, R. Kato, and K. Oshima	

Inhomogeneous, disordered, and partially ordered systems

Supersoftening of transverse phonons in $\text{Zr}_{41}\text{Ti}_{14}\text{Cu}_{12.5}\text{Ni}_{10}\text{Be}_{22.5}$ bulk metallic glass	25
Wei Hua Wang, Hai Yang Bai, J. L. Luo, Ru Ju Wang, and D. Jin	
Berry phase and ground-state symmetry in $H \otimes h$ dynamical Jahn-Teller systems	29
Nicola Manini and Paolo De Los Rios	
Delocalization of two interacting particles in a random potential: One-dimensional electric interaction	33
J. C. Flores	

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

Vibrational spectrum of magnesium hydride	37
J. R. Santisteban, G. J. Cuello, J. Dawidowski, A. Fainstein, H. A. Peretti, A. Ivanov, and F. J. Bermejo	



Path-integral Monte Carlo simulations of solid neon at room temperature	41
Martin Neumann and Marco Zoppi	
Magnetism	
Spin factor of de Haas–van Alphen oscillations in two-dimensional systems: Effect of background density of states and chemical-potential oscillations	45
Masahiro Nakano	
Quadrupolar ordering of $5f$ electrons in UCu_2Sn	49
Takashi Suzuki, Isao Ishii, Noriki Okuda, Kenichi Katoh, Toshiro Takabatake, Toshizo Fujita, and Akira Tamaki	
Ordering of dipolar Ising crystals	53
Julio F. Fernández and Juan José Alonso	
Semiclassical approach to the thermodynamics of spin chains	57
Alessandro Cuccoli, Valerio Tognetti, Paola Verrucchi, and Ruggero Vaia	
Composite pairings in chirally stabilized critical fluids	61
P. Azaria and P. Lecheminant	
Solution of a two-leg spin ladder system	65
Jon Links and Angela Foerster	
Kondo spin liquid and magnetically long-range ordered states in the Kondo necklace model	69
Guang-Ming Zhang, Qiang Gu, and Lu Yu	
Unquenched large orbital magnetic moment in NiO	73
S. K. Kwon and B. I. Min	
Kondo singlet state coexisting with antiferromagnetic long-range order: A possible ground state for Kondo insulators	76
Guang-Ming Zhang and Lu Yu	
Reconsideration of the lattice effect on the charge-ordering transition of doped manganites	80
A. Machida, Y. Moritomo, K. Ohoyama, S. Okamoto, S. Ishihara, S. Maekawa, and A. Nakamura	
Magnetic-field dependence of the paramagnetic to the high-temperature magnetically ordered phase transition in CeB_6	84
Donavan Hall, Z. Fisk, and R. G. Goodrich	
Thermal conductivity of CeAuAl_3 : Evidence of phonon scattering by Ce magnetic moment fluctuations	87
Y. Aoki, M. A. Chernikov, H. R. Ott, H. Sugawara, and H. Sato	
Magnetoresistance of a two-dimensional electron gas in weakly modulated magnetic fields	91
A. Matulis and F. M. Peeters	
Magnetic ordering in two-dimensional Heisenberg antiferromagnets with variable interlayer distances	95
Kyu Won Lee, Chang Hoon Lee, Cheol Eui Lee, and J. K. Kang	
Superfluidity and superconductivity	
Plateau transitions in the pairing model: Topology and selection rule	99
Y. Morita and Y. Hatsugai	
Specific heat of organic superconductor $\kappa\text{-(BEDT-TTF)}_2\text{Cu}[\text{N}(\text{CN})_2]\text{Br}$ under a magnetic field parallel to the conducting plane	103
A. E. Kovalev, T. Ishiguro, T. Kondo, and G. Saito	
Low-temperature thermodynamics of the asymmetric next-nearest-neighbor Ising model	107
V. M. Matić, N. Dj. Lazarov, E. E. Tornau, S. Lapinskas, M. Milić, and V. Spasojević	
Nature of the 45° vortex lattice reorientation in tetragonal superconductors	111
A. Knigavko, V. G. Kogan, B. Rosenstein, and T.-J. Yang	
Meissner-London state in superconductors of rectangular cross section in a perpendicular magnetic field	115
R. Prozorov, R. W. Giannetta, A. Carrington, and F. M. Araujo-Moreira	

Measurements of critical-current diffraction patterns in annular Josephson junctions	119
Andreas Franz, Andreas Wallraff, and Alexey V. Ustinov	
Vortex structure and dynamics in $\text{YNi}_2\text{B}_2\text{C}$ single crystal by ^{11}B NMR	123
K. H. Lee, B. J. Mean, G. S. Go, S. W. Seo, K. S. Han, D. H. Kim, Moohee Lee, B. K. Cho, and S. I. Lee	
Superconductivity in LaRhAl and mixed valent behavior in CeRhAl	127
N. Harish Kumar and S. K. Malik	
C_{28} : A possible room temperature organic superconductor	130
N. Breda, R. A. Broglia, G. Colò, G. Onida, D. Provasi, and E. Vigezzi	
Influence of the additional second-neighbor hopping on the spin response in the t - J model	134
Xianglin Ke, Feng Yuan, and Shiping Feng	
Spin paramagnetism in d -wave superconductors	138
D. Tanasković, Z. Radović, and L. Dobrosavljević-Grujić	
Effective sublattice magnetization and Néel temperature in quantum antiferromagnets	142
Eduardo C. Marino and Marcello B. Silva Neto	
Determination of the superconducting gap in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ by tunneling experiments under magnetic fields	146
Y. Dagan, R. Krupke, and G. Deutscher	
Incommensurate composite structure of the superconductor $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$	150
J. Etrillard, P. Bourges, and C. T. Lin	
Normal-state Fermi surface of pristine and Pb-doped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ from angle-resolved photoemission measurements and its photon energy independence	154
S. Legner, S. V. Borisenko, C. Dürr, T. Pichler, M. Knupfer, M. S. Golden, J. Fink, G. Yang, S. Abell, H. Berger, R. Müller, C. Janowitz, and G. Reichardt	

ARTICLES

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

Local vibrational modes of two neighboring substitutional carbon atoms in silicon	158
E. V. Lavrov, B. Bech Nielsen, J. R. Byberg, B. Hourahine, R. Jones, S. Öberg, and P. R. Briddon	
Misfit-layered cobaltite with an anisotropic giant magnetoresistance: $\text{Ca}_3\text{Co}_4\text{O}_9$	166
A. C. Masset, C. Michel, A. Maignan, M. Hervieu, O. Toulemonde, F. Studer, B. Raveau, and J. Hejtmanek	
$\text{P}_4\text{W}_{20}\text{O}_{68}$: A complex charge-density-wave modulated structure with an antiferroelectric-like lattice distortion ...	176
P. Roussel, Ph. Labbé, H. Leligny, D. Groult, P. Foury-Leylekian, and J. P. Pouget	
Charge modulations in La_2CuO_4 -based cuprates	189
L.-M. Peng, M. Gao, Z. F. Dong, X. L. Dong, B. R. Zhao, and Z. X. Zhao	
Mean-field potential approach to thermodynamic properties of metal: Al as a prototype	196
Yi Wang and Li Li	
Monte Carlo simulations of the decomposition of metastable solid solutions: Transient and steady-state nucleation kinetics	203
F. Soisson and G. Martin	
Crystalline phase sequence of Li_3ThF_7 : A study based on the Landau theory and linear birefringence measurements	215
M. A. S. Oliveira, J.-Y. Gesland, L. C. M. Belo, U. A. Leitão, and R. L. Moreira	
Study of the anisotropic dielectric behavior of $\text{Rb}_{1-x}(\text{NH}_4)_x\text{H}_2\text{PO}_4$ ($x=0.15$ and 0.17) mixed crystals	223
Keum Hwan Noh, Sook-Il Kwun, and Jong-Gul Yoon	
Oxygen-vacancy-related low-frequency dielectric relaxation and electrical conduction in Bi:SrTiO_3	228
Chen Ang, Zhi Yu, and L. E. Cross	

Inhomogeneous, disordered, and partially ordered systems

Relative stability of bcc structures in ternary alloys with $\text{Ti}_{50}\text{Al}_{25}\text{Mo}_{25}$ composition	237
P. R. Alonso and G. H. Rubiolo	
Atomic and electronic structure of decagonal Al-Ni-Co alloys and approximant phases	243
M. Krajčí, J. Hafner, and M. Mihalkovič	
Reflection of light from a random amplifying medium with disorder in the complex refractive index: Statistics of fluctuations	256
S. Anantha Ramakrishna, E. Krishna Das, G. V. Vijayagovindan, and N. Kumar	
Low-temperature transport, thermal, and optical properties of single-grain quasicrystals of icosahedral phases in the Y-Mg-Zn and Tb-Mg-Zn alloy systems	262
M. A. Chernikov, S. Paschen, E. Felder, P. Vorburger, B. Ruzicka, L. Degiorgi, H. R. Ott, I. R. Fisher, and P. C. Canfield	

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

<i>Ab initio</i> phonon dispersions of Fe and Ni	273
Andrea Dal Corso and Stefano de Gironcoli	
Scattering of elastic waves by periodic arrays of spherical bodies	278
I. E. Psarobas, N. Stefanou, and A. Modinos	
Low-temperature thermal conductivity of a single-grain Y-Mg-Zn icosahedral quasicrystal	292
K. Giannò, A. V. Sologubenko, M. A. Chernikov, H. R. Ott, I. R. Fisher, and P. C. Canfield	
Breaking a one-dimensional chain: Fracture in 1+1 dimensions	301
Eugene B. Kolomeisky and Joseph P. Straley	

Magnetism

Phase transition in the transverse Ising model using the extended coupled-cluster method	308
J. Rosenfeld and N. E. Ligerink	
Three-dimensional ordering in weakly coupled antiferromagnetic ladders and chains	316
Stefan Wessel and Stephan Haas	
Correlations in doped antiferromagnets	324
Moshe Havilio and Assa Auerbach	
Magnetization plateaus in dimerized spin-ladder arrays	337
D. C. Cabra and M. D. Grynberg	
Excitation spectra of structurally dimerized and spin-Peierls chains in a magnetic field	344
Weiqiang Yu and Stephan Haas	
Quantum shock waves in the Heisenberg XY model	352
Vladislav Popkov and Mario Salerno	
Itinerant ferromagnetism in half-metallic CoS_2	357
S. K. Kwon, S. J. Youn, and B. I. Min	
Random field and random anisotropy effects in defect-free three-dimensional XY models	361
Ronald Fisch	
Possible localized modes in the uniform quantum Heisenberg chains of Sr_2CuO_3	367
J. P. Boucher and M. Takigawa	
Charge- and magnetic-ordering in a two-orbital double-exchange model for manganites	372
G. Jackeli, N. B. Perkins, and N. M. Plakida	
Magnetic linear dichroism in x-ray emission spectroscopy: Yb in $\text{Yb}_3\text{Fe}_5\text{O}_{12}$	379
F. M. F. de Groot, M. H. Krisch, F. Sette, and J. Vogel	
Orbital magnetic susceptibility of a quasi-one-dimensional electron gas system in tilted magnetic fields	385
Jai Yon Ryu, Suck Whan Kim, Sang Chil Lee, and C. S. Ting	

Phase separation and enhanced charge-spin coupling near magnetic transitions	391
Francisco Guinea, Guillermo Gómez-Santos, and Daniel P. Arovas	
<i>Ab initio</i> evaluation of local effective interactions in α' - NaV_2O_5	402
Nicolas Suaud and Marie-Bernadette Lepetit	
Nuclear-spin relaxation of ^{59}Co correlated with the spin-state transitions in LaCoO_3	410
Y. Kobayashi, N. Fujiwara, S. Murata, K. Asai, and H. Yasuoka	
Spectrum and phase transitions in Kondo lattices	415
F. López-Aguilar	
Magnetic, thermal, and transport properties of single crystals of antiferromagnetic Kondo-lattice Ce_2PdSi_3	425
S. R. Saha, H. Sugawara, T. D. Matsuda, Y. Aoki, H. Sato, and E. V. Sampathkumaran	
^{27}Al impurity-satellite NMR and non-Fermi-liquid behavior in $\text{U}_{1-x}\text{Th}_x\text{Pd}_2\text{Al}_3$	430
Chia-Ying Liu, D. E. MacLaughlin, H. G. Lukefahr, G. Miller, K. Hui, M. B. Maple, M. C. de Andrade, and E. J. Freeman	
Correlated electrons in manganites	439
P. Schlottmann	
Maki analysis of spin-polarized tunneling in an oxide ferromagnet	447
D. C. Worledge and T. H. Geballe	
Lattice relaxations and hyperfine fields of heavy impurities in Fe	452
T. Korhonen, A. Settels, N. Papanikolaou, R. Zeller, and P. H. Dederichs	
Hyperfine fields and local lattice relaxation at $4d$ and $5sp$ impurities in bcc iron	461
Stefaan Cottenier and Heinz Haas	
X-ray absorption in $\text{Ce}(\text{Fe}_{1-x}\text{Co}_x)_2$ and $\text{Ce}(\text{Fe}_{1-x}\text{Al}_x)_2$ compounds	468
Jesús Chaboy, Cristina Piquer, Luis M. García, Fernando Bartolomé, Hirofumi Wada, Hiroshi Maruyama, and Naomi Kawamura	
Low-temperature magnetization in Ni-rich $\gamma\text{-Ni}_{100-x-y}\text{Fe}_x\text{V}_y$ alloys	476
S. Chakraborty, G. D. Mukherjee, K. D. D. Rathnayaka, D. G. Naugle, and A. K. Majumdar	
Melting of charge/orbital ordered states in $\text{Nd}_{1/2}\text{Sr}_{1/2}\text{MnO}_3$: Temperature and magnetic-field-dependent optical studies	481
J. H. Jung, H. J. Lee, T. W. Noh, E. J. Choi, Y. Moritomo, Y. J. Wang, and X. Wei	
Order induced by dipolar interactions in a geometrically frustrated antiferromagnet	488
S. E. Palmer and J. T. Chalker	
Structure and magnetism of well defined cobalt nanoparticles embedded in a niobium matrix	493
M. Jamet, V. Dupuis, P. Mélinon, G. Guiraud, A. Pérez, W. Wernsdorfer, A. Traverse, and B. Baguenard	
Electronic and magnetic structures in metallic thin films	500
K. Okazaki and Y. Teraoka	
Large magnetic moment enhancement and extraordinary Hall effect in Co/Pt superlattices	508
C. L. Canedy, X. W. Li, and Gang Xiao	
Bound magnetic polaron hopping and giant magnetoresistance in magnetic semiconductors and nanostructures	520
A. G. Petukhov and M. Foygel	
Magnetic resonance in spherical Co-Ni and Fe-Co-Ni particles	532
D. Mercier, J.-C. S. Lévy, G. Viau, F. Fiévet-Vincent, F. Fiévet, P. Toneguzzo, and O. Acher	
NMR evidence of the magnetic phase separation in $\text{Pr}_{0.5}\text{Ca}_{0.2}\text{Sr}_{0.3}\text{MnO}_3$ manganite	545
M. M. Savosta, A. S. Karnachev, S. Krupička, J. Hejtmánek, Z. Jiráček, M. Maryško, and P. Novák	
Effective-medium theory of the giant magnetoresistance in magnetic granular samples and doped LaMnO_3 perovskites	550
Wei-Guo Yin and Ruibao Tao	
Total scattering cross section of spin-polarized low-energy electrons in transition metals	556
Henri-Jean Drouhin	
Spin-current interaction with a monodomain magnetic body: A model study	570
J. Z. Sun	

Observation of ultrafast spin-lattice relaxation in Tm^{2+} -doped CaF_2 and SrF_2 crystals by optical means	579
T. Kohmoto, Y. Fukuda, M. Kunitomo, and K. Isoda	
Superfluidity and superconductivity	
Mode damping of layered ^3He - ^4He films over a solid substrate	584
Sviatoslav S. Sokolov, Guo-Qiang Hai, and Nelson Studart	
Doppler shift on local density of states and local impurity scattering in the vortex state	592
E. Schachinger and J. P. Carbotte	
Pairing correlations in the attractive Hubbard model on chains, ladders, and squares	600
M. Guerrero, G. Ortiz, and J. E. Gubernatis	
Photoemission study of electronic states in $\text{HgBa}_2\text{CuO}_{4+\delta}$ with various doping levels	615
H. Uchiyama, W.-Z. Hu, A. Yamamoto, S. Tajima, K. Saiki, and A. Koma	
Dragging excitation characteristics from thermoelectric power in $\text{Bi}_2(\text{Sr}_{2-y}\text{La}_y)\text{CuO}_{6+\delta}$ single crystals	622
Y. Dumont, C. Ayache, and G. Collin	
Temperature- and magnetic-field-dependent thermal conductivity of pure and Zn-doped $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ single crystals	626
Yoichi Ando, J. Takeya, Yasushi Abe, K. Nakamura, and A. Kapitulnik	
Torque magnetometry on single-crystal high-temperature superconductors near the critical temperature: A scaling approach	631
J. Hofer, T. Schneider, J. M. Singer, M. Willemin, H. Keller, T. Sasagawa, K. Kishio, K. Conder, and J. Karpinski	
Consistent picture for resonance-neutron-peak and angle-resolved photoemission spectra in high- T_c superconductors	640
Jian-Xin Li, Chung-Yu Mou, and T. K. Lee	
Finite-temperature resistive transition in the two-dimensional XY gauge glass model	644
Beom Jun Kim	
Control of the supercurrent in a mesoscopic four-terminal Josephson junction	648
Qing-feng Sun, Jian Wang, and Tsung-han Lin	
Theory of coherent c -axis Josephson tunneling between layered superconductors	661
G. B. Arnold and R. A. Klemm	
Pinning of a single Abrikosov vortex in superconducting Nb thin films using artificially induced pinning sites	671
M. Breitsch and D. K. Finnemore	
Repetition of the disordered pattern in successive solidifications of vortex matter observed by Bitter decoration . . .	678
J. A. Herbsommer, G. Nieva, and J. Luzuriaga	
Contribution to the quasiparticle inelastic lifetime from paramagnons in disordered superconductors	682
T. P. Devereaux	
Ion displacement and electron-hole localization in perovskite-like layered cuprates	686
S. Kuwata	
Vortex pinning by a Gaussian splay of columnar defects in $\text{YBa}_2\text{Cu}_3\text{O}_7$	691
V. Hardy, M. Hervieu, J. Provost, Ch. Simon, and P. Lejay	
Laser-induced structural transitions in $\text{YBa}_2\text{Cu}_3\text{O}_y$ amorphous films with nanocrystalline clusters	696
V. D. Okunev, Z. A. Samoilenko, A. Abal'oshev, I. Abal'osheva, P. Gierłowski, A. Klimov, S. J. Lewandowski, V. N. Varyukhin, and S. Barbanera	
Midinfrared spectrum of undoped cuprates: $d-d$ transitions studied by <i>ab initio</i> methods	702
Coen de Graaf and Ria Broer	
Identification of the physical parameters of the paramagnetic phase of the one-dimensional Kondo lattice model done by introducing a nonmagnetic quantum state with rotating order parameters	710
Mohamed Azzouz	
Anomalous magnetization transition accompanying the irreversibility line in high-temperature superconductors	716
H. H. Wen, S. L. Li, and Z. X. Zhao	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 62, NUMBER 1

1 JULY 2000-I

Flux-line interactions with precipitates in $\text{YBa}_2\text{Cu}_3\text{O}_{7-x}$ films revealed by scanning Hall probe microscopy	721
A. N. Grigorenko, S. J. Bending, G. D. Howells, and R. G. Humphreys	

ERRATA

Erratum: Point-defect interactions when annealing diamonds implanted at low temperatures [Phys. Rev. B 44 , 2470 (1991)]	726
Johan F. Prins	
Erratum: Shape anisotropy of magnetic heterostructures [Phys. Rev. B 54 , 1088 (1996)]	727
J. Dubowik	

Cumulative Author Index	728
-----------------------------------	-----