

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 58, NUMBER 1

CONTENTS

1 JULY 1998-I

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

BRIEF REPORTS

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

Lattice model of solidification with mobile impurities in the liquid phase	1
Kristinka Ivanova	
Polymer-monomer phase transition in Na_4C_{60}	5
G. Oszlányi, G. Baumgartner, G. Faigel, L. Gránásy, and L. Forró	
Jahn-Teller transition of LiMn_2O_4 studied by x-ray-absorption spectroscopy	8
Hirotaka Yamaguchi, Atsuo Yamada, and Hiromoto Uwe	
Analytical predictions for the magnetoelectric coupling in piezomagnetic materials reinforced by piezoelectric ellipsoidal inclusions	12
Jin H. Huang	
High-pressure phase transitions in $\text{Zn}_{1-x}\text{M}_x\text{Se}$ ($M=\text{Cd}$, Fe , and Mn)	16
Chih-Ming Lin, Der-San Chuu, Ji-an Xu, Eugene Huang, Wu-Ching Chou, Jing-Zhu Hu, and Jui-Hsiang Pei	
Extension of the universal equation of state for solids in high-pressure phases	20
Zheng-Hua Fang	

Inhomogeneous, disordered, and partially ordered systems

Inner modulation mechanism for the stability of quasicrystals	23
Lu Xu and Zhen-hong Mai	
Instantaneous normal modes of Na in supercooled liquid and glassy states	27
Ten-Ming Wu and Shiow-Fon Tsay	
Raman signature of polyamorphism in triphenyl phosphite	31
A. Hédoux, Y. Guinet, and M. Descamps	
Visible and near-infrared silica colloidal crystals and photonic gaps	35
Dongbin Mei, Hongguang Liu, Bingying Cheng, Zhaolin Li, Daozhong Zhang, and Peng Dong	



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

- EPR and crystal-field analysis of Yb^{3+} ions in $\text{Bi}_4\text{Ge}_3\text{O}_{12}$ single crystals 39
D. Bravo and F. J. López

Magnetism

- Effect of structural and magnetic transitions in $\text{La}_{1-x}\text{M}_x\text{MnO}_3$ ($M = \text{Sr}, \text{Ca}$) single crystals in Raman scattering 43
V. B. Podobedov, A. Weber, D. B. Romero, J. P. Rice, and H. D. Drew
- Hall effect in $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ 47
A. Asamitsu and Y. Tokura
- Quantum integrability and exact solution of the supersymmetric U model with boundary terms 51
Yao-Zhong Zhang and Huan-Qiang Zhou
- Tunneling magnetoresistance in mixed-valence manganite tunnel junctions 54
Pin Lyu, D. Y. Xing, and Jinming Dong
- Strongly disordered antiferromagnetic spin-1 chains with random anisotropy 58
Andreia Saguia, Beatriz Boechat, and M. A. Continentino
- Magnetic moment of a spinon and thermodynamic properties of the one-dimensional Heisenberg model 62
W. McRae and O. P. Sushkov
- Non-Abelian bosonization and Haldane's conjecture 65
D. C. Cabra, P. Pujol, and C. von Reichenbach
- Bosonization analysis of the antiferromagnetic $s = \frac{1}{2}$ spin ladders 69
D. Schmeltzer
- Collinear Néel-type ordering in partially frustrated lattices 73
Uma Bhaumik and Indrani Bose
- Recovery of the magnetic ordering in $\text{Y}_{1-x}\text{Ce}_x\text{Mn}_2$ induced by hydrogen absorption 77
Jesús Chaboy, Cristina Piquer, Augusto Marcelli, Maurizio Battisti, Giannantonio Cibin, and Latchezar Bozukov
- Structure and local magnetic moments of epitaxial $\text{Fe}(100)_{100-x}\text{Co}_x$ alloy films determined by photoelectron diffraction and magnetic linear dichroism 81
R. Schellenberg, E. Kisker, M. Faust, A. Fanelisa, and F. U. Hillebrecht
- Gap suppression and development of antiferromagnetic order in $\text{CeRh}_{1-x}\text{Pd}_x\text{Sb}$: Heat-capacity studies 85
Latika Menon, F. E. Kayzel, A. de Visser, and S. K. Malik
- Electron-microscope study of the formation and further crystallization of noncrystalline nickel 89
C. Ballesteros, A. Zern, A. García-Escorial, A. Hernando, and J. M. Rojo
- Magnetic phases of fcc Fe films in the 5–11 monolayer thickness range 93
Ernesto J. Escorcia-Aparicio, Hyuk J. Choi, R. K. Kawakami, and Z. Q. Qiu
- Simple mechanism for a positive exchange bias 97
T. M. Hong
- Magnetic trilayers with bilinear and biquadratic exchange couplings: Criteria for the measurement of J_1 and J_2 ... 101
C. Chesman, M. A. Lucena, M. C. de Moura, , A. Azevedo, F. M. de Aguiar, S. M. Rezende, and S. S. P. Parkin

Superfluidity and superconductivity

- Geometric laws of vortex quantum tunneling 105
Uwe R. Fischer
- Confirmation using Monte Carlo ground-state energies of the instability of free planar films of liquid ^4He at $T = 0$ K 109
Leszek Szybisz

Specific heat of the ternary compounds UPd_2Si_2 and UNi_2Si_2	113
T. Startseva, F. S. Razavi, H. Salamati, G. Quirion, and J. D. Garrett	
Nonexistence of $d_{x^2-y^2}$ superconductivity in the Hubbard model	117
Gang Su and Masuo Suzuki	
Giant flux quantization in layered superconductors	121
S. E. Shafranjuk and T. Yamashita	
Topological structure of the London equation	125
Yishi Duan, Hong Zhang, and Sheng Li	
Field-enhanced superconductivity in disordered wire networks	128
C. Bonetto, N. E. Israeloff, N. Pokrovskiy, and R. Bojko	
Anisotropy dependence of half-loop-mediated vortex motion in thallium-based superconductors studied by magnetoresistivity	132
F. Warmont, Ch. Goupil, V. Hardy, and Ch. Simon	
Role of sample geometry on nonlinear transport properties of the vortex solid in $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_8$	135
R. A. Doyle, S. F. W. R. Rycroft, T. B. Doyle, E. Zeldov, T. Tamegai, and S. Ooi	

ARTICLES

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

Crystallographic evidence for chemical ordering in $\text{UCu}_{5-x}\text{Pd}_x$	139
R. Chau, M. B. Maple, and R. A. Robinson	
Oscillatory phenomena in directional solidification	144
Hans Peter Grimm and Philippe Metzener	
Symmetry-breaking Ta^{4+} centers in KTaO_3	156
V. V. Laguta, M. I. Zaritskii, M. D. Glinchuk, I. P. Bykov, J. Rosa, and L. Jastrabík	
Effect of partial void filling on the lattice thermal conductivity of skutterudites	164
G. S. Nolas, J. L. Cohn, and G. A. Slack	
Bonding properties of tellurium under high pressure from ^{125}Te Mössbauer studies	171
P. Vulliet and J. P. Sanchez	

Inhomogeneous, disordered, and partially ordered systems

Local magnetic properties of $\gamma\text{-Fe-Mn}$ alloys	175
C. Paduani and J. C. Krause	
Localized electromagnetic waves in a layered periodic dielectric medium with a defect	180
Alexander Figotin and Vladimir Goretsveig	
Experimental test of morphological stability theory for a planar interface during rapid solidification	189
David E. Hoggund, Michael O. Thompson, and Michael J. Aziz	
Kinetics of holographic refractive-index gratings in rare-earth-sensitized glasses	200
George S. Dixon, Abdulatif Y. Hamad, and James P. Wicksted	

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

Quasiharmonic lattice-dynamics and molecular-dynamics calculations for the Lennard-Jones solids	206
Raffaele Guido Della Valle and Elisabetta Venuti	
Diffusion and creep of a particle in a random potential	213
D. A. Gorokhov and G. Blatter	
High-resolution infrared spectroscopy of the $J=1$ H_2 pair in parahydrogen crystals	218
Y. Zhang, T. J. Byers, M.-C. Chan, T. Momose, K. E. Kerr, D. P. Weliky, and T. Oka	
Rotational and vibrational excitations in solid parahydrogen	234
Massimo Moraldi, Mario Santoro, Lorenzo Ulivi, and Marco Zoppi	

Kinetic energy of ^4He along the $T=6.1$ K isotherm	242
M. Celli, M. Zoppi, and J. Mayers	
Spin relaxation for motion restricted to two dimensions	248
A. F. McDowell, Peter A. Fedders, and Mark S. Conradi	
Nuclear inelastic scattering of synchrotron radiation by ^{119}Sn	254
A. I. Chumakov, A. Barla, R. Rüffer, J. Metge, H. F. Grünsteudel, H. Grünsteudel, J. Plessel, H. Winkelmann, and M. M. Abd-Elmeguid	
Magnetism	
Spin-wave theory of exchange-induced anisotropy	258
Harry Suhl and Ivan K. Schuller	
Magnetization switching in a Heisenberg model for small ferromagnetic particles	265
D. Hinzke and U. Nowak	
Phase transitions induced by easy-plane anisotropy in the classical Heisenberg antiferromagnet on a triangular lattice: A Monte Carlo simulation	273
Luca Capriotti, Ruggero Vaia, Alessandro Cuccoli, and Valerio Tognetti	
Random-field effect on the quantum ferromagnetic XY model	282
Yu-qiang Ma	
Magnetic interactions in the ludwigite $\text{Ni}_2\text{FeO}_2\text{BO}_3$	287
J. C. Fernandes, R. B. Guimarães, M. A. Continentino, H. A. Borges, A. Sulpice, J-L. Tholence, J. L. Siqueira, L. I. Zawislak, J. B. M. da Cunha, and C. A. dos Santos	
Adiabatic spin dynamics from spin-density-functional theory: Application to Fe, Co, and Ni	293
S. V. Halilov, H. Eschrig, A. Y. Perlov, and P. M. Oppeneer	
Helical spin-density wave in V_{2-y}O_3	303
T. Wolenski, M. Grodzicki, and J. Appel	
Successive metamagnetic transitions and magnetoresistance in the low-carrier-density strongly correlated electron system CeP	309
T. Terashima, S. Uji, H. Aoki, J. A. A. J. Perenboom, Y. Haga, A. Uesawa, T. Suzuki, S. Hill, and J. S. Brooks	
Nonmonotonous evolution of the Kondo temperature in the phase diagram of $\text{Ce}(\text{Pd}_{1-x}\text{Cu}_x)_2\text{Si}_2$	314
M. Gomez Berisso, O. Trovarelli, P. Pedrazzini, G. Zwicknagl, C. Geibel, F. Steglich, and J. G. Sereni	
Anomalous magnetic response of the spin-one-half Falicov-Kimball model	322
J. K. Freericks and V. Zlatić	
Relaxation of the magnetization of Mn_{12} acetate	330
J. A. A. J. Perenboom, J. S. Brooks, S. Hill, T. Hathaway, and N. S. Dalal	
Electronic structure and magnetic properties of Mn_2As	339
Zongxian Yang, Kaiming Zhang, and Xide Xie	
Size-dependent spin-wave frequency in ferromagnetic wire-array structures	345
A. Ercole, A. O. Adeyeye, J. A. C. Bland, and D. G. Hasko	
Ellipsometric and Kerr-effect studies of $\text{Pt}_3\text{-X}$ ($X=\text{Mn,Co}$)	351
R. J. Lange, S. J. Lee, D. W. Lynch, P. C. Canfield, B. N. Harmon, and S. Zollner	
Absence of string order in the anisotropic $S=2$ Heisenberg antiferromagnet	359
H. Aschauer and U. Schollwöck	
Thermal dependence of coercivity in soft magnetic nanocrystals	366
A. Hernando, P. Marín, M. Vázquez, J. M. Barandiarán, and G. Herzer	
Spin-glass phases in stage-2 FeCl_3 graphite intercalation compound	371
Masatsugu Suzuki and Itsuko S. Suzuki	
Dynamic susceptibility of parallel stripe domains with flexing domain walls	385
N. Vukadinovic, A. Serraj, H. Le Gall, and J. Ben Youssef	

Magnetism of thin Ising films with rough surfaces	394
F. D. A. Aarão Reis	
Noncollinear XY spin system: First-order transition and evidence of a reentrance	400
E. H. Boubcheur, R. Quartu, H. T. Diep, and O. Nagai	
Thermodynamics of the first-order valence transition in YbInCu ₄	409
J. L. Sarrao, A. P. Ramirez, T. W. Darling, F. Freibert, A. Migliori, C. D. Immer, Z. Fisk, and Y. Uwatoko	
First-order paramagnetic-to-commensurate phase transition in Cr alloys	414
R. S. Fishman, X. W. Jiang, and S. H. Liu	
Microscopic theory of magnetoresistance in granular materials	425
Yu. G. Pogorelov, M. M. P. de Azevedo, and J. B. Sousa	
Spin-polarized electron tunneling across a disordered insulator	432
E. Yu. Tsymbal and D. G. Pettifor	
Superfluidity and superconductivity	
Microscopic theory of two-dimensional liquid ³ He	438
A. Doroudi	
SO(5) symmetric ladder	443
D. Scalapino, Shou-Cheng Zhang, and W. Hanke	
Dynamics of stripes in doped antiferromagnets	453
C. Morais Smith, Yu. A. Dimashko, N. Hasselmann, and A. O. Caldeira	
Josephson vortex contribution to <i>c</i> -axis thermopower in Bi ₂ Sr ₂ CaCu ₂ O _{8+δ} single crystals	462
G. Yu. Logvenov, O. Waldmann, R. Kleiner, and Paul Müller	
Superconductivity of gallium in various confined geometries	467
E. V. Charnaya, C. Tien, K. J. Lin, C. S. Wur, and Yu. A. Kumzerov	
Analysis of dichroism in the electromagnetic response of superconductors	473
K. Capelle, E. K. U. Gross, and B. L. Györfy	
Vortex bending and avalanche in a type-II superconductor observed with contactless ultrasonics	490
Katsuhiko Kawashima	
Low-temperature behavior of two ternary lanthanide nickel carbides: Superconducting LaNiC ₂ and magnetic CeNiC ₂	497
V. K. Pecharsky, L. L. Miller, and K. A. Gschneidner, Jr.	
Signatures of stripe phases in hole-doped La ₂ NiO ₄	503
Ya-Sha Yi, Zhi-Gang Yu, A. R. Bishop, and J. Tinka Gammel	
Modeling of tunneling spectroscopy in high- <i>T_c</i> superconductors incorporating band structure, gap symmetry, group velocity, and tunneling directionality	514
Z. Yusof, J. F. Zasadzinski, L. Coffey, and N. Miyakawa	
Van Hove scenario and the eight-band model for high- <i>T_c</i> superconductors	522
Z. Szotek, B. L. Györfy, W. M. Temmerman, and O. K. Andersen	
Oscillatory dynamics of the driven vortex solid in YBa ₂ Cu ₃ O _{7-δ} single crystals	527
S. N. Gordeev, A. P. Rassau, P. A. J. de Groot, R. Gagnon, and L. Taillefer	
Flux-pinning behavior and the interlayer coupling of the Hg _{0.7} Cr _{0.3} Sr ₂ CuO _{4+δ} superconductor	538
Jae-Hyuk Choi, Mun-Seog Kim, Sung-Ik Lee, Su-Young Lee, In-Sang Yang, J. V. Yakhmi, J. B. Mandal, B. Bandyopadhyay, and B. Ghosh	
Errata	
Erratum: Theory of Josephson effects in anisotropic superconductors [Phys. Rev. B 56 , 892 (1997)]	544
Yukio Tanaka and Satoshi Kashiwaya	
Cumulative Author Index	545