

PHYSICAL REVIEW B

CONDENSED MATTER

THIRD SERIES, VOLUME 54, NUMBER 5

CONTENTS

1 AUGUST 1996-I

BRIEF REPORTS

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

Numerical study of excitons in a two-dimensional organic dye aggregate	2963
Akihiro Tomioka and Kenjiro Miyano	
Fractal dimension of Li insertion electrodes studied by diffusion-controlled voltammetry and impedance spectroscopy	2968
M. Strømme Mattsson, G. A. Niklasson, and C. G. Granqvist	
Finite-size effects on the incommensurate phase transition of bis(4-chlorophenyl)sulphone studied by ^{35}Cl NQR	2972
J. Schneider, C. Schürer, and A. Brunetti	
Effects of higher-coordination shells in garnets detected by x-ray-absorption spectroscopy at the Al K edge	2976
Ziyu Wu, Augusto Marcelli, Annibale Mottana, Gabriele Giuli, Eleonora Paris, and Friedrich Seifert	

Inhomogeneous, disordered, and partially ordered systems

Computer-simulation study of the thermal conductivity of amorphous insulating solids	2980
Vladislav Malyshkin and Arthur R. McGurn	
Fluctuating loops and glassy dynamics of a pinned line in two dimensions	2984
Anders B. Eriksson, Jari M. Kinaret, and Lev V. Mikheev	

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

Theory of inelastic x-ray scattering by phonons in ice	2988
Peter Johansson	
Effects of quantum lattice fluctuations on vibron pairing in two-site systems	2992
Z. Ivić, Ž. Pržulj, D. Kostić, D. Kapor, and M. Skrinjar	

Magnetism

Hyperuniversal amplitude ratios and the central charge of the spin-one Ising model	2996
Rajiv R. P. Singh and Joan Adler	
Replica symmetry breaking for a simple model of a quadrupolar glass	2999
K. Walasek, K. Lukierska-Walasek, and M. Wodawski	
Tight-binding study of the ionization of iron clusters	3003
S. Bouarab, A. Vega, J. A. Alonso, and M. P. Iñiguez	
Charge ordering and magnetoresistance in $\text{Nd}_{1-x}\text{Ca}_x\text{MnO}_3$ due to reduced double exchange	3007
K. Liu, X. W. Wu, K. H. Ahn, T. Sulchek, C. L. Chien, and John Q. Xiao	
Influence of side groups on 90° superexchange: A modification of the Goodenough-Kanamori-Anderson rules	3011
Wiebe Geertsma and D. Khomskii	
Competition between spin, charge, and bond waves in a Peierls-Hubbard model	3015
Pablo A. Venegas, Carlos Henríquez, and Jaime Rössler	
Monte Carlo calculation of the transition temperature of the anisotropic three-dimensional XY model	3019
B. V. Costa, A. R. Pereira, and A. S. T. Pires	
Series expansion for the J_1 - J_2 Heisenberg antiferromagnet on a square lattice	3022
J. Oitmaa and Zheng Weihong	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 5

1 AUGUST 1996-I

Tensile stress dependence of the Curie temperature and hyperfine field in Fe-Zr-B-(Cu) amorphous alloys	3026
J. M. Barandiarán, P. Gorria, I. Orúe, M. L. Fdez-Gubieda, F. Plazaola, and A. Hernando	
Structural, magnetic, and electronic properties of Fe/Au monatomic multilayers	3030
Zhu-Pei Shi, John F. Cooke, Zhenyu Zhang, and Barry M. Klein	
Giant magnetoresistance in Cu-Mn-Al	3033
L. Yiping, A. Murthy, G. C. Hadjipanayis, and H. Wan	
NMR studies of Na atoms in silicon clathrate compounds	3037
Jan Gryko, Paul F. McMillan, and Otto F. Sankey	

Superfluidity and superconductivity

Renormalization-group approach to Fermi-liquid theory	3040
N. Dupuis and G. Y. Chitov	
Relaxation of charge imbalance in a <i>d</i> -wave superconductor	3044
C. H. Choi	
Radiation linewidth of a long Josephson junction in the flux-flow regime	3047
A. A. Golubov, B. A. Malomed, and A. V. Ustinov	
First-order vortex unbinding transition in thin superconducting films	3051
D. Yu. Irz, V. N. Ryzhov, and E. E. Tareyeva	
Conspicuous domination of polarization relaxation in kinetics of first-order phase transitions in perovskites	3055
Alex Gordon, Simon Dorfman, and David Fuks	
Superconductivity in a strongly correlated one-band system	3058
T. Domański, K. I. Wysokiński, and R. Ramakumar	
Thermal conductivity of RNi_2B_2C ($R=Y, Ho$) single crystals	3062
M. Sera, S. Kobayash, M. Hiroi, N. Kobayashi, H. Takeya, and K. Kadowaki	
Effect of pressure on spin-gap behavior in Pr-doped and oxygen-deficient $YBa_2Cu_3O_7$ thin films	3066
I. François, J. Genoe, and G. Borghs	
Spin-gap behavior in underdoped $TlSr_2(Lu_{0.7}Ca_{0.3})Cu_2O_y$: ^{63}Cu and ^{205}Tl NMR studies	3070
K. Magishi, Y. Kitaoka, G.-q. Zheng, K. Asayama, T. Kondo, Y. Shimakawa, T. Manako, and Y. Kubo	

ARTICLES

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

First-principles determination of the effects of boron and sulfur on the ideal cleavage fracture in Ni_3Al	3074
Sheng N. Sun, Nicholas Kioussis, and Mikael Ciftan	
Hydrogen-induced lattice expansion in a (001)-oriented Mo/V superlattice	3079
F. Stillesjö, B. Hjörvarsson, and H. Zabel	
Positron studies of defects in ion-implanted SiC	3084
G. Brauer, W. Anwand, P. G. Coleman, A. P. Knights, F. Plazaola, Y. Pacaud, W. Skorupa, J. Störmer, and P. Willutzki	
Thermal conductivity of C_{60} at pressures up to 1 GPa and temperatures in the 50–300 K range	3093
O. Andersson, A. Soldatov, and B. Sundqvist	
Evaluation of time-dependent grain-size populations for nucleation and growth kinetics	3101
D. Crespo and T. Pradell	
Time dependence of dislocation arrays in ice during recrystallization	3110
J. van der Elsken, W. Bras, J. Dings, and J. C. F. Michielsen	
Synchrotron x-ray-scattering study of the normal-incommensurate phase transition in Rb_2ZnCl_4	3115
M. P. Zinkin, D. F. McMorrow, J. P. Hill, R. A. Cowley, J.-G. Lussier, A. Gibaud, G. Grübel, and C. Sutter	
Optical activity in the incommensurate phase of $((CH_3)_4N)_2ZnCl_4$	3125
M. Kremers, E. Dijkstra, and H. Meekes	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 5

1 AUGUST 1996-I

Influence of incommensurate modulation on the optical properties of the solid solution $((\text{CH}_3)_4\text{N})_2\text{ZnCl}_{2.8}\text{Br}_{1.2}$...	3136
M. Kremers and H. Meekes	
Evolution of long-range order and composition for radiation-induced precipitate dissolution	3142
Eric Camus, Christian Abromeit, Françoise Bourdeau, Nelja Wanderka, and Heinrich Wollenberger	
Phase transitions and glasslike behavior in $\text{Sr}_{1-x}\text{Ba}_x\text{TiO}_3$	3151
V. V. Lemanov, E. P. Smirnova, P. P. Syrnikov, and E. A. Tarakanov	
Grain-size effect on structure and phase transformations for barium titanate	3158
M. H. Frey and D. A. Payne	
Improved R-space resolution of EXAFS spectra using combined regularization methods and nonlinear least-squares fitting	3169
D. S. Yang and G. Bunker	
Low-mass secondary-ion ejection from molecular solids by MeV heavy ions: Radial velocity distributions	3173
R. M. Papaléo, P. Demirev, J. Eriksson, P. Håkansson, and B. U. R. Sundqvist	
Self-consistent mean-field theory of asymmetric first-order structural phase transitions	3184
W. C. Kerr and E. N. Butler	
Inhomogeneous, disordered, and partially ordered systems	
Experimental studies of atomic structure, electronic structure, and the electronic transport mechanism in amorphous Al-Cu-Y and Mg-Cu-Y ternary alloys	3200
T. Fukunaga, H. Sugiura, N. Takeichi, and U. Mizutani	
Local atomic order and individual pair displacements of $\text{Fe}_{46.5}\text{Ni}_{53.5}$ and $\text{Fe}_{22.5}\text{Ni}_{77.5}$ from diffuse x-ray scattering studies	3211
X. Jiang, G. E. Ice, C. J. Sparks, L. Robertson, and P. Zschack	
Kinetic features of phase separation under alloy ordering	3227
V. Yu. Dobretsov, V. G. Vaks, and G. Martin	
Sharpening of enhanced backscattering peak in a disordered gain medium	3240
Shechao Charles Feng and Zhao-Quing Zhang	
Dynamics, dynamical systems, lattice effects, quantum solids, etc.	
Measurements of the ballistic-phonon component resulting from nuclear and electron recoils in crystalline silicon	3244
A. T. Lee, B. Cabrera, B. L. Dougherty, M. J. Penn, J. G. Pronko, and S. Tamura	
Modulation instability and recurrence phenomena in anharmonic lattices	3257
V. M. Burlakov, S. A. Darmanyan, and V. N. Pyrkov	
Molecular dynamics and higher-order perturbation-theory results for the anharmonic free energy and equation of state of a Lennard-Jones solid	3266
Daniel J. Lacks and Ramesh C. Shukla	
Nonadiabatic effects in a soliton ground state of an extended Jahn-Teller system in one dimension	3273
E. Majerníková	
Stochastic approach to simulation of lattice vibrations in strongly anharmonic crystals: Anomalous frequency dependence of the dynamic structure factor	3286
Yu. N. Gornostyrev, M. I. Katsnelson, A. V. Trefilov, and S. V. Tret'jakov	
Giant enhancement of cubic nonlinearity in a polycrystalline quasi-one-dimensional conductor	3295
David Stroud	
Memory effects in the frictional damping of diffusive and vibrational motion of adatoms	3300
A. Cucchetti and S. C. Ying	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 5

1 AUGUST 1996-I

Magnetism

Spin diffusion in one-dimensional antiferromagnets	3311
B. N. Narozhny	
Tunneling theory for exchange coupling between two ferromagnets separated by an amorphous-semiconducting barrier	3322
Ming-wen Xiao and Zheng-zhong Li	
Griffiths singularities in the disordered phase of a quantum Ising spin glass	3328
H. Rieger and A. P. Young	
Quantum Griffiths singularities in the transverse-field Ising spin glass	3336
Muyu Guo, R. N. Bhatt, and David A. Huse	
Quantum fluctuations in a disordered two-dimensional spin model	3343
P. Gawieć and D. R. Grempel	
Vortex statistics in a disordered two-dimensional XY model	3350
Lei-Han Tang	
Quantum orientational glasses: Large- M limit approach	3367
T. K. Kopeć	
Magnetically induced crystal structure and phase stability in $\text{Fe}_{1-c}\text{Co}_c$	3380
I. A. Abrikosov, P. James, O. Eriksson, P. Söderlind, A. V. Ruban, H. L. Skriver, and B. Johansson	
Brillouin light scattering study of Fe/Cr/Fe (211) and (100) trilayers	3385
M. Grimsditch, S. Kumar, and Eric E. Fullerton	
Phase diagram for the striped phase in the two-dimensional dipolar Ising model	3394
J. Arlett, J. P. Whitehead, A. B. MacIsaac, and K. De'Bell	
Surface-induced superparamagnetic relaxation in nanoscale ferrihydrite particles	3403
Jianmin Zhao, Frank E. Huggins, Zhen Feng, and Gerald P. Huffman	
Magnetic properties and magnetic phase diagram of the frustrated $\text{Co}_{1-x}\text{Fe}_x\text{Pt}_3$ compounds	3408
T. H. Kim, M. C. Cadeville, A. Dinia, V. Pierron-Bohnes, and H. Rakoto	
Magnetic order in the random-field Ising film $\text{Fe}_{0.52}\text{Zn}_{0.48}\text{F}_2$	3420
D. P. Belanger, J. Wang, Z. Slanić, S.-J. Han, R. M. Nicklow, M. Lui, C. A. Ramos, and D. Lederman	
Nanoscale magnetic domain structures in epitaxial cobalt films	3428
M. Hehn, S. Padovani, K. Ounadjela, and J. P. Bucher	
Universality of the Ising model on spherelike lattices	3434
Ch. Hoelbling and C. B. Lang	
Critical behavior of weakly disordered anisotropic systems in two dimensions	3442
Giancarlo Jug and Boris N. Shalaev	
Electronic transport and Kondo effect in $\text{La}_{1-x}\text{Ce}_x$ films	3454
C. Roth, C. Sürgers, and H. v. Löhneysen	
Experimental study of ferromagnetic chains composed of nanosize Fe spheres	3462
L. Zhang and A. Manthiram	
Raman scattering in a two-layer antiferromagnet	3468
Dirk K. Morr, Andrey V. Chubukov, Arno P. Kampf, and G. Blumberg	

Superfluidity and superconductivity

London penetration depth of strongly coupled isotropic superconductors: Low-temperature behavior	3482
X. Leyronas and R. Combescot	
Superconducting order parameters with sign changes: The density of states and impurity scattering	3489
Gianfranco Preosti and Paul Muzikar	
Quasiparticle band in the frustrated t - t' - J model	3495
Jan Bała and Andrzej M. Oleś	
Critical statistical charge for anyonic superconductivity	3499
James Ball and Wei Chen	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 5

1 AUGUST 1996-I

Kinetics of vortex formation in superconductors with d pairing	3504
A. E. Filippov, A. V. Radievsky, and A. S. Zeltser	
Complex conductivity of proximity-superconducting Nb/Cu bilayers	3508
M. S. Pambianchi, Lie Chen, and Steven M. Anlage	
Flux penetration into flat superconductors of arbitrary shape: Patterns of magnetic and electric fields and current	3514
Th. Schuster, H. Kuhn, and E. H. Brandt	
Robust critical behavior in $\text{YBa}_2\text{Cu}_3\text{O}_7$ thin films	3525
Mark Friesen, J. Deak, Lifang Hou, and M. McElfresh	
Screening effect of Ohmic and superconducting planar thin films	3530
John Gilchrist and Ernst Helmut Brandt	
Fast algorithms for Josephson-junction arrays: Busbars and defects	3545
Sujay Datta, Shantilal Das, Deshdeep Sahdev, Ravi Mehrotra, and Subodh R. Shenoy	
Eliashberg-type equations for correlated superconductors	3553
Karol I. Wysokinski	
$^{63/65}\text{Cu}/^{203/205}\text{Tl}$ NMR study on the antiferromagnetic phase of the Tl-based high- T_c oxide $\text{TlBa}_2\text{YCu}_2\text{O}_7$	3562
Takayuki Goto, Satoru Nakajima, Masae Kikuchi, Yasuhiko Syono, and Tetsuo Fukase	
Photovoltaic effect in small superconducting-normal-metal systems	3571
R. E. Bartolo and N. Giordano	
Inverse photoemission in strongly correlated electron systems	3576
R. Eder and Y. Ohta	
Ion-size effect on transport properties in $R_{0.9}\text{Ca}_{0.1}\text{Ba}_2\text{Cu}_3\text{O}_{7-\delta}$ systems ($R=\text{Tm, Ho, Gd, and Nd}$)	3580
Weiyuan Guan, J. C. Chen, and S. H. Cheng	
Charge-transfer model of s - and d -wave pairing in the cuprates	3589
Charles P. Enz	
Anomalous behavior of a Fermi system interacting with a bosonic critical mode	3597
M. Crisan and L. Tataru	
Transport properties of high- T_c $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ crystals near the superconducting transition	3602
Y. M. Wan, T. R. Lemberger, S. E. Hebboul, and J. C. Garland	
Magnetoresistivity of thin films of the electron-doped high- T_c superconductor $\text{Nd}_{1.85}\text{Ce}_{0.15}\text{CuO}_{4\pm\delta}$	3610
J. Herrmann, M. C. de Andrade, C. C. Almasan, R. P. Dickey, M. B. Maple, Wu Jiang, S. N. Mao, and R. L. Greene	
Theory of tunneling and photoemission spectroscopy for high-temperature superconductors	3617
Konstantin Kouznetsov and Liam Coffey	
Interaction of two-dimensional vortices with linear ion tracks in the highly anisotropic layered cuprates	3622
K. E. Gray, J. D. Hettinger, D. J. Miller, B. R. Washburn, C. Moreau, C. Lee, B. G. Glagola, and M. M. Eddy	
c -axis resistance peak above the critical temperature in layered superconductors	3628
G. Balestrino, E. Milani, C. Aruta, and A. A. Varlamov	
Pinning phenomena and critical current in proton-irradiated sintered $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$	3633
E. Mezzetti, S. Colombo, R. Gerbaldo, G. Ghigo, L. Gozzelino, B. Minetti, and R. Cherubini	
Tunneling in two-channel Kondo superconducting junctions	3640
A. Golub	
Effect of van Hove singularities on a spin liquid	3645
L. B. Ioffe and A. J. Millis	
Theory of superconducting T_c of doped fullerenes	3655
A. S. Alexandrov and V. V. Kabanov	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 54, NUMBER 5

1 AUGUST 1996-I

Errata

Erratum: Optical alignment of axial Fe centers in KTaO_3 [Phys. Rev. B 51 , 6707 (1995)]	3662
H.-J. Reyher, B. Faust, M. Käding, H. Hesse, E. Ruža, and M. Wöhlecke	
Erratum: Excitation spectrum of the attractive Hubbard model [Phys. Rev. B 52 , 16 223 (1995)]	3662
R. Micnas, M. H. Pedersen, S. Schafroth, T. Schneider, J. J. Rodríguez-Núñez, and H. Beck	
Erratum: Magnetostrictive bending of a film-substrate system [Phys. Rev. B 53 , 2481 (1996)]	3662
P. M. Marcus	
Erratum: Electric-field-dependent variable-range hopping conductance in quasi-two-dimensional systems: Application to $\text{PrBa}_2\text{Cu}_3\text{O}_{7-y}$ -based superconductor–normal-metal–superconductor junctions [Phys. Rev. B 53 , 6806 (1996)]	3663
M. Singh, B. Thompson, and O. Dumas	
Cumulative Author Index	3664