

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 59, NUMBER 6

CONTENTS

1 FEBRUARY 1999-II

RAPID COMMUNICATIONS

Magnetism

- Low-temperature magnetoresistance in insulating α - $\text{Gd}_x\text{Si}_{1-x}$ alloys R3929
P. Xiong, B. L. Zink, S. I. Applebaum, F. Hellman, and R. C. Dynes
- High-frequency ferromagnetic resonance on ultrafine cobalt particles R3934
M. Respaud, M. Goiran, J. M. Broto, F. H. Yang, T. Ould Ely, C. Amiens, and B. Chaudret
- Oscillations of the Curie temperature and interlayer exchange coupling in magnetic trilayers R3938
A. Ney, F. Wilhelm, M. Farle, P. Pouloupoulos, P. Srivastava, and K. Baberschke

Superfluidity and superconductivity

- Peculiar spin echo in thick ^3He films on boron nitride R3941
Kiho Kim and N. S. Sullivan
- Electronic vortex structure and quasiparticle scattering in the cuprate superconductor $\text{Nd}_{2-x}\text{Ce}_x\text{CuO}_y$ R3945
R. P. Huebener, O. M. Stoll, and S. Kaiser
- Charge localization from local destruction of antiferromagnetic correlation in Zn-doped $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ R3948
Kouji Segawa and Yoichi Ando
- Local magnetic and structural properties of the low-temperature orthorhombic to low-temperature tetragonal transition: A ^{139}La NQR study in lightly hole-doped $\text{La}_{1.8-x}\text{Eu}_{0.2}\text{Sr}_x\text{CuO}_4$ R3952
B. J. Suh, P. C. Hammel, M. Hückler, and B. Büchner

ARTICLES

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

- Structural phase transition in the ammoniated alkali C_{60} compound $(\text{NH}_3)\text{K}_3\text{C}_{60}$ 3956
Kenji Ishii, Tetsu Watanuki, Akihiko Fujiwara, Hiroyoshi Suematsu, Yoshihiro Iwasa, Hideo Shimoda, Tadaoki Mitani, Hironori Nakao, Yasuhiko Fujii, Youichi Murakami, and Hajime Kawada
- EXAFS studies on undercooled liquid $\text{Co}_{80}\text{Pd}_{20}$ alloy 3961
G. Jacobs and I. Egry
- Defect migration in crystalline silicon 3969
Lindsey J. Munro and David J. Wales
- Heavy-ion irradiation effects in the ABO_4 orthosilicates: Decomposition, amorphization, and recrystallization ... 3981
A. Meldrum, S. J. Zinkle, L. A. Boatner, and R. C. Ewing
- Elasticity, stability, and ideal strength of β -SiC in plane-wave-based *ab initio* calculations 3993
Weixue Li and Tzuchiang Wang



Failure probabilities and tough-brittle crossover of heterogeneous materials with continuous disorder	4002
B. Q. Wu and P. L. Leath	
Ionic layered PbFCl-type compounds under high pressure	4011
F. Decremps, M. Fischer, A. Polian, J. P. Itié, and M. Sieskind	
High-temperature phase transitions in SrZrO ₃	4023
Brendan J. Kennedy, Christopher J. Howard, and Bryan C. Chakoumakos	
Structural phase stability and electron-phonon coupling in lithium	4028
Amy Y. Liu, Andrew A. Quong, J. K. Freericks, E. J. Nicol, and Emily C. Jones	
Lattice dynamics and thermal expansion of quartz	4036
M. B. Smirnov	
First-principles calculations to describe zirconia pseudopolymorphs	4044
G. Jomard, T. Petit, A. Pasturel, L. Magaud, G. Kresse, and J. Hafner	
Inhomogeneous, disordered, and partially ordered systems	
Origin of the boson peak in a network glass B ₂ O ₃	4053
D. Engberg, A. Wischnewski, U. Buchenau, L. Börjesson, A. J. Dianoux, A. P. Sokolov, and L. M. Torell	
Disordered periodic systems at the upper critical dimension	4058
R. Chitra, T. Giamarchi, and P. Le Doussal	
Effect of Xe ₂ * light (7.2 eV) on the infrared and vacuum ultraviolet absorption properties of hydroxyl groups in silica glass	4066
Yukihiro Morimoto, Shigenori Nozawa, and Hideo Hosono	
Interplay of disorder and nonlinearity in Klein-Gordon models: Immobile kinks	4074
Serge F. Mingaleev, Yuri B. Gaididei, Eva Majerníková, and Serge Shpyrko	
Smoothed universal correlations in the two-dimensional Anderson model	4080
Ville Uski, Bernhard Mehlig, Rudolf A. Römer, and Michael Schreiber	
Defect and transmission properties of two-dimensional quasiperiodic photonic band-gap systems	4091
Samuel S. M. Cheng, Lie-Ming Li, C. T. Chan, and Z. Q. Zhang	
Force constants for substitutional alloys	4100
Marcel H. F. Sluiter, M. Weinert, and Yoshiyuki Kawazoe	
Spontaneous and stimulated emission from a ladder-type conjugated polymer	4112
B. Schweitzer, G. Wegmann, D. Hertel, R. F. Mahrt, H. Bässler, F. Uckert, U. Scherf, and K. Müllen	
Neutron inelastic scattering study of Se-As-Ge glasses: A test of the vibrational isocoordinate rule	4119
Birgit Effey and R. L. Cappelletti	
Dynamics, dynamical systems, lattice effects, quantum solids, etc.	
Simulation of thermal conductivity and heat transport in solids	4125
C. Oligschleger and J. C. Schön	
Incoherent elastic-neutron-scattering study of the vibrational dynamics and spin-related symmetry of protons in the KHCO ₃ crystal	4134
S. Ikeda and F. Fillaux	
Comparative study of optical phonons in the rhombohedrally distorted perovskites LaAlO ₃ and LaMnO ₃	4146
M. V. Abrashev, A. P. Litvinchuk, M. N. Iliev, R. L. Meng, V. N. Popov, V. G. Ivanov, R. A. Chakalov, and C. Thomsen	
Pressure and temperature-dependent Raman study of YLiF ₄	4154
E. Sarantopoulou, Y. S. Raptis, E. Zouboulis, and C. Raptis	

Magnetism

Spin-spin interaction and magnetic state of a two-dimensional Wigner crystal	4163
V. V. Flambaum, I. V. Ponomarev, and O. P. Sushkov	
Conductance as a function of temperature in the double-exchange model	4170
M. J. Calderón, J. A. Vergés, and L. Brey	
Nature of a phase transition and low-temperature phase in cubic ferromagnets	4176
J. Sznajd and M. Dudziński	
Magnetization plateaus in weakly coupled dimer spin system	4181
Alexei K. Kolezhuk	
Coexistence of ferromagnetic and glassy behavior in the $\text{La}_{0.5}\text{Sr}_{0.5}\text{CoO}_3$ perovskite compound	4189
D. N. H. Nam, K. Jonason, P. Nordblad, N. V. Khiem, and N. X. Phuc	
Tight-binding study of the CO chemisorption effect on cobalt magnetization	4195
Štěpán Pick and Hugues Dreyssé	
Surface magnetometry with photoemission dichroism: Ultrathin epitaxial Fe-Co bcc alloys on Fe(100)	4201
Marco Liberati, Giancarlo Panaccione, Fausto Sirotti, Pilar Prieto, and Giorgio Rossi	
Oxygen-induced enhancement of the spin-dependent effects in electron spectroscopies of Fe(001)	4207
Riccardo Bertacco and Franco Ciccacci	
Surface-induced transverse magneto-optical Kerr effect	4211
A. V. Petukhov, A. Kirilyuk, and Th. Rasing	
Low-temperature heat-capacity studies of $R_2\text{Ni}_3\text{Si}_5$ ($R=\text{Pr, Nd, Sm, Gd, Tb, Dy, Ho}$)	4215
Chandan Mazumdar, K. Ghosh, R. Nagarajan, S. Ramakrishnan, B. D. Padalia, and L. C. Gupta	
Successive magnetic phase transitions of a $\text{CoCl}_2\text{-FeCl}_3$ graphite bi-intercalation compound	4221
Masatsugu Suzuki and Itsuko S. Suzuki	
Longitudinal spin fluctuations of coupled integer-spin chains: Haldane triplet dynamics in the ordered phase of CsNiCl_3	4235
M. Enderle, Z. Tun, W. J. L. Buyers, and M. Steiner	
Unexpected modification of magnetic properties by Y substitution in Eu_2PdSi_3	4244
Subham Majumdar, R. Mallik, E. V. Sampathkumaran, P. L. Paulose, and K. V. Gopalakrishnan	
Magnetic hysteresis dynamics of thin Co films on Cu(001)	4249
Jih-Shin Suen, M. H. Lee, G. Teeter, and J. L. Erskine	
Theory of the hysteresis loop in ferromagnets	4260
Igor F. Lyuksyutov, Thomas Nattermann, and Valery Pokrovsky	
Composition-driven change of the magnetic anisotropy of ultrathin Co/Au(111) films studied by means of magnetic-force microscopy in ultrahigh vacuum	4273
M. Dreyer, M. Kleiber, A. Wadas, and R. Wiesendanger	
Interlayer coupling in $\text{Fe/Fe}_{1-x}\text{Si}_x$ superlattices	4279
Yasushi Endo, Osamu Kitakami, and Yutaka Shimada	
Spin-polarized tunnel current in magnetic-layer systems and its relation to the interlayer exchange interaction	4287
C. Heide, R. J. Elliott, and Ned S. Wingreen	
μSR evidence for the spin-liquid-to-spin-glass transition in $\beta\text{-Mn}_{1-x}\text{Al}_x$	4305
J. R. Stewart and R. Cywinski	
Orbital polarization in NiFe_2O_4 measured by Ni-2p x-ray magnetic circular dichroism	4314
G. van der Laan, C. M. B. Henderson, R. A. D. Pattrick, S. S. Dhesi, P. F. Schofield, E. Dudzik, and D. J. Vaughan	
Domain-wall scattering in epitaxial FePd ordered alloy films with perpendicular magnetic anisotropy	4322
D. Ravelosona, A. Cebollada, F. Briones, C. Diaz-Paniagua, M. A. Hidalgo, and F. Batallan	
Magnetic moments of fcc Fe overlayers on Cu(100) and Co(100)	4327
D. Schmitz, C. Charton, A. Scholl, C. Carbone, and W. Eberhardt	

Superfluidity and superconductivity

Asymptotic temperature dependence of the superfluid density in liquid ^4He	4334
Torsten Fließbach	
Magnetic field of an in-plane vortex outside a layered superconductor	4343
J. R. Kirtley, V. G. Kogan, J. R. Clem, and K. A. Moler	
Excitations in antiferromagnetic cores of superconducting vortices	4349
Henrik Bruus, Kasper Astrup Eriksen, Michael Hallundbæk, and Per Hedegård	
Universal properties for linelike melting of the vortex lattice	4358
A. E. Koshelev and H. Nordborg	
Quantum Monte Carlo study of the disordered attractive Hubbard model	4364
R. T. Scalettar, N. Trivedi, and C. Huscroft	
Anisotropic magnetoresistance in the organic superconductor $\beta''\text{-(BEDT-TTF)}_2\text{SF}_5\text{CH}_2\text{CF}_2\text{SO}_3$	4376
X. Su, F. Zuo, J. A. Schlueter, Jack M. Williams, P. G. Nixon, R. W. Winter, and G. L. Gard	
Weak localization of disordered quasiparticles in the mixed superconducting state	4382
R. Bundschuh, C. Cassanello, D. Serban, and M. R. Zirnbauser	
Optical conductivity in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ thin films	4390
A. Pimenov, A. Loidl, G. Jakob, and H. Adrian	
Crossing point of the magnetization versus temperature curves and the Meissner fraction in granular $\text{La}_{1.9}\text{Sr}_{0.1}\text{CuO}_4$ superconductors: Random orientation and inhomogeneity effects	4394
J. Mosqueira, M. V. Ramallo, A. Revcolevschi, C. Torrón, and Félix Vidal	
Theoretical studies on the observation of the low-frequency plasma oscillation and its coupling with the Carlson-Goldman mode in dirty quasi-two-dimensional superconductors	4404
Y. Ohashi and S. Takada	
ac Josephson effect in superconducting d -wave junctions	4412
Magnus Hurd, Tomas Löfwander, Göran Johansson, and Göran Wendin	
Scaling property and sign-reversal effect of periodically driven stochastic bistable systems in adiabatic limit	4427
Siyuan Han and R. Rouse	
Observation of anomalous temperature dependence of the critical current in $\text{Pb}/\text{Sr}_2\text{RuO}_4/\text{Pb}$ junctions	4433
R. Jin, Yu. Zadorozhny, Y. Liu, D. G. Schlom, Y. Mori, and Y. Maeno	
Pressure dependence of superconductivity in the $\text{Na}_2\text{Rb}_{0.5}\text{Cs}_{0.5}\text{C}_{60}$ fulleride	4439
Craig M. Brown, Taishi Takenobu, Konstantinos Kordatos, Kosmas Prassides, Yoshihiro Iwasa, and Katsumi Tanigaki	
Charge-stripe ordering from local octahedral tilts: Underdoped and superconducting $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ ($0 \leq x \leq 0.30$)	4445
E. S. Božin, S. J. L. Billinge, G. H. Kwei, and H. Takagi	
Microwave surface impedance of proximity-coupled superconducting (Nb)/spin-glass (CuMn) bilayers	4455
L. V. Mercaldo, Steven M. Anlage, and L. Maritato	
Low-temperature transport properties of $\text{Nb}_{1-x}\text{Ta}_x$ thin films	4463
M. Giannouri, C. Papastaikoudis, and Ralph Rosenbaum	
Incommensurate charge and spin fluctuations in d -wave superconductors	4470
Hae-Young Kee and Yong Baek Kim	
Fluctuation specific heat in multilayered superconductors: Bilayered Gaussian-Ginzburg-Landau scenario for the thermal fluctuations of Cooper pairs around T_c in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ single crystals	4475
Manuel V. Ramallo and Félix Vidal	
c -axis Josephson tunneling between $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+x}$ and Pb	4486
M. Mölle and R. Kleiner	
Vortex lattice transition in d -wave superconductors	4497
Jun'ichi Shiraishi, Mahito Kohmoto, and Kazumi Maki	

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 59, NUMBER 6

1 FEBRUARY 1999-II

Ion-size effect on superconducting transition temperature T_c in $R_{1-x-y}Pr_xCa_yBa_2Cu_3O_{7-z}$ systems ($R = \text{Er, Dy, Gd, Eu, Sm, and Nd}$)	4504
Li-Chun Tung, J. C. Chen, M. K. Wu, and Weiyan Guan	
Dependence of the superconducting transition temperature on the type and number of CuO_2 layers in $\text{Tl}_2\text{Ba}_2\text{Ca}_{n-1}\text{Cu}_n\text{O}_{2n+4-y}$	4513
Xiaojia Chen and Changde Gong	
c -axis current-voltage characteristics and critical current statistics of intrinsic Josephson junctions in $\text{Bi}_2\text{SrCa}_2\text{Cu}_2\text{O}_{8+x}$ single crystals	4524
Gennady Yu. Logvenov, Mikhail V. Fistul, and Paul Müller	
Cumulative Author Index	4529