

PHYSICAL REVIEW B

CONDENSED MATTER AND MATERIALS PHYSICS

THIRD SERIES, VOLUME 57, NUMBER 6

CONTENTS

1 FEBRUARY 1998-II

RAPID COMMUNICATIONS

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

- Multiscale modeling approach for calculating grain-boundary energies from first principles R3181
O. A. Shenderova, D. W. Brenner, A. A. Nazarov, A. E. Romanov, and L. H. Yang
- Nitrogen-driven sp^3 to sp^2 transformation in carbon nitride materials R3185
Jiangtao Hu, Peidong Yang, and Charles M. Lieber
- Neutron-diffraction study of the Jahn-Teller transition in stoichiometric LaMnO_3 R3189
J. Rodríguez-Carvajal, M. Hennion, F. Moussa, A. H. Moudden, L. Pinsard, and A. Revcolevschi

Inhomogeneous, disordered, and partially ordered systems

- Temperature dependence of the photoluminescence in polymeric solid C_{60} R3193
U. D. Venkateswaran, D. Sanzi, A. M. Rao, P. C. Eklund, L. Marques, J.-L. Hodeau, and M. Núñez-Regueiro

Magnetism

- Vanishing of the negative-sign problem of quantum Monte Carlo simulations in one-dimensional frustrated spin systems R3197
Tota Nakamura
- Magnetization plateau in an $S=\frac{3}{2}$ antiferromagnetic Heisenberg chain with anisotropy R3201
Tôru Sakai and Minoru Takahashi
- Structural properties and charge-ordering transition in $\text{LaSr}_2\text{Mn}_2\text{O}_7$ R3205
J. Q. Li, Y. Matsui, T. Kimura, and Y. Tokura
- Composition-driven spin-reorientation transition in ferromagnetic alloy films R3209
A. Dittschar, M. Zharnikov, W. Kuch, M.-T. Lin, C. M. Schneider, and J. Kirschner
- Modification of the Landau-Lifshitz equation in the presence of a spin-polarized current in colossal- and giant-magnetoresistive materials R3213
Ya. B. Bazaliy, B. A. Jones, and Shou-Cheng Zhang
- Huge anisotropic magnetostriction in $\text{La}_{1-x}\text{Sr}_x\text{CoO}_{3-\delta}$ ($x \geq 0.3$): Field-induced orbital instability R3217
M. R. Ibarra, R. Mahendiran, C. Marquina, B. García-Landa, and J. Blasco

Superfluidity and superconductivity

- Self-generated flux in Josephson junctions with alternating critical current density R3221
R. G. Mints
- Superconducting d -wave junctions: The disappearance of the odd ac components R3225
Tomas Löfwander, Göran Johansson, Magnus Hurd, and Göran Wendin
- Observation of modulated magnetic long-range order in $\text{La}_{1.88}\text{Sr}_{0.12}\text{CuO}_4$ R3229
T. Suzuki, T. Goto, K. Chiba, T. Shinoda, T. Fukase, H. Kimura, K. Yamada, M. Ohashi, and Y. Yamaguchi
- Phase separation and weak ferromagnetism in lightly-oxygen-doped $\text{La}_2\text{CuO}_{4+x}$ single crystals in low magnetic fields R3233
A. A. Zakharov, A. A. Nikonov, and O. E. Parfionov
- Out-of-plane Hall effect in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$: Vortex-glass behavior and scaling of c -axis and Hall resistivities R3237
Yu. Eltsev and Ö. Rapp

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 57, NUMBER 6

1 FEBRUARY 1998-II

Charge localization and stripes in a two-dimensional three-band Peierls-Hubbard model	R3241
Z. G. Yu, J. Zang, J. T. Gammel, and A. R. Bishop	
Evidence of $d_{x^2-y^2}$ symmetry in the tunneling conductance density of states of $\text{Ti}_2\text{Ba}_2\text{CuO}_6$	R3245
L. Ozyuzer, Z. Yusof, J. F. Zasadzinski, R. Mogilevsky, D. G. Hinks, and K. E. Gray	
Nature of vortex lattice disordering at the onset of the peak effect	R3249
X. S. Ling, J. E. Berger, and D. E. Prober	

ARTICLES

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

Nonhydrostatic compression of elastically anisotropic polycrystals. I. Hydrostatic limits of 4:1 methanol-ethanol and paraffin oil	3253
J. W. Otto, J. K. Vassiliou, and G. Frommeyer	
Nonhydrostatic compression of elastically anisotropic polycrystals. II. Direct compression and plastic deformation	3264
J. W. Otto, J. K. Vassiliou, and G. Frommeyer	
Delocalization of the effective interaction for inner-shell ionization in crystals	3273
M. P. Oxley and L. J. Allen	
Mechanical deformation of atomic-scale metallic contacts: Structure and mechanisms	3283
Mads R. Sørensen, Mads Brandbyge, and Karsten W. Jacobsen	
Effects of basis set quality on the prediction of structures, energies, and properties of amorphous tetrahedral carbon	3295
Peter A. Schultz and E. B. Stechel	
Structural changes, clustering, and photoinduced phase segregation in $\text{Pr}_{0.7}\text{Ca}_{0.3}\text{MnO}_3$	3305
D. E. Cox, P. G. Radaelli, M. Marezio, and S-W. Cheong	
Unusual physical properties of $\text{KCu}_{7-x}\text{S}_4$ at diffusive one-dimensional ordering transitions	3315
Y.-K. Kuo, M. J. Skove, D. T. Verebelyi, H. Li, R. Mackay, S.-J. Hwu, M.-H. Whangbo, and J. W. Brill	
Experimental evidence for a continuous phase transition in a multidimensional ferroelectric	3326
P. Czarnecki, A. Katrusiak, I. Szafraniak, and J. Wąsicki	
Structural and electronic properties of neutral and charged silicalike clusters	3333
James R. Chelikowsky	
Undercooling-induced metastable A15 phase in the Re-W system from drop-tube processing	3340
S. Tournier, B. Vinet, A. Pasturel, I. Ansara, and P. J. Desré	
Experimental determination of the phase-transition critical exponents α and η by integrating methods	3345
C. Voges and H. Pfnür	
Absorption spectroscopy of R^{3+} ($R=\text{Pr}, \text{Nd}$) ion pairs in CsCdCl_3	3356
Samar Jana and Ranajit K. Mukherjee	

Inhomogeneous, disordered, and partially ordered systems

Determination of local structure in nanophase palladium by x-ray-absorption spectroscopy	3365
F. Boscherini, S. de Panfilis, and J. Weissmüller	
Nonlinear dc response in composites: A percolative study	3375
Abhijit Kar Gupta and Asok K. Sen	
Liquid-to-glass transition in glycerol: A ^1H rotating-frame spin-lattice relaxation study	3389
Luiz G. Mendes, M. Engelsberg, Inês C. L. de Souza, and Ricardo E. de Souza	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 57, NUMBER 6

1 FEBRUARY 1998-II

Time-resolved fluorescence line narrowing in Yb^{3+} -doped fluorindate glasses	3396
I. R. Martín, V. D. Rodríguez, U. R. Rodríguez-Mendoza, and V. Lavín	
Dynamics, dynamical systems, lattice effects, quantum solids, etc.	
Intrinsic resonant modes for a one-dimensional lattice with a soft optic mode	3402
S. A. Kiselev, R. Lai, and A. J. Sievers	
Ultrasonic properties of silica aerogels at low temperatures	3406
Ying Xie and J. R. Beamish	
Cyclotron resonance in uniaxial polar crystals with complex structure	3411
D. E. N. Brancus and G. Stan	
High-pressure Raman-scattering study of germanium diselenide	3418
Z. V. Popović, Z. Jakšić, Y. S. Raptis, and E. Anastassakis	
Path-integral effective-potential method applied to extended x-ray-absorption fine-structure cumulants	3423
Toshihiko Yokoyama	
Magnetism	
Modulational instability of nonlinear spin waves in easy-axis antiferromagnetic chains	3433
R. Lai and A. J. Sievers	
Magnetic susceptibility and phase diagram of $\text{CuGe}_{1-x}\text{Si}_x\text{O}_3$ single crystals	3444
B. Grenier, J.-P. Renard, P. Veillet, C. Paulsen, R. Calemczuk, G. Dhalenne, and A. Revcolevschi	
Magnetization plateau in the $S = \frac{1}{2}$ Heisenberg spin chain with next-nearest-neighbor and alternating nearest-neighbor interactions	3454
Keisuke Totsuka	
Elastic exchange scattering amplitude studied using magnetic EXAFS	3466
D. Ahlers and G. Schütz	
Calculation of the perpendicular giant magnetoresistance of $\text{Co/Cu}(001)$ two-dimensional lateral superlattices	3474
Murielle Villeret, J. Mathon, R. B. Muniz, and J. d'Albuquerque e Castro	
Magnetic phase transitions and the magnetothermal properties of gadolinium	3478
S. Yu. Dan'kov, A. M. Tishin, V. K. Pecharsky, and K. A. Gschneidner, Jr.	
k -dependent exchange splitting of empty bands in nickel	3491
F. Schedin, D. R. Warburton, G. Thornton, and M. A. Hoyland	
Local-mean-field numerical studies in $\text{Fe}_x\text{Zn}_{1-x}\text{F}_2$	3495
E. P. Raposo and M. D. Coutinho-Filho	
Effect of the transverse field on the bond-diluted mixed Ising spin system with single-ion anisotropy	3512
Shi-Lei Yan and Chuan-Zhang Yang	
Single-hole Green's functions in insulating copper oxides at nonzero temperature	3518
J. van den Brink and O. P. Sushkov	
Morphology and magnetic properties of submonolayer Gd films	3525
M. Gajdzik, T. Trappmann, C. Sürgers, and H. v. Löhneysen	
Structure and magnetic properties of $\text{Fe/V}(110)$ superlattices	3531
P. Isberg, P. Granberg, E. B. Svedberg, B. Hjörvarsson, R. Wäppling, and P. Nordblad	
Anomalous spin fluctuation in vanadium spinel LiV_2O_4 studied by ^7Li -NMR	3539
N. Fujiwara, H. Yasuoka, and Y. Ueda	
Analysis of nuclear-quadrupole-resonance spectrum of incommensurate phases: The case of bis(4-chlorophenyl) sulfone	3543
J. Schneider, C. Schürer, A. Wolfenson, and A. Brunetti	
Hybrid beat in nuclear forward scattering of synchrotron radiation	3552
Yu. V. Shvyd'ko, U. van Bürck, W. Potzel, P. Schindelmann, E. Gerdau, O. Leupold, J. Metge, H. D. Rüter, and G. V. Smirnov	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 57, NUMBER 6

1 FEBRUARY 1998-II

Three-loop renormalization-group analysis of a complex model with stable fixed point: Critical exponents up to ϵ^3 and ϵ^4	3562
A. I. Mudrov and K. B. Varnashev	
Superfluidity and superconductivity	
Thermally activated Hall creep of flux lines from a columnar defect	3577
D. A. Gorokhov and G. Blatter	
Quantum depinning of a pancake vortex from a columnar defect	3586
D. A. Gorokhov and G. Blatter	
Electrical transport in a superconducting niobium nitride ultrathin granular film: A disordered two-dimensional Josephson-junction array	3593
Mark W. Johnson and Alan M. Kadin	
Edge effects in a frustrated Josephson-junction array with modulated couplings	3602
E. Granato, J. M. Kosterlitz, and M. V. Simkin	
Effect of linear defects on the field distribution in thin superconductors	3609
Mahesh Chandran	
Pinning by an antidot lattice: The problem of the optimum antidot size	3615
V. V. Moshchalkov, M. Baert, V. V. Metlushko, E. Rosseel, M. J. Van Bael, K. Temst, Y. Bruynseraede, and R. Jonckheere	
Phase diagram of vortices in the quasi-two-dimensional organic superconductor α -(BEDT-TTF) ₂ NH ₄ Hg(SCN) ₄ : A system of pancake vortices with out-of-plane coupling dominated by the electromagnetic energy	3623
Hiromi Taniguchi, Yasuhiro Nakazawa, and Kazushi Kanoda	
Phenomenological model for organic superconductors	3635
Stavros Theodorakis	
Magnetic properties of UPt ₃ in the superconducting state	3640
Andreas Amann, Ana Celia Mota, M. Brian Maple, and Hilbert v. Löhneysen	
Quasiparticle tunneling spectra of the high- T_c mercury cuprates: Implications of the d -wave two-dimensional van Hove scenario	3650
J. Y. T. Wei, C. C. Tsuei, P. J. M. van Bentum, Q. Xiong, C. W. Chu, and M. K. Wu	
Vortex phase diagram of Bi ₂ Sr ₂ CaCu ₂ O _{8+δ} : c -axis superconducting correlation in the different vortex phases ...	3663
M. F. Goffman, J. A. Herbsommer, F. de la Cruz, T. W. Li, and P. H. Kes	
Electron spin resonance of Gd ³⁺ in the normal state of RNi ₂ B ₂ C ($R=Y, Lu$)	3668
P. G. Pagliuso, C. Rettori, S. B. Oseroff, P. C. Canfield, E. M. Baggio-Saitovitch, and D. Sanchez	
Unoccupied electronic structure of Sr ₂ CuO ₂ Cl ₂ and Ba ₂ Cu ₃ O ₄ Cl ₂ : Experiment and theory	3672
S. Haffner, R. Neudert, M. Kielwein, M. Knupfer, M. S. Golden, K. Ruck, G. Krabbes, J. Fink, H. Rosner, R. Hayn, H. Eisaki, S. Uchida, Z. Hu, M. Domke, and G. Kaindl	
Controlled modification of interfacial strain and twinning in YBa ₂ Cu ₃ O _{7-δ} films on vicinal SrTiO ₃ (001)	3679
J. Brötz, H. Fuess, T. Haage, and J. Zegenhagen	
Observation of granular superconductivity in polycrystalline Sm _{2-x} Ce _x CuO _{4-y}	3683
H. A. Blackstead, R. F. Jardim, P. Beeli, D. B. Pulling, and A. K. Heilman	
Cumulative Author Index	3690