

PHYSICAL REVIEW B

CONDENSED MATTER

THIRD SERIES, VOLUME 55, NUMBER 9

CONTENTS

1 MARCH 1997-I

BRIEF REPORTS

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

- Average Gibbs energy per lattice defect: A thermodynamic derivation 5531
P. T. Landsberg and S. G. Canagaratna
- Theoretical model of 180° domain-wall structures and their transformation in ferroelectric perovskites 5534
X. R. Huang, X. B. Hu, S. S. Jiang, and D. Feng
- High-pressure phase transitions of solid H₂S probed by Fourier-transform infrared spectroscopy 5538
H. Shimizu, T. Ushida, S. Sasaki, M. Sakashita, H. Yamawaki, and K. Aoki

Inhomogeneous, disordered, and partially ordered systems

- Mechanical alloying of immiscible elements: Ag-Fe contrasted with Cu-Fe 5542
E. Ma, J.-H. He, and P. J. Schilling
- Phonon-dressing effects on two-level systems in amorphous solids and their influence on the low-temperature specific heat 5546
A. J. García and J. Fernández
- dc conductivity of V₂O₅-containing zinc tellurite glasses 5550
R. Singh and J. S. Chakravarthi
- Quantum interference effects in (Ni_{0.5}Zr_{0.5})_{1-x}Al_x metallic glasses 5554
T. K. Nath and A. K. Majumdar
- Relaxation-time distribution function of deuterated dipole glass in the low-frequency region 5558
Bog-Gi Kim and Jong-Jean Kim

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

- Fractal approach to the exciton-phonon coupling and structure of *J* aggregates 5562
J. Moll, S. Daehne, A. Semjonow, and A. Lau
- Vibrational spectrum of C₆₀ in the *p*-tert-butylcalix[8]arene(1:1)C₆₀ complex 5566
B. Paci, G. Amoretti, G. Arduini, G. Ruani, S. Shinkai, T. Suzuki, F. Ugozzoli, and R. Caciuffo
- Phonon dispersion curves for transition metals within the embedded-atom and embedded-defect methods 5570
G. Simonelli, R. Pasianot, and E. J. Savino
- High-resolution temperature-dependent valence-band photoemission spectroscopy of gold: Nature of electron-phonon coupling 5574
T. Yokoya, A. Chainani, and T. Takahashi
- Thermal conductivity of solid methane 5578
A. Jeżowski, H. Misiorek, V. V. Sumarokov, and B. Ya. Gorodilov
- Influence of a confinement-type lattice anharmonicity on the nonradiative processes in solids 5581
M. Grinberg and W. Jaskólski

Magnetism

- Characterization of a temperature-sensitive magnetic fluid 5585
Trupti Upadhyay, R. V. Upadhyay, R. V. Mehta, V. K. Aswal, and P. S. Goyal
- Wilson ratio in nearly ferromagnetic systems 5589
Mucio A. Continentino

(Continued)

Investigation of the spontaneous resistive anisotropy in Cr-based alloys with Fe and Co	5592
P. A. Stampe and Gwyn Williams	
Spin-glass state and magnetic-field-induced phenomena in distorted $\text{Eu}_{0.58}\text{Sr}_{0.42}\text{MnO}_3$ perovskite	5596
A. Sundaresan, A. Maignan, and B. Raveau	
Bias dependence in spin-polarized tunneling	5600
S. T. Chui	
Phase diagram of the anisotropic XY model	5604
Yu-qiang Ma and W. Figueiredo	
Theoretical study of the spin dynamics in Fe-Ni Invar alloys	5608
J. M. Wesselinowa	
Nonextensivity and Tsallis statistics in magnetic systems	5611
Luiz C. Sampaio, Márcio P. de Albuquerque, and Fortunato S. de Menezes	
Spin-glass freezing in the $S=1$ antiferromagnetic Heisenberg chain $\text{NiC}_2\text{O}_4 \cdot 2[(2\text{-methylimidazole})_x(\text{H}_2\text{O})_{1-x}]$	5615
Masayuki Hagiwara, Naoyuki Narita, and Isao Yamada	
Quantum Lifshitz point: ϵ expansion and the spherical limit	5619
A. Dutta, B. K. Chakrabarti, and J. K. Bhattacharjee	
Quantum spherical description of an Ising spin glass in a transverse field	5623
T. K. Kopeć and R. Pirc	
Bosonization in the two-channel Kondo model	5627
A. J. Schofield	
Dynamic Ruderman-Kittel-Kasuya-Yosida indirect interaction	5631
G. M. Genkin	
Magnitude of the sp -derived surface-state contribution to the magnetic moment of Ni(111)	5634
N. Memmel	
Phase diagrams for diamagnetic phase transitions in two-dimensional conductors	5636
M. A. Itskovsky, T. Maniv, G. F. Kventsel, and I. D. Vagner	
Low-temperature field-dependent magnetization of $\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$	5640
V. N. Smolyaninova, J. J. Hamilton, R. L. Greene, Y. M. Mukovskii, S. G. Karabashev, and A. M. Balbashov	
Direct observation of antiferromagnetic phase transition in fcc Fe films	5643
Ch. Würsch, C. H. Back, L. Bürgi, U. Ramsperger, A. Vaterlaus, U. Maier, D. Pescia, P. Politi, M. G. Pini, and A. Rettori	
Superfluidity and superconductivity	
Possible equivalence of Feynman's backflow and spin-dependent correlations	5647
S. A. Vitiello, K. E. Schmidt, and S. Fantoni	
Density and spin-density excitations in normal-liquid ^3He	5651
B. Fåk and Henry R. Glyde	
Atomic beam study of a superconductor's magnetic vortex lattice	5655
Samuel Dapore-Schwartz, Nathan G. Woodard, and Gregory P. Lafyatis	
Flux-flow resistivity and vortex viscosity of high- T_c films near T_c	5659
J. I. Martín, M. Vélez, F. Guinea, and J. L. Vicent	
Enhancement of c -axis vortex correlation by twin boundaries and columnar defects in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$	5663
E. F. Righi, S. A. Grigera, D. López, G. Nieva, F. de la Cruz, L. Civalé, G. Pasquini, and P. Levy	
Role of electromagnetic coupling in the low-field phase diagram of $\text{Bi}_{2.15}\text{Sr}_{1.85}\text{CaCu}_2\text{O}_{8+\delta}$	5666
S. L. Lee, C. M. Aegerter, H. Keller, M. Willemin, B. Stäuble-Pümpin, E. M. Forgan, S. H. Lloyd, G. Blatter, R. Cubitt, T. W. Li, and P. Kes	
Analysis of optical conductivities in cuprates	5670
Hae-Young Kee and Jongbae Hong	

Raman spectroscopic evidence on molecular mercuric bromide in the two-dimensional lattice of $(\text{HgBr}_2)_{0.5}\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_y$	5674
Jin-Ho Choy, Seong-Ju Hwang, and Dong-Kuk Kim	

ARTICLES

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

X-ray study of two-phase coexistence in a C_{60} single crystal through the cubic-cubic phase transition at 260 K	5678
P. Wochner, X. Xiong, P. C. Chow, and S. C. Moss	
Carbon nitride compounds with 1:1 stoichiometry	5684
Michel Côté and Marvin L. Cohen	
Invariant-molecular-dynamics study of the diamond-to- β -Sn transition in Si under hydrostatic and uniaxial compressions	5689
In-Ho Lee, Ji-Wook Jeong, and K. J. Chang	
Pressure-induced phases in the spin-Peierls compound CuGeO_3	5694
A. Jayaraman, S. K. Sharma, S. Y. Wang, and S-W. Cheong	
Hydrogen in R_2Fe_{17} intermetallic compounds: Structural, thermodynamic, and magnetic properties	5700
S. Wirth, R. Skomski, and J. M. D. Coey	

Inhomogeneous, disordered, and partially ordered systems

First-principles molecular-dynamics simulation of liquid rubidium under high pressures	5708
Fuyuki Shimojo, Y. Zempo, Kozo Hoshino, and Mitsuo Watabe	
Stark-level one-phonon dephasing process of Nd^{3+} -doped silicate glass fiber studied with accumulated photon echoes	5712
Ryuzi Yano and Naoshi Uesugi	
Self-consistent LCAO-CPA method for disordered alloys	5717
Klaus Koepernik, B. Velický, Roland Hayn, and Helmut Eschrig	
Electrical, magneto-, and optical conductivity of quasicrystals in the Al-Re-Pd system	5730
A. D. Bianchi, F. Bommeli, M. A. Chernikov, U. Gubler, L. Degiorgi, and H. R. Ott	
Correlations in transmission of light through a disordered amplifying medium	5736
A. A. Burkov and A. Yu. Zyuzin	
Photoionization quantum yields of organic molecules in liquid argon and xenon	5742
Akira Hitachi, Hideo Ichinose, Jun Kikuchi, Tadayoshi Doke, Kimiaki Masuda, and Eido Shibamura	
Low-temperature thermal conductivity of glasses within the soft-potential model	5749
M. A. Ramos and U. Buchenau	

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

Generation of intrinsic vibrational gap modes in three-dimensional ionic crystals	5755
S. A. Kiselev and A. J. Sievers	
Breatherlike excitations in discrete lattices with noise and nonlinear damping	5759
Peter L. Christiansen, Yuri B. Gaididei, Magnus Johansson, and Kim Ø. Rasmussen	
Debye-Waller factor in solid ^4He crystals	5767
C. A. Burns and E. D. Isaacs	
<i>Ab initio</i> calculation of formation and migration volumes for vacancies in Li and Na	5772
U. Breier, V. Schott, and M. Fähnle	
Computer model for transient grating experiments and its application to analysis of LiTaO_3	5778
Heather M. Perry and Thomas P. Dougherty	

(Continued)

Polarization dependence of two-photon absorption and electronic Raman scattering intensities in crystals	5786
An-Dien Nguyen	
Subpicosecond study of carrier trapping dynamics in wide-band-gap crystals	5799
P. Martin, S. Guizard, Ph. Daguzan, G. Petite, P. D'Oliveira, P. Meynadier, and M. Perdrix	
Synchrotron Mössbauer source	5811
G. V. Smirnov, U. van Bürck, A. I. Chumakov, A. Q. R. Baron, and R. Rüffer	
Magnetism	
Critical properties of gapped spin- $\frac{1}{2}$ chains and ladders in a magnetic field	5816
R. Chitra and T. Giamarchi	
Competition between axial and cubic anisotropies in Heisenberg spin glasses	5827
Zbigniew Domański	
Dynamic correlations of antiferromagnetic spin- $\frac{1}{2}$ XXZ chains at arbitrary temperature from complete diagonalization	5833
Klaus Fabricius, Ute Löw, and Joachim Stolze	
Effects of external pressure on the 5 <i>f</i> -band metamagnetism in UCoAl	5847
A. V. Andreev, M. I. Bartashevich, T. Goto, K. Kamishima, L. Havela, and V. Sechovský	
Magnetic properties of UTSn compounds (<i>T</i> =Co, Rh, Ir, Ru) studied by ^{119}Sn Mössbauer spectroscopy	5851
R. Kruk, R. Kmieć, K. Łatka, K. Tomala, R. Troć, and V. H. Tran	
Evidence for resonant tunneling of magnetization in Mn ₁₂ acetate complex	5858
J. M. Hernandez, X. X. Zhang, F. Luis, J. Tejada, Jonathan R. Friedman, M. P. Sarachik, and R. Ziolo	
Exact ground-state properties of disordered Ising systems	5866
J. Esser, U. Nowak, and K. D. Usadel	
Low-field magnetoresistance in tetragonal La _{1-x} Ca _x MnO ₃ films	5873
J. O'Donnell, M. Onellion, M. S. Rzchowski, J. N. Eckstein, and I. Bozovic	
Preisach model for spin-glass remanences	5880
P. D. Mitchler, R. M. Roshko, E. Dan Dahlberg, and E. Wesseling	
Structural transformation and spin-reorientation transition in epitaxial Fe/Cu ₃ Au(100) ultrathin films	5886
M.-T. Lin, J. Shen, W. Kuch, H. Jenniches, M. Klaua, C. M. Schneider, and J. Kirschner	
Magnetic anisotropy in ultrathin epitaxial Fe/Ag(100) films with overlayers	5898
R. J. Hicken, S. J. Gray, A. Ercole, C. Daboo, D. J. Freeland, E. Gu, E. Ahmad, and J. A. C. Bland	
Quasiclassical approach to magnetotransport in magnetic inhomogeneous systems	5908
L. Sheng, D. Y. Xing, Z. D. Wang, and Jinming Dong	
Temperature and magnetic-field dependence of the lattice constant in the spin-Peierls cuprate CuGeO ₃ studied by capacitance dilatometry in fields up to 16 T	5914
T. Lorenz, U. Ammerahl, T. Auweiler, B. Büchner, A. Revcolevschi, and G. Dhalenne	
Error correction for a spin quantum computer	5929
Gennady P. Berman, David K. Campbell, and Vladimir I. Tsifrinovich	
Structure, crystal fields, magnetic interactions, and heavy-fermion behavior in (Ce _{1-x} La _x) ₃ Al	5937
Y. Y. Chen, Y. D. Yao, B. C. Hu, C. H. Jang, J. M. Lawrence, H. Huang, and W. H. Li	
<i>J</i> ₁ - <i>J</i> ₂ model revisited: Phenomenology of CuGeO ₃	5944
V. N. Muthukumar, Claudius Gros, Roser Valentí, M. Weiden, C. Geibel, F. Steglich, P. Lemmens, M. Fischer, and G. Güntherodt	
Modified effective-medium theory for magneto-optical spectra of magnetic materials	5953
Chun-Yeol You, Sung-Chul Shin, and Sang-Youl Kim	

Superfluidity and superconductivity

Impurity dynamics in boson quantum films	5959
B. E. Clements, E. Krotscheck, and M. Saarela	
Dispersion of a single hole in the t - J model	5983
T. K. Lee and C. T. Shih	
Kohn-Luttinger effect in nested fermion liquids	5988
Hyok-Jon Kwon	
Magnetic susceptibility in the Millis-Monien-Pines model	5998
I. Tifrea, M. Crisan, and I. Grosu	
Andreev-level tunneling in a ballistic double superconductor-normal-metal-superconductor junction	6004
Victor C. Y. Chang and C. S. Chu	
Boundary conditions for quasiclassical equations in the theory of superconductivity	6015
C. J. Lambert, R. Raimondi, V. Sweeney, and A. F. Volkov	
Quantum structural approach to high- T_c superconductivity theory: Herzberg-Teller, Renner-Teller, Jahn-Teller effects and intervalent geminal charge transfer	6022
Ying-Nan Chiu	
Extended bound states and resonances of two fermions on a periodic lattice	6035
A. S. Blaer, H. C. Ren, and O. Tchernyshyov	
Kramer-Pesch effect and damping of the vortex motion in the cuprate superconductors	6044
S. G. Doettinger, R. P. Huebener, and S. Kittelberger	
Optical study of c -axis charge dynamics in $\text{YBa}_2\text{Cu}_3\text{O}_y$: Carrier self-confinement in the normal and the superconducting states	6051
S. Tajima, J. Schützmann, S. Miyamoto, I. Terasaki, Y. Sato, and R. Hauff	
Photoexcited carrier relaxation in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ by picosecond resonant Raman spectroscopy	6061
T. Mertelj, J. Demsar, B. Podobnik, I. Poberaj, and D. Mihailovic	
Fluctuation-induced pseudogap in the infrared optical conductivity of high-temperature superconductors	6070
Francesca Federici and Andrei A. Varlamov	
Dynamic conductivity near T_c of $\text{YBa}_2\text{Cu}_3\text{O}_7$ films: Vortex-glass-like criticality in the absence of externally induced vortices	6077
G. Nakielski, D. Görlitz, Chr. Stodte, M. Welters, A. Krämer, and J. Kötzler	

ERRATA

Erratum: Scaling above the upper critical dimension in Ising models [Phys. Rev. B 54 , R3698 (1996)]	6082
Giorgio Parisi and Juan J. Ruiz-Lorenzo	

Cumulative Author Index	6083
--	------