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
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 61, NUMBER 9 *CONTENTS* 1 MARCH 2000-I

BRIEF REPORTS

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

High-pressure phase above 40 GPa in ferroelectric $KNbO_3$ 5819
Y. Kobayashi, S. Endo, T. Ashida, L. C. Ming, and T. Kikegawa

Phase transitions of a simple hexagonal $In_{0.2}Sn_{0.8}$ alloy under high pressure 5823
V. F. Degtyareva, O. Degtyareva, W. B. Holzapfel, and K. Takemura

Anharmonicity-induced glasslike transition in a plastic crystal without α relaxation 5827
G. P. Johari, M. F. Collins, and R. Feyerherm

XPS measurements for detection of collapsed-core atoms 5831
V. Sh. Machavariani and A. Voronel

Imaging the collapse of macrodomains from coupling defect-dipole relaxation 5835
A. Q. Jiang, Z. H. Chen, W. H. Song, and L. D. Zhang

Inhomogeneous, disordered, and partially ordered systems

Absence of self-averaging in the complex admittance for transport through random media 5839
Mitsuhiro Kawasaki, Takashi Odagaki, and Klaus W. Kehr

Theoretical aspects of thermal diffuse scattering from quasicrystals 5843
Renhui Wang, Chengzheng Hu, Jianlin Lei, and Di-hua Ding

Transport properties and point-contact spectra of Ni_xNb_{1-x} metallic glasses 5846
A. Halbritter, O. Yu. Kolesnychenko, G. Mihály, O. I. Shklyarevskii, and H. van Kempen

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

Level broadening and quantum interference effects in insulators 5850
Ernesto Medina and Horacio Pastawski

Magnetism

Breakdown of the Kondo effect in critical antiferromagnets 5854
Davide Controzzi

Crossover from anisotropic to isotropic transport in $R_{2/3}A_{1/3}MnO_3$ perovskites determined by crystal symmetry . . . 5857
J. Mira, A. Fondado, L. E. Hueso, J. Rivas, F. Rivadulla, and M. A. López Quintela

Resonant tunneling via spin-polarized barrier states in a magnetic tunnel junction 5860
R. Jansen and J. C. Lodder

Dynamic localization in spin systems 5864
S. Raghavan, V. M. Kenkre, and A. R. Bishop

Correlated spin and orbital dimerizations in spin-orbital models 5868
Swapan K. Pati and Rajiv R. P. Singh

Copyright 2000 by The American Physical Society

0163-1829(20000301)61:9;1-1

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 61, NUMBER 9** **1 MARCH 2000-I**

Neutron-diffraction study of the metamagnetic phases in $HoNi_2B_2C$ 5872
A. J. Campbell, D. McK. Paul, and G. J. McIntyre

Direct observation of the stabilization of ferromagnetic order by magnetic anisotropy 5876
S. Hope, B.-Ch. Choi, P. J. Bode, and J. A. C. Bland

Magnetic properties of $Fe_{0.9-q}Mn_{0.1}Al_q$ disordered alloys: Theory 5880
J. Restrepo and G. A. Pérez Alcázar

Bias dependence of magnetic tunnel junctions 5884
M. S. Rzchowski and X. W. Wu

EPR in $La_{1-x}Ca_xMnO_3$: Relaxation and bottleneck 5888
A. Shengelaya, Guo-meng Zhao, H. Keller, K. A. Müller, and B. I. Kochelaev

Muon spin echo in zero external magnetic field 5891
S. A. Moiseev, R. G. Mustafin, V. G. Nikiforov, and N. M. Suleimanov

Magneto-optical studies of superlattice dot arrays 5895
P. Vavassori, V. Metlushko, M. Grimsditch, B. Ilic, P. Neuzil, and R. Kumar

Superfluidity and superconductivity

λ transition in confined ^{4}He: Ratio of surface specific heats above and below the bulk transition point 5899
Saugata Bhattacharyya and J. K. Bhattacharjee

Theory of $\pi/2$ superconducting Josephson junctions 5902
A. Zyuzin and B. Spivak

Determination of the critical exponents for the λ transition of ^{4}He by high-temperature expansion 5905
Massimo Campostrini, Andrea Pelissetto, Paolo Rossi, and Ettore Vicari

Superconductor-insulator transition in granular Pb films near a superconducting ground plane 5909
S. R. Khan, E. M. Pedersen, B. Kain, A. J. Jordan, and R. P. Barber, Jr.

Order-parameter symmetries in high-temperature superconductors 5913
R. A. Klemm, C. T. Rieck, and K. Scharnberg

Bose glass scaling for superconducting vortex arrays revisited 5917
David R. Nelson and V. M. Vinokur

Photonic band gap in a superconductor-dielectric superlattice 5920
C. H. Raymond Ooi, T. C. Au Yeung, C. H. Kam, and T. K. Lim

Field-induced segregation of ferromagnetic nanodomains in $Pr_{0.5}Sr_{0.5}MnO_3$ detected by ^{55}Mn NMR 5924
G. Allodi, R. De Renzi, M. Solzi, K. Kamenev, G. Balakrishnan, and M. W. Pieper

Linear *c*-axis magnetoresistance in underdoped $YBa_2Cu_3O_{6+\delta}$ 5928
A. A. Abrikosov

Interlayer conductivity in the superconductor $Tl_2Ba_2CuO_{6+\delta}$: Energetics and energy scales 5930
A. S. Katz, S. I. Woods, E. J. Singley, T. W. Li, M. Xu, D. G. Hinks, R. C. Dynes, and D. N. Basov

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 61, NUMBER 9** **1 MARCH 2000-I**

ARTICLES

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

Pressure-induced crystallization of vitreous $ZnCl_2$ 5934
Cynthia H. Polsky, Luz Maria Martinez, Kurt Leinenweber, Mary A. VerHelst, C. Austen Angell, and George H. Wolf

Structural phase transition in carbon nanotube bundles under pressure 5939
M. J. Peters, L. E. McNeil, Jian Ping Lu, and Daniel Kahn

Atomic defects in hexagonal tungsten carbide studied by positron annihilation 5945
A. A. Rempel, R. Würschum, and H.-E. Schaefer

Theory of time-dependent plastic deformation in disordered solids 5949
B. N. J. Persson

Rigid intertetrahedron angular interaction of nonmolecular carbon dioxide solids 5967
Jianjun Dong, John K. Tomfohr, and Otto F. Sankey

First-principles computation of the vibrational entropy of ordered and disordered Pd_3V 5972
A. van de Walle and G. Ceder

Monte Carlo simulation of positron-stimulated secondary electron emission from solids 5979
Maurizio Dapor, Antonio Miotello, and Davide Zari

Thermal behavior of $c(2\times2)$ layers in the Pb/Cu(110) system and the influence of surface defects on the order-disorder transition 5987
M. Michailov, C. de Beauvais, D. Rouxel, and B. Mutaftschiev

Inhomogeneous, disordered, and partially ordered systems

Particle dynamics in the random barrier model: Monte Carlo simulations at low temperatures 5993
B. Roling

Atomic concentration waves in Pt-V and Pd-V alloys 5998
Akiko Murakami and Yorihiko Tsunoda

Constitutional and thermal point defects in $B2$ NiAl 6003
P. A. Korzhavyi, A. V. Ruban, A. Y. Lozovoi, Yu. Kh. Vekilov, I. A. Abrikosov, and B. Johansson

Decay kinetics of nonequilibrium Al-Si solid solutions 6019
N. E. Sluchanko, V. V. Glushkov, S. V. Demishev, M. V. Kondrin, T. V. Ischenko, W. Gust, V. V. Brazhkin, B. B. Straumal, Y. Bruynseraede, and V. V. Moshchalkov

Energy-level statistics at the metal-insulator transition in anisotropic systems 6028
Frank Milde, Rudolf A. Römer, and Michael Schreiber

Heat conduction in $ZnS:SiO_2$ composite films 6036
E.-K. Kim, S.-I. Kwun, S.-M. Lee, H. Seo, and J.-G. Yoon

Electron-phonon interaction in disordered conductors: Static and vibrating scattering potentials 6041
A. Sergeev and V. Mitin

Anomalous electronic conductance in quasicrystals 6048
Stephan Roche and Konstantinos Moulopoulos

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

Hopping transport in the presence of site-energy disorder: Temperature and concentration scaling of conductivity spectra 6057
Markus Porto, Philipp Maass, Martin Meyer, Armin Bunde, and Wolfgang Dieterich

Path-integral approximation on the stability of large bipolarons in quasi-one-dimensional confinement 6063
R. T. Senger and A. Erçelebi

Singlet-bipolaron formation among degenerate electronic orbitals: Softening bipolarons 6069
David Emin

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 61, NUMBER 9** **1 MARCH 2000-I**

Femtosecond transient-absorption dynamics of colloidal gold nanorods: Shape independence of the electron-phonon relaxation time 6086
S. Link, C. Burda, M. B. Mohamed, B. Nikoobakht, and M. A. El-Sayed
Phonons in ternary group-III nitride alloys 6091
H. Grille, Ch. Schnittler, and F. Bechstedt
Lattice effects on the transport properties of $(R,\mathrm{Sr})_3\mathrm{Mn}_2\mathrm{O}_7$ ($R=$La, Eu, and Pr) 6106
Sandip Chatterjee, P. H. Chou, C. F. Chang, I. P. Hong, and H. D. Yang

Magnetism

Monte Carlo analysis of the phase transitions in the two-dimensional J_1-J_2 XY model 6114
D. Loison and P. Simon
Magnetoelastic coupling and spin excitations in the spin-gap system $(\mathrm{VO})_2\mathrm{P}_2\mathrm{O}_7$: A Raman scattering study 6126
M. Grove, P. Lemmens, G. Güntherodt, B. C. Sales, F. Büllesfeld, and W. Assmus
Quantum phase transitions for the Haldane system in higher dimensions: A mixed-spin cluster expansion approach 6133
Akihisa Koga and Norio Kawakami
Symmetry and energy spectrum of high-nuclearity spin clusters 6138
O. Waldmann
Noncolinear spin polarization from frustrated antiferromagnetism: A possible scenario for molecular oxygen at high pressure 6145
R. Gebauer, S. Serra, G. L. Chiarotti, S. Scandolo, S. Baroni, and E. Tosatti
Low-temperature magnetic properties of Fe nanograins in an amorphous Fe-Zr-B matrix 6150
J. S. Garitaonandia, P. Gorria, L. Fernández Barquín, and J. M. Barandiarán
Magnetic properties of pure and diamagnetically doped jarosites: Model *kagomé* antiferromagnets with variable coverage of the magnetic lattice 6156
A. S. Wills, A. Harrison, C. Ritter, and R. I. Smith
Impurity correlations in dilute Kondo alloys 6170
Victor Barzykin and Ian Affleck
Neutron-scattering study of the magnetic structure of $\mathrm{DyFe}_4\mathrm{Al}_8$ and $\mathrm{HoFe}_4\mathrm{Al}_8$ 6176
J. A. Paixão, M. Ramos Silva, S. Aa. Sørensen, B. Lebech, G. H. Lander, P. J. Brown, S. Langridge, E. Talik, and A. P. Gonçalves
Dynamic magnetic response in intermediate-valence CeNi 6189
E. S. Clementyev, J.-M. Mignot, P. A. Alekseev, V. N. Lazukov, E. V. Nefeodova, I. P. Sadikov, M. Braden, R. Kahn, and G. Lapertot
Effect of composition and short-range order on the magnetic moments of Fe in $\mathrm{Fe}_{1-x}\mathrm{V}_x$ alloys 6196
J. C. Krause, J. Schaf, M. I. da Costa, Jr., and C. Paduani
Longitudinal dynamic susceptibility and relaxation time of superparamagnetic particles with cubic anisotropy: Effect of a biasing magnetic field 6205
Yu. P. Kalmykov
ESR study in lightly doped $\mathrm{La}_{1-x}\mathrm{Sr}_x\mathrm{MnO}_3$ 6213
V. A. Ivanshin, J. Deisenhofer, H.-A. Krug von Nidda, A. Loidl, A. A. Mukhin, A. M. Balbashov, and M. V. Eremin
Mössbauer spectroscopy investigation of the *Immm* phase nickelates $\mathrm{Gd}_2\mathrm{BaNiO}_5$ and $\mathrm{Tm}_2\mathrm{BaNiO}_5$ 6220
G. A. Stewart, S. J. Harker, M. Strecker, and G. Wortmann
Triangular Ising antiferromagnet in a staggered field 6227
Abhishek Dhar, Pinaki Chaudhuri, and Chandan Dasgupta
Comparative study of the structure and magnetic properties of Co-P and Fe-P amorphous alloys 6238
A. García-Arribas, M. L. Fdez-Gubieda, and J. M. Barandiarán

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 61, NUMBER 9** **1 MARCH 2000-I**

Fully relativistic noncollinear magnetism in spin-density-functional theory: Application to USb by means of the fully relativistic spin-polarized LAPW method 6246
Hiroshi Yamagami
Quantum melting of magnetic long-range order near orbital degeneracy: Classical phases and Gaussian fluctuations 6257
Andrzej M. Oleś, Louis Felix Feiner, and Jan Zaanen
Exact relations between magnetoresistivity tensor components of conducting composites with a columnar microstructure 6288
Yakov M. Strelniker and David J. Bergman

Superfluidity and superconductivity

SO(5) theory of insulating vortex cores in high-T_c materials 6298
Brian Møller Andersen, Henrik Bruus, and Per Hedegård
Observation of superconductivity in $Eu_{1.5}Ce_{0.5}Sr_2Cu_2TiO_{10}$ 6303
Howard A. Blackstead, John D. Dow, Israel Felner, and David B. Pulling
Dual vortex theory of strongly interacting electrons: A non-Fermi liquid with a twist 6307
Leon Balents, Matthew P. A. Fisher, and Chetan Nayak
Phase separation and stripe formation in the two-dimensional *t-J* model: A comparison of numerical results 6320
Steven R. White and D. J. Scalapino
Growth and anisotropic resistivity of $PrBa_2Cu_4O_8$ and $Pr_2Ba_4Cu_7O_{15-y}$ single crystals: A direct probe of metallic Cu-O double chains 6327
S. Horii, U. Mizutani, H. Ikuta, Y. Yamada, J. H. Ye, A. Matsushita, N. E. Hussey, H. Takagi, and I. Hirabayashi
Transport properties of separated pairs of CuO_2 planes in $(Pb_2Cu)Sr_2Dy_xCe_{n-x-\delta}Cu_2O_{2n+6}$ $(n=3,5)$ epitaxial films 6334
Sumio Ikegawa and Yuichi Motoi
Effects of doping on thermally excited quasiparticles in the high-T_c superconducting state 6343
T. Xiang and C. Panagopoulos
Microwave surface impedance of $YBa_2Cu_3O_{6.99}$: Comparison of theory and experiment 6346
Herman J. Fink
Upper critical field in disordered two-dimensional superconductors 6352
Robert A. Smith, Beccy S. Handy, and Vinay Ambegaokar
Critical currents and the Ambegaokar-Baratoff to Ginsburg-Landau crossover in granular superconductors 6360
J. L. Cardoso and P. Pereyra
^{13}C NMR observation of extreme type-II superconductivity in K_3C_{60}: A method of estimating penetration depth .. 6366
Susumu Sasaki and C. W. Chu
Vortex lines in films: Fields and interactions 6370
Gilson Carneiro and Ernst Helmut Brandt
Muon spin relaxation and rotation measurements on single crystals of the heavy-fermion superconductor UBe_{13} ... 6377
P. Dalmas de Réotier, A. Yaouanc, R. H. Heffner, J. L. Smith, P. C. M. Gubbens, and C. T. Kaiser
Isotope effect in the presence of a pseudogap 6381
T. Dahm
Anisotropic in-plane properties of (103)/(013) oriented $YBa_2Cu_3O_{7-\delta}$ thin films grown on exact and miscut (110) $SrTiO_3$ substrates 6387
R. P. Campion, P. J. King, K. A. Benedict, R. M. Bowley, P. S. Czerwinka, S. Misat, and S. M. Morley
Crystal and magnetic structure of ferromagnetic superconducting $RuSr_2GdCu_2O_8$ 6401
O. Chmaissem, J. D. Jorgensen, H. Shaked, P. Dollar, and J. L. Tallon
$(Cu_{0.5}C_{0.5})Ba_2Ca_{m-1}Cu_mO_x$ for $m=3$ and 4 under hydrostatic pressure 6408
Y. Cao, Z. L. Du, Y. Y. Xue, and C. W. Chu

(Continued)

PHYSICAL REVIEW B **THIRD SERIES, VOLUME 61, NUMBER 9** **1 MARCH 2000-I**

Magnetic flux shielding in superconducting strip arrays 6413
P. Fabbricatore, S. Farinon, S. Innocenti, and F. Gömöry
Electromagnetic properties and He^+ irradiation effects on $YBa_2Cu_3O_{7-x}$ grain-boundary Josephson junctions 6422
M. A. Navacerrada, M. L. Lucía, and F. Sánchez-Quesada

ERRATA

Erratum: Third sound of helium on a hydrogen substrate [Phys. Rev. B **44**, 12 453 (1991)] 6428
John G. Brisson, John C. Mester, and Isaac F. Silvera
Erratum: Quantum size effect in the work function of jellium slabs confined by a finite well of thickness-dependent depth [Phys. Rev. B **60**, 9202 (1999)] 6428
Kazimierz F. Wojciechowski

Cumulative Author Index 6429