PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

Doping-dependent specific heat study of the superconducting gap in $Ba(Fe_{1-x}Co_x)_2As_2$ *(5 pages)* 184518
K. Gofryk, A. S. Sefat, M. A. McGuire, B. C. Sales, D. Mandrus, J. D. Thompson, E. D. Bauer, and F. Ronning

Evolution from non-Fermi- to Fermi-liquid transport via isovalent doping in $BaFe_2(As_{1-x}P_x)_2$ superconductors *(5 pages)* 184519
S. Kasahara, T. Shibauchi, K. Hashimoto, K. Ikada, S. Tonegawa, R. Okazaki, H. Shishido, H. Ikeda, H. Takeya, K. Hirata, T. Terashima, and Y. Matsuda

Depinning and dynamics of ac driven vortex lattices in random media *(6 pages)* 184520
D. Pérez Daroca, G. S. Lozano, G. Pasquini, and V. Bekeris

Strong influence of nonlocal nonequilibrium effects on the dynamics of the order parameter in a phase-slip center: Ring studies *(7 pages)* 184521
D. Y. Vodolazov and F. M. Peeters

Effects of excess Fe on upper critical field and magnetotransport in $Fe_{1+y}(Te_{1-x}S_x)_z$ *(6 pages)* 184522
Hechang Lei (雷和畅), Rongwei Hu (胡荣伟), E. S. Choi, J. B. Warren, and C. Petrovic

Critical tunneling currents in quantum Hall superfluids: Pseudospin-transfer torque theory *(11 pages)* 184523
Jung-Jung Su and Allan H. MacDonald

Charge imbalance in superconductors in the low-temperature limit *(9 pages)* 184524
F. Hübler, J. Camirand Lemyre, D. Beckmann, and H. v. Löhneysen

Interplay between superconductivity and ferromagnetism on a topological insulator *(11 pages)* 184525
Jacob Linder, Yukio Tanaka, Takehito Yokoyama, Asle Sudbø, and Naoto Nagaosa

Low-energy dynamics of spinor condensates *(11 pages)* 184526
Austen Lamacraft

Crossover region between nodal and antinodal states at the Fermi level of optimally doped and overdoped $Bi_2Sr_{1.6}Nd_{0.4}CuO_{6+\delta}$ *(5 pages)* 184527
D. R. Garcia, J. Graf, C. Jozwiak, C. G. Hwang, H. Eisaki, and A. Lanzara

Strong pairbreaking in anisotropic superconductors *(7 pages)* 184528
V. G. Kogan

Far-infrared transmission of a superconducting NbN film *(5 pages)* 184529
M. Šindler, R. Tesař, J. Koláček, L. Skrbek, and Z. Šimša

Vortex dynamics at high ac amplitudes of trifluoracetate route grown $YBa_2Cu_3O_{7-x}$-$BaZrO_3$ nanocomposites *(8 pages)* 184530
E. Bartolomé, A. Palau, A. Llordés, T. Puig, and X. Obradors

ERRATA

Publisher's Note: Electronic correlations and unusual superconducting response in the optical properties of the iron chalcogenide $FeTe_{0.55}Se_{0.45}$ [Phys. Rev. B **81**, 180508 (2010)] *(1 page)* . . . . . 189901(E)
C. C. Homes, A. Akrap, J. S. Wen, Z. J. Xu, Z. W. Lin, Q. Li, and G. D. Gu

Erratum: Field-induced transition from chiral spin-triplet to mixed-parity Fulde-Ferrell-Larkin-Ovchinnikov superconductivity [Phys. Rev. B **81**, 064513 (2010)] *(1 page)* . . . . . 189902(E)
Alfonso Romano, Mario Cuoco, Canio Noce, Paola Gentile, and Gaetano Annunziata

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

Isoelectronic Ru substitution at the iron site in $SmFe_{1-x}Ru_xAsO_{0.85}F_{0.15}$ and its effects on structural, superconducting, and normal-state properties *(12 pages)* 184504
M. Tropeano, M. R. Cimberle, C. Ferdeghini, G. Lamura, A. Martinelli, A. Palenzona, I. Pallecchi, A. Sala, I. Sheikin, F. Bernardini, M. Monni, S. Massidda, and M. Putti

Fiske steps and Abrikosov vortices in Josephson tunnel junctions *(8 pages)* 184505
M. P. Lisitskiy and M. V. Fistul

Topological effects of the superconducting vortex state in a $TaSe_3$ ring crystal: Observation of magnetic torque oscillations *(4 pages)* 184506
Genki Kumagai, Toru Matsuura, Koichi Ichimura, Kazuhiko Yamaya, Katsuhiko Inagaki, and Satoshi Tanda

Amorphous solid helium in porous media *(8 pages)* 184507
Jacques Bossy, Thomas Hansen, and Henry R. Glyde

Uniaxial-strain mechanical detwinning of $CaFe_2As_2$ and $BaFe_2As_2$ crystals: Optical and transport study *(10 pages)* 184508
M. A. Tanatar, E. C. Blomberg, A. Kreyssig, M. G. Kim, N. Ni, A. Thaler, S. L. Bud'ko, P. C. Canfield, A. I. Goldman, I. I. Mazin, and R. Prozorov

Signatures of pressure-induced superconductivity in insulating $Bi_{1.98}Sr_{2.06}Y_{0.68}CaCu_2O_{8+\delta}$ *(5 pages)* 184509
T. Cuk, D. A. Zocco, H. Eisaki, V. Struzhkin, F. M. Grosche, M. B. Maple, and Z.-X. Shen

Density of phonon states in superconducting FeSe as a function of temperature and pressure *(7 pages)* 184510
V. Ksenofontov, G. Wortmann, A. I. Chumakov, T. Gasi, S. Medvedev, T. M. McQueen, R. J. Cava, and C. Felser

Evidence for dominant Pauli paramagnetic effect in the upper critical field of single-crystalline $FeTe_{0.6}Se_{0.4}$ *(5 pages)* 184511
Seunghyun Khim, Jae Wook Kim, Eun Sang Choi, Yunkyu Bang, Minoru Nohara, Hidenori Takagi, and Kee Hoon Kim

Nodes in the gap function of LaFePO, the gap function of the Fe(Se,Te) systems, and the STM signature of the $s_{\pm}$ pairing *(7 pages)* 184512
Fa Wang, Hui Zhai, and Dung-Hai Lee

Stripes of increased diamagnetic susceptibility in underdoped superconducting $Ba(Fe_{1-x}Co_x)_2As_2$ single crystals: Evidence for an enhanced superfluid density at twin boundaries *(5 pages)* 184513
B. Kalisky, J. R. Kirtley, J. G. Analytis, Jiun-Haw Chu, A. Vailionis, I. R. Fisher, and K. A. Moler

Meissner response of a bulk superconductor with an embedded sheet of reduced penetration depth *(6 pages)* 184514
John R. Kirtley, Beena Kalisky, Lan Luan, and Kathryn A. Moler

Emergence of non-Fermi-liquid behavior due to Fermi surface reconstruction in the underdoped cuprate superconductors *(11 pages)* 184515
Tanmoy Das, R. S. Markiewicz, and A. Bansil

Statistics of voltage fluctuations in resistively shunted Josephson junctions *(9 pages)* 184516
D. S. Golubev, M. Marthaler, Y. Utsumi, and Gerd Schön

Thermal suppression of surface barrier in ultrasmall superconducting structures *(9 pages)* 184517
W. V. Pogosov

(Continued)

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

Proposal for quantum spin tomography in ferromagnet-normal conductors *(5 pages)* 184422
P. Samuelsson and Arne Brataas

First-principles investigation of magnetism and electronic structures of substitutional 3*d* transition-metal impurities in bcc Fe *(11 pages)* 184423
Gul Rahman, In Gee Kim, H. K. D. H. Bhadeshia, and Arthur J. Freeman

Ab initio converse NMR approach for pseudopotentials *(10 pages)* 184424
D. Ceresoli, N. Marzari, M. G. Lopez, and T. Thonhauser

Nearest-neighbor Mn antiferromagnetic exchange in $Ga_{1-x}Mn_xN$ *(6 pages)* 184425
S. Granville, B. J. Ruck, F. Budde, H. J. Trodahl, and G. V. M. Williams

Structural anomalies and the orbital ground state in $FeCr_2S_4$ *(7 pages)* 184426
V. Tsurkan, O. Zaharko, F. Schrettle, Ch. Kant, J. Deisenhofer, H.-A. Krug von Nidda, V. Felea, P. Lemmens, J. R. Groza, D. V. Quach, F. Gozzo, and A. Loidl

Quantum phase transition, $O(3)$ universality class, and phase diagram of the spin-$\frac{1}{2}$ Heisenberg antiferromagnet on a distorted honeycomb lattice: A tensor renormalization-group study *(6 pages)* 184427
Wei Li, Shou-Shu Gong, Yang Zhao, and Gang Su

Magnetic ordering and transitions of EuSe studied by x-ray diffraction *(6 pages)* 184428
B. Díaz, E. Granado, E. Abramof, L. Torres, R. T. Lechner, G. Springholz, and G. Bauer

Suppression of the Shastry-Sutherland phase in Ce_2Pd_2Sn at a field-induced critical point *(5 pages)* 184429
J. G. Sereni, M. Gómez Berisso, G. Schmerber, and J. P. Kappler

Characterization and modeling of the demagnetization processes in exchange-coupled $SmCo_5/Fe/SmCo_5$ trilayers *(11 pages)* 184430
R. Pellicelli, M. Solzi, V. Neu, K. Häfner, C. Pernechele, and M. Ghidini

Measurement of Gilbert damping parameters in nanoscale CPP-GMR spin valves *(11 pages)* 184431
Neil Smith, Matthew J. Carey, and Jeffrey R. Childress

Effect of substrate strain on calculated magnetic properties and magnetic anisotropy energy of CoO *(10 pages)* 184432
A. Boussendel, N. Baadji, A. Haroun, H. Dreyssé, and M. Alouani

Electron spin resonance in three spin-$\frac{1}{2}$ dimer systems: $VO(HPO_4)\cdot 0.5H_2O$, $KZn(H_2O)(VO)_2(PO_4)_2(H_2PO_4)$, and CsV_2O_5 *(7 pages)* 184433
I. S. Camara, R. Gautier, E. Le Fur, J.-C. Trombe, J. Galy, A. M. Ghorayeb, and A. Stepanov

Anomalous butterfly-shaped magnetoresistance loops in the alloy Tb_4LuSi_3 *(5 pages)* 184434
K. Mukherjee, Sitikantha D. Das, Niharika Mohapatra, Kartik K. Iyer, and E. V. Sampathkumaran

Superfluidity and superconductivity

Dynamics of entanglement via propagating microwave photons *(6 pages)* 184501
C. Sabín, J. J. García-Ripoll, E. Solano, and J. León

Superconductivity on the surface of topological insulators and in two-dimensional noncentrosymmetric materials *(23 pages)* 184502
Luiz Santos, Titus Neupert, Claudio Chamon, and Christopher Mudry

Vortex dynamics in superconducting channels with periodic constrictions *(5 pages)* 184503
K. Yu, M. B. S. Hesselberth, P. H. Kes, and B. L. T. Plourde

(Continued)

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

Dominance of magnetoelastic coupling in multiferroic hexagonal $YMnO_3$ *(6 pages)* 184406
A. K. Singh, S. Patnaik, S. D. Kaushik, and V. Siruguri

Sublattice magnetism in σ-phase $Fe_{100-x}V_x$ (x=34.4, 39.9, and 47.9) studied via zero-field ^{51}V NMR *(5 pages)* 184407
Stanislaw M. Dubiel, José Roberto Tozoni, Jakub Cieślak, Daniel Cesar Braz, Edson Luiz Gea Vidoto, and Tito José Bonagamba

Magnetic and magnetoelectric study of the pyroxene $NaCrSi_2O_6$ *(8 pages)* 184408
Gwilherm Nénert, Ingyu Kim, Masahiko Isobe, Clemens Ritter, Alexander N. Vasiliev, Kee Hoon Kim, and Yutaka Ueda

Nematic, vector-multipole, and plateau-liquid states in the classical $O(3)$ pyrochlore antiferromagnet with biquadratic interactions in applied magnetic field *(24 pages)* 184409
Nic Shannon, Karlo Penc, and Yukitoshi Motome

Spin crossover in the $CsFe^{II}[Cr^{III}(CN)_6]$ Prussian blue analog: Phonons and thermodynamics from hybrid functionals *(13 pages)* 184410
Derek S. Middlemiss, Damiano Portinari, Clare P. Grey, Carole A. Morrison, and Chick C. Wilson

Time-domain study of frequency-power correlation in spin-torque oscillators *(6 pages)* 184411
G. Finocchio, G. Siracusano, V. Tiberkevich, I. N. Krivorotov, L. Torres, and B. Azzerboni

Structural relaxation effects in nanomagnetism *(8 pages)* 184412
P. Weinberger

Magnetic vortex as a ground state for micron-scale antiferromagnetic samples *(8 pages)* 184413
E. G. Galkina, A. Yu. Galkin, B. A. Ivanov, and Franco Nori

Magnetostructural properties of $Ho_5(Si_{0.8}Ge_{0.2})_4$ *(11 pages)* 184414
Niraj K. Singh, D. Paudyal, Ya. Mudryk, V. K. Pecharsky, and K. A. Gschneidner, Jr.

Magnetic structure, magnetization, and magnetotransport properties of $(Ba,Sr)M_{2\pm x}T_{4\mp x}O_{11}$ (M=Fe,Co; T=Ru,Ti) *(11 pages)* 184415
L. Shlyk, B. G. Ueland, J. W. Lynn, Q. Huang, L. E. De Long, and S. Parkin

Realization of the exactly solvable Kitaev honeycomb lattice model in a spin-rotation-invariant system *(9 pages)* 184416
Fa Wang

Development of vortex state in circular magnetic nanodots: Theory and experiment *(8 pages)* 184417
J. Mejía-López, D. Altbir, P. Landeros, J. Escrig, A. H. Romero, Igor V. Roshchin, C.-P. Li, M. R. Fitzsimmons, X. Batlle, and Ivan K. Schuller

Structural symmetry and magnetocrystalline anisotropy of $SrRuO_3$ films on $SrTiO_3$ *(11 pages)* 184418
M. Ziese, I. Vrejoiu, and D. Hesse

Quantum electrodynamics and the origins of the exchange, dipole-dipole, and Dzyaloshinsky-Moriya interactions in itinerant fermion systems *(11 pages)* 184419
D. Belitz and T. R. Kirkpatrick

H-T phase diagram of the two-dimensional Ising model with exchange and dipolar interactions *(9 pages)* . . . 184420
Rogelio Díaz-Méndez and Roberto Mulet

Electronic structure and magnetic properties of (Fe,Co)-codoped ZnO: Theory and experiment *(13 pages)* . . . 184421
Debjani Karmakar, T. V. Chandrasekhar Rao, J. V. Yakhmi, A. Yaresko, V. N. Antonov, R. M. Kadam, S. K. Mandal, R. Adhikari, A. K. Das, T. K. Nath, Nirmal Ganguli, I. Dasgupta, and G. P. Das

(Continued)

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

Anisotropic physical properties of the $Al_{13}Fe_4$ complex intermetallic and its ternary derivative $Al_{13}(Fe,Ni)_4$ *(12 pages)* 184203
P. Popčević, A. Smontara, J. Ivkov, M. Wencka, M. Komelj, P. Jeglič, S. Vrtnik, M. Bobnar, Z. Jagličić, B. Bauer, P. Gille, H. Borrmann, U. Burkhardt, Yu. Grin, and J. Dolinšek

Anisotropic physical properties of the Taylor-phase T-$Al_{72.5}Mn_{21.5}Fe_{6.0}$ complex intermetallic *(11 pages)* 184204
M. Heggen, M. Feuerbacher, J. Ivkov, P. Popčević, I. Batistić, A. Smontara, M. Jagodič, Z. Jagličić, J. Janovec, M. Wencka, and J. Dolinšek

Ab initio electronic structure calculation of disorder ternary alloys: A reciprocal-space formulation *(13 pages)* 184205
Aftab Alam and Abhijit Mookerjee

Surface order in cold liquids: X-ray reflectivity studies of dielectric liquids and comparison to liquid metals *(8 pages)* 184206
Sudeshna Chattopadhyay, Ahmet Uysal, Benjamin Stripe, Steven Ehrlich, Evguenia A. Karapetrova, and Pulak Dutta

Analysis of nanostructure and nanochemistry by ASAXS: Accessing phase composition of oxyfluoride glass ceramics doped with Er^{3+}/Yb^{3+} *(7 pages)* 184207
Sylvio Haas, Armin Hoell, Roman Wurth, Christian Rüssel, Peter Boesecke, and Ulla Vainio

Dynamics, dynamical systems, lattice effects, quantum solids

Ionic conductivity of nanocrystalline yttria-stabilized zirconia: Grain boundary and size effects *(9 pages)* 184301
O. J. Durá, M. A. López de la Torre, L. Vázquez, J. Chaboy, R. Boada, A. Rivera-Calzada, J. Santamaria, and C. Leon

Quantum state of hydrogen in $LaNi_5$ *(6 pages)* 184302
Tomoaki Kaneko, Akinori Tezuka, Hiroshi Ogawa, and Tamio Ikeshoji

Quantum mechanical and information theoretic view on classical glass transitions *(22 pages)* 184303
Claudio Castelnovo, Claudio Chamon, and David Sherrington

Magnetism

Detailed relationship between local structure, polarons, and magnetization for $La_{1-x}Ca_xMnO_3$ $(0.21 \leq x \leq 0.45)$ *(19 pages)* 184401
F. Bridges, L. Downward, J. J. Neumeier, and T. A. Tyson

Incommensurate spin-density wave and magnetic lock-in transition in $CaFe_4As_3$ *(6 pages)* 184402
P. Manuel, L. C. Chapon, I. S. Todorov, D. Y. Chung, J.-P. Castellan, S. Rosenkranz, R. Osborn, P. Toledano, and M. G. Kanatzidis

Quasiparticle interference in the unconventional metamagnetic compound $Sr_3Ru_2O_7$ *(12 pages)* 184403
Wei-Cheng Lee, D. P. Arovas, and Congjun Wu

Absence of the hyperfine magnetic field at the Ru site in ferromagnetic rare-earth intermetallics *(11 pages)* 184404
D. Coffey, M. DeMarco, P. C. Ho, M. B. Maple, T. Sayles, J. W. Lynn, Q. Huang, S. Toorongian, and M. Haka

Magnetic phase of the perovskite $CaCrO_3$ studied with μ^+SR *(4 pages)* 184405
Oren Ofer, Jun Sugiyama, Martin Månsson, Kim H. Chow, Eduardo J. Ansaldo, Jess H. Brewer, Masahiko Isobe, and Yutaka Ueda

(Continued)

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

PHYSICAL REVIEW B THIRD SERIES, VOLUME 81, NUMBER 18 MAY 2010-1(II)

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

Energy dissipation and defect generation in nanocrystalline silicon carbide *(8 pages)* 184101
F. Gao, D. Chen, Wangyu Hu, and W. J. Weber

Influence of stress and strain on the kinetic stability and phase transitions of cubic and pseudocubic Ge-Sb-Te materials *(9 pages)* 184102
Matthias N. Schneider, Philipp Urban, Andreas Leineweber, Markus Döblinger, and Oliver Oeckler

First-principles calculations and tight-binding molecular dynamics simulations of the palladium-hydrogen system *(10 pages)* 184103
A. Shabaev, D. A. Papaconstantopoulos, M. J. Mehl, and N. Bernstein

Surface and bulk structural properties of single-crystalline $Sr_3Ru_2O_7$ *(8 pages)* 184104
Biao Hu, Gregory T. McCandless, Melissa Menard, V. B. Nascimento, Julia Y. Chan, E. W. Plummer, and R. Jin

Single-crystal elastic constants of ferromagnetic bcc Fe-based random alloys from first-principles theory *(14 pages)* 184105
Hualei Zhang, M. P. J. Punkkinen, Börje Johansson, Staffan Hertzman, and Levente Vitos

First-principles study of LiPON and related solid electrolytes *(15 pages)* 184106
Yaojun A. Du and N. A. W. Holzwarth

Ab initio quality neural-network potential for sodium *(8 pages)* 184107
Hagai Eshet, Rustam Z. Khaliullin, Thomas D. Kühne, Jörg Behler, and Michele Parrinello

Ab initio tensile tests of Al bulk crystals and grain boundaries: Universality of mechanical behavior *(6 pages)* 184108
Rebecca Janisch, Naveed Ahmed, and Alexander Hartmaier

Mechanism of surface modification in the plasma-surface interaction in electrical arcs *(8 pages)* 184109
H. Timko, F. Djurabekova, K. Nordlund, L. Costelle, K. Matyash, R. Schneider, A. Toerklep, G. Arnau-Izquierdo, A. Descoeudres, S. Calatroni, M. Taborelli, and W. Wuensch

Morphological instability of the dielectric Thomson nuclei *(8 pages)* 184110
Pavel Grinfeld

Strong variation of electrostrictive coupling near an intermediate temperature of relaxor ferroelectrics *(5 pages)* 184111
F. Craciun

Damping in high-frequency metallic nanomechanical resonators *(5 pages)* 184112
F. Hoehne, Yu. A. Pashkin, O. Astafiev, L. Faoro, L. B. Ioffe, Y. Nakamura, and J. S. Tsai

Inhomogeneous, disordered, and partially ordered systems

In situ transmission electron microscopy observation of an orientational order-disorder transition in Cd_6Eu and Cd_6Ce crystalline approximants *(5 pages)* 184201
Kazue Nishimoto, Ryuji Tamura, and Shin Takeuchi

Magnetic cluster expansion model for bcc-fcc transitions in Fe and Fe-Cr alloys *(6 pages)* 184202
M. Yu. Lavrentiev, D. Nguyen-Manh, and S. L. Dudarev

(Continued)

Selected for a Viewpoint in *Physics*. Please visit http://physics.aps.org/.

The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).