

1001
P-59/rb

PHYSICAL REVIEW BTM

CONDENSED MATTER AND MATERIALS PHYSICS

Articles Published in JUNE 2014

1(II)

Published by
AMERICAN PHYSICAL SOCIETYTM

Volume 89

Third Series

Number 22

RAPID COMMUNICATIONS

Structure, structural phase transitions, mechanical properties, defects

- Collective nature of plasticity in mediating phase transformation under shock compression (*5 pages*) 220101(R)
Hongxiang Zong, Xiangdong Ding, Turab Lookman, Ju Li, Jun Sun, Ellen K. Cerreta, A. P. Escobedo,
Francis L. Addessio, and Curt A. Bronkhorst
- Virial theorem and exact properties of density functionals for periodic systems (*5 pages*) 220102(R)
H. Mirhosseini, A. Cangì, T. Baldisiefen, A. Sanna, C. R. Proetto, and E. K. U. Gross
- Axial hypertoroidal moment in a ferroelectric nanotorus: A way to switch local polarization (*5 pages*) 220103(R)
Gentien Thörner, Jean-Michel Kiat, Christine Bogicevic, and Igor Kornev

Inhomogeneous, disordered, and partially ordered systems

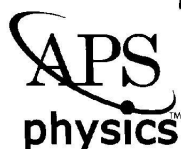
- Dynamics of many-body localization (*5 pages*) 220201(R)
Yevgeny Bar Lev and David R. Reichman

Dynamics, dynamical systems, lattice effects:

- ☞ Theory of nonlinear phononics for coherent light control of solids (*5 pages*) 220301(R)
Alaska Subedi, Andrea Cavalleri, and Antoine Georges

Magnetism

- Persistence of magnetic order in a highly excited Cu^{2+} state in CuO (*5 pages*) 220401(R)
U. Staub, R. A. de Souza, P. Beaud, E. Möhr-Vorobeva, G. Ingold, A. Caviezel, V. Scagnoli, B. Delley,
W. F. Schlotter, J. J. Turner, O. Krupin, W.-S. Lee, Y.-D. Chuang, L. Patthey, R. G. Moore, D. Lu, M. Yi,
P. S. Kirchmann, M. Trigo, P. Denes, D. Doering, Z. Hussain, Z. X. Shen, D. Prabhakaran, A. T. Boothroyd,
and S. L. Johnson
- Field-induced incommensurate phase in the strong-rung spin ladder with ferromagnetic legs (*5 pages*) 220402(R)
H. Yamaguchi, H. Miyagai, M. Yoshida, M. Takigawa, K. Iwase, T. Ono, N. Kase, K. Araki, S. Kittaka,
T. Sakakibara, T. Shimokawa, T. Okubo, K. Okunishi, A. Matsuo, and Y. Hosokoshi
- ☞ Pressure-induced polar phases in multiferroic delafossite CuFeO_2 (*6 pages*) 220403(R)
Noriki Terada, Dmitry D. Khalyavin, Pascal Manuel, Toyotaka Osakabe, Paolo G. Radaelli,
and Hideaki Kitazawa
- Temperature dependence of spin Hall magnetoresistance in thin YIG/Pt films (*5 pages*) 220404(R)
S. R. Marmion, M. Ali, M. McLaren, D. A. Williams, and B. J. Hickey



 Magnetic-field-induced phases in anisotropic triangular antiferromagnets: Application to CuCrO_2 (5 pages)	220405(R)
Shi-Zeng Lin, Kipton Barros, Eundeok Mun, Jae-Wook Kim, Matthias Frontzek, S. Barilo, S. V. Shiryayev, Vivien S. Zapf, and Cristian D. Batista	
Anomalous Hall effect in epitaxial $L1_0\text{-Mn}_{1.5}\text{Ga}$ films with variable chemical ordering (5 pages)	220406(R)
L. J. Zhu, D. Pan, and J. H. Zhao	
Commensurate-incommensurate magnetic phase transition in the Fe-doped bilayer ruthenate $\text{Ca}_3\text{Ru}_2\text{O}_7$ (5 pages)	220407(R)
X. Ke, J. Peng, W. Tian, Tao Hong, M. Zhu, and Z. Q. Mao	
Phase diagram of a frustrated spin- $\frac{1}{2}$ J_1 - J_2 XXZ model on the honeycomb lattice (5 pages)	220408(R)
P. H. Y. Li, R. F. Bishop, and C. E. Campbell	
Control of current-induced spin-orbit effects in a ferromagnetic heterostructure by electric field (5 pages)	220409(R)
R. H. Liu, W. L. Lim, and S. Urazhdin	
Superfluidity and superconductivity	
Enhancement of electronic spin susceptibility in Pauli-limited unconventional superconductors (5 pages)	220501(R)
Benjamin M. Rosemeyer and Anton B. Vorontsov	
Strong pressure-dependent electron-phonon coupling in FeSe (5 pages)	220502(R)
Subhasish Mandal, R. E. Cohen, and K. Haule	
Coexistence of orbital degeneracy lifting and superconductivity in iron-based superconductors (5 pages)	220503(R)
H. Miao, L.-M. Wang, P. Richard, S.-F. Wu, J. Ma, T. Qian, L.-Y. Xing, X.-C. Wang, C.-Q. Jin, C.-P. Chou, Z. Wang, W. Ku, and H. Ding	
 Time-reversal-invariant topological superconductivity induced by repulsive interactions in quantum wires (5 pages)	220504(R)
Arbel Haim, Anna Keselman, Erez Berg, and Yuval Oreg	
Fermi-surface topology of the iron pnictide LaFe_2P_2 (5 pages)	220505(R)
S. Blackburn, B. Prévost, M. Bartkowiak, O. Ignatchik, A. Polyakov, T. Förster, M. Côté, G. Seyfarth, C. Capan, Z. Fisk, R. G. Goodrich, I. Sheikin, H. Rosner, A. D. Bianchi, and J. Wosnitza	
Unusual band renormalization in the simplest iron-based superconductor FeSe_{1-x} (5 pages)	220506(R)
J. Maletz, V. B. Zabolotnyy, D. V. Evtushinsky, S. Thirupathiah, A. U. B. Wolter, L. Harnagea, A. N. Yaresko, A. N. Vasiliev, D. A. Chareev, A. E. Böhmer, F. Hardy, T. Wolf, C. Meingast, E. D. L. Rienks, B. Büchner, and S. V. Borisenko	
Nonlocality of zero-bias anomalies in the topologically trivial phase of Majorana wires (5 pages)	220507(R)
Tudor D. Stanescu and Sumanta Tewari	
Coexistence of Bloch electrons and glassy electrons in $\text{Ca}_{10}(\text{Ir}_4\text{As}_8)(\text{Fe}_{2-x}\text{Ir}_x\text{As}_2)_5$ revealed by angle-resolved photoemission spectroscopy (4 pages)	220508(R)
K. Sawada, D. Ootsuki, K. Kudo, D. Mitsuoka, M. Nohara, T. Noda, K. Horiba, M. Kobayashi, K. Ono, H. Kumigashira, N. L. Saini, and T. Mizokawa	
Upper critical field of KFe_2As_2 under pressure: A test for the change in the superconducting gap structure (5 pages)	220509(R)
Valentin Taufour, Neda Foroozani, Makariy A. Tanatar, Jinhyuk Lim, Udhara Kaluarachchi, Stella K. Kim, Yong Liu, Thomas A. Lograsso, Vladimir G. Kogan, Ruslan Prozorov, Sergey L. Bud'ko, James S. Schilling, and Paul C. Canfield	

(Continued)

- ☞ Pairing symmetry and dominant band in Sr_2RuO_4 (5 pages) 220510(R)
 Thomas Scaffidi, Jesper C. Romers, and Steven H. Simon
- ☞ Direct observation of bulk charge modulations in optimally doped $\text{Bi}_{1.5}\text{Pb}_{0.6}\text{Sr}_{1.54}\text{CaCu}_2\text{O}_{8+\delta}$ (5 pages) 220511(R)
 M. Hashimoto, G. Ghiringhelli, W.-S. Lee, G. Dellea, A. Amorese, C. Mazzoli, K. Kummer, N. B. Brookes, B. Moritz, Y. Yoshida, H. Eisaki, Z. Hussain, T. P. Devereaux, Z.-X. Shen, and L. Braicovich

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Understanding order in compositionally graded ferroelectrics: Flexoelectricity, gradient, and depolarization field effects (11 pages) 224101
 J. Zhang, R. Xu, A. R. Damodaran, Z.-H. Chen, and L. W. Martin
- Nanoscale heterogeneity, premartensitic nucleation, and a new plutonium structure in metastable δ fcc Pu-Ga alloys (22 pages) 224102
 Steven D. Conradson, Nicolas Bock, Julio M. Castro, Dylan R. Conradson, Lawrence E. Cox, Wojciech Dmowski, David E. Dooley, Takeshi Egami, Francisco J. Espinosa-Faller, Franz J. Freibert, Angel J. Garcia-Adeva, Nancy J. Hess, Erik K. Holmström, Rafael C. Howell, Barbara Katz, Jason C. Lashley, Raymond J. Martinez, David P. Moore, Luis A. Morales, J. David Olivas, Ramiro A. Pereyra, Michael Ramos, Sven P. Rudin, and Phillip M. Vilella
- Thermal activation analysis of enthalpic and entropic contributions to the activation free energy of basal and prismatic slips in Mg (7 pages) 224103
 Masayuki Uranagase and Ryosuke Matsumoto
- Influence of short-range forces on melting along grain boundaries (9 pages) 224104
 C. Hüter, F. Twiste, E. A. Brener, J. Neugebauer, and R. Spatschek
- Microscopic description of the evolution of the local structure and an evaluation of the chemical pressure concept in a solid solution (11 pages) 224105
 Soham Mukherjee, Angshuman Nag, Vancho Kocevski, Pralay K. Santra, Mahalingam Balasubramanian, Soma Chattopadhyay, Tomohiro Shibata, Franz Schaefer, Jan Ruzs, Celine Gerard, Olle Eriksson, C. U. Segre, and D. D. Sarma
- ☞ Multiple high-temperature transitions driven by dynamical structures in NaI (9 pages) 224106
 M. E. Manley, J. R. Jeffries, H. Lee, N. P. Butch, A. Zabalegui, and D. L. Abernathy
- Single-crystalline BiMnO_3 studied by temperature-dependent x-ray diffraction and Raman spectroscopy (6 pages) 224107
 P. Toulemonde, P. Bordet, P. Bouvier, and J. Kreisel
- Chirality, birefringence, and polarization effects in α -quartz studied by resonant elastic x-ray scattering (9 pages) 224108
 Yves Joly, Yoshikazu Tanaka, Delphine Cabaret, and Stephen P. Collins
- Multiphase equation of state for carbon addressing high pressures and temperatures (19 pages) 224109
 Lorin X. Benedict, Kevin P. Driver, Sebastien Hamel, Burkhard Militzer, Tingting Qi, Alfredo A. Correa, A. Saul, and Eric Schwegler
- Inhomogeneous, disordered, and partially ordered systems**
- Local structural excitations in model glasses (11 pages) 224201
 S. Swayamjyoti, J. F. Löffler, and P. M. Derlet

(Continued)

Transmission channels for light in absorbing random media: From diffusive to ballistic-like transport (<i>10 pages</i>)	224202
Seng Fatt Liew, Sébastien M. Popoff, Allard P. Mosk, Willem L. Vos, and Hui Cao	
AIII and BDI topological systems at strong disorder (<i>10 pages</i>)	224203
Juntao Song and Emil Prodan	
☞ Memory effects, two color percolation, and the temperature dependence of Mott variable-range hopping (<i>8 pages</i>)	224204
Oded Agam and Igor L. Aleiner	
Dynamics, dynamical systems, lattice effects:	
Probing IrTe ₂ crystal symmetry by polarized Raman scattering (<i>6 pages</i>)	224301
N. Lazarević, E. S. Bozin, M. Šćepanović, M. Opačić, Hechang Lei (雷和畅), C. Petrovic, and Z. V. Popović	
Cyclotron dynamics of interacting bosons in artificial magnetic fields (<i>6 pages</i>)	224302
Xiaopeng Li and S. Das Sarma	
Autocatalytic spin-crossover transition: Nonlinear dynamics induced by a photothermal instability (<i>9 pages</i>)	224303
Kamel Boukheddaden, Miguel Paez-Espejo, François Varret, and Mouhamadou Sy	
Lattice-dynamical model for the filled skutterudite LaFe ₄ Sb ₁₂ : Harmonic and anharmonic couplings (<i>16 pages</i>)	224304
J. L. Feldman, D. J. Singh, and N. Bernstein	
Efficient basis expansion for describing linear and nonlinear electron dynamics in crystalline solids (<i>11 pages</i>)	224305
Shunsuke A. Sato and Kazuhiro Yabana	
Soft-phonon mediated structural phase transition in GeTe (<i>7 pages</i>)	224306
Urszula D. Wdowik, Krzysztof Parlinski, Stéphane Rols, and Tapan Chatterji	
Thermodynamics of quantum crystalline membranes (<i>12 pages</i>)	224307
B. Amorim, R. Roldán, E. Cappelluti, A. Fasolino, F. Guinea, and M. I. Katsnelson	
Magnetism	
Metallic magnetism at finite temperatures studied by relativistic disordered moment description: Theory and applications (<i>11 pages</i>)	224401
A. Deák, E. Simon, L. Balogh, L. Szunyogh, M. dos Santos Dias, and J. B. Staunton	
Decay of the rotary echoes for the spin of a nitrogen-vacancy center in diamond (<i>19 pages</i>)	224402
V. V. Mkhitarian and V. V. Dobrovitski	
Thermally assisted current-driven skyrmion motion (<i>5 pages</i>)	224403
Roberto E. Troncoso and Alvaro S. Núñez	
Magnons and a two-component spin gap in FeV ₂ O ₄ (<i>8 pages</i>)	224404
G. J. MacDougall, I. Brodsky, A. A. Aczel, V. O. Garlea, G. E. Granroth, A. D. Christianson, T. Hong, H. D. Zhou, and S. E. Nagler	
Ground state and magnetic phase transitions of orthoferrite DyFeO ₃ (<i>8 pages</i>)	224405
Z. Y. Zhao, X. Zhao, H. D. Zhou, F. B. Zhang, Q. J. Li, C. Fan, X. F. Sun, and X. G. Li	
Spin-wave resonances in the presence of a Bloch wall (<i>5 pages</i>)	224406
Joyce Mullenix, Amal El-Ghazaly, Dok Won Lee, Shan X. Wang, and Robert M. White	

(Continued)

Spin-photon interaction in a cavity with time-reversal symmetry breaking (<i>7 pages</i>)	224407
Maxim Goryachev, Warrick G. Farr, Daniel L. Creedon, and Michael E. Tobar	
Nonreciprocal spin-wave channeling along textures driven by the Dzyaloshinskii-Moriya interaction (<i>5 pages</i>) . . .	224408
Felipe Garcia-Sanchez, Pablo Borys, Arne Vansteenkiste, Joo-Von Kim, and Robert L. Stamps	
Interfacial exchange coupling in Fe/(Ga,Mn)As bilayers (<i>7 pages</i>)	224409
A. M. Alsmadi, Y. Choi, D. J. Keavney, K. F. Eid, B. J. Kirby, X. Liu, J. Leiner, K. Tivakornsasithorn, M. Dobrowolska, and J. K. Furdyna	
Size-induced moment formation on isolated Fe atoms embedded in a nanocrystalline Ta matrix: Experiment and theory (<i>7 pages</i>)	224410
S. K. Mohanta, S. N. Mishra, Subhrangsu Sarkar, and Pushan Ayyub	
Unexpected magnetism, Griffiths phase, and exchange bias in the mixed lanthanide $\text{Pr}_{0.6}\text{Er}_{0.4}\text{Al}_2$ (<i>9 pages</i>)	224411
Arjun K. Pathak, D. Paudyal, W. T. Jayasekara, S. Calder, A. Kreyssig, A. I. Goldman, K. A. Gschneidner, Jr., and V. K. Pecharsky	
Phase transition in spin-crossover compounds in the breathing crystal field model (<i>9 pages</i>)	224412
Iurii Gudyma, Artur Maksymov, and Cristian Enachescu	
Transport properties of a quasi-two-dimensional electron system formed in $\text{LaAlO}_3/\text{EuTiO}_3/\text{SrTiO}_3$ heterostructures (<i>6 pages</i>)	224413
G. M. De Luca, R. Di Capua, E. Di Gennaro, F. Miletto Granozio, D. Stornaiuolo, M. Salluzzo, A. Gadaleta, I. Pallecchi, D. Marrè, C. Piamonteze, M. Radovic, Z. Ristic, and S. Rusponi	
Role of bulk-magnon transport in the temporal evolution of the longitudinal spin-Seebeck effect (<i>5 pages</i>)	224414
M. Agrawal, V. I. Vasyuchka, A. A. Serga, A. Kirihara, P. Pirro, T. Langner, M. B. Jungfleisch, A. V. Chumak, E. Th. Papaioannou, and B. Hillebrands	
Role of dimensionality in spontaneous magnon decay: Easy-plane ferromagnet (<i>6 pages</i>)	224415
V. A. Stephanovich and M. E. Zhitomirsky	
Magnetic excitations and anomalous spin-wave broadening in multiferroic FeV_2O_4 (<i>5 pages</i>)	224416
Qiang Zhang, Mehmet Ramazanoglu, Songxue Chi, Yong Liu, Thomas A. Lograsso, and David Vaknin	
Paramagnetic to ferromagnetic phase transition in lightly Fe-doped Cr_2B (<i>7 pages</i>)	224417
Leslie Schoop, Max Hirschberger, Jing Tao, Claudia Felser, N. P. Ong, and R. J. Cava	
Effective $S = \frac{1}{2}$ description of the $S = 1$ chain with strong easy-plane anisotropy (<i>12 pages</i>)	224418
C. Psaroudaki, J. Herbrych, J. Karadamoglou, P. Prelovšek, X. Zotos, and N. Papanicolaou	
First-order magnetic transition in $\text{Yb}_2\text{Ti}_2\text{O}_7$ (<i>7 pages</i>)	224419
E. Lhotel, S. R. Giblin, M. R. Lees, G. Balakrishnan, L. J. Chang, and Y. Yasui	
Giant magnetic domains in amorphous SmCo thin films (<i>5 pages</i>)	224420
Fridrik Magnus, Reda Moubah, Unnar B. Arnalds, Vassilios Kapaklis, Anna Brunner, Rudolf Schäfer, Gabriella Andersson, and Björgvin Hjörvarsson	
Controlling the polarity of the transient ferromagnetic-like state in ferrimagnets (<i>10 pages</i>)	224421
U. Atxitia, J. Barker, R. W. Chantrell, and O. Chubykalo-Fesenko	
Galvanomagnetic properties of partially ordered $L1_0$ FePt alloys (<i>8 pages</i>)	224422
J. Kudrnovský, V. Drchal, and I. Turek	

(Continued)

Superfluidity and superconductivity

Bistable state in superconductor/ferromagnet heterostructures (<i>6 pages</i>)	224501
I. V. Bobkova and A. M. Bobkov	
Quantum Monte Carlo measurement of the chemical potential of ^4He (<i>7 pages</i>)	224502
C. M. Herdman, A. Rommal, and A. Del Maestro	
Classification of two-dimensional topological crystalline superconductors and Majorana bound states at disclinations (<i>29 pages</i>)	224503
Wladimir A. Benalcazar, Jeffrey C. Y. Teo, and Taylor L. Hughes	
Superconductivity and correlated Fermi liquid behavior in noncentrosymmetric $\text{Ca}_3\text{Ir}_4\text{Ge}_4$ (<i>5 pages</i>)	224504
Fabian von Rohr, Huixia Luo, Ni Ni, Michael Wörle, and Robert J. Cava	
Orbital mixture effect on the Fermi-surface- T_c correlation in the cuprate superconductors: Bilayer vs. single layer (<i>6 pages</i>)	224505
Hirofumi Sakakibara, Katsuhiko Suzuki, Hidetomo Usui, Satoaki Miyao, Isao Maruyama, Koichi Kusakabe, Ryotaro Arita, Hideo Aoki, and Kazuhiko Kuroki	
Peculiarities of the orbital effect in the Fulde-Ferrell-Larkin-Ovchinnikov state in quasi-one-dimensional superconductors (<i>9 pages</i>)	224506
M. D. Croitoru and A. I. Buzdin	
Theory of macroscopic quantum tunneling with Josephson-Leggett collective excitations in multiband superconducting Josephson junctions (<i>7 pages</i>)	224507
Hidehiro Asai, Yukihiko Ota, Shiro Kawabata, Masahiko Machida, and Franco Nori	
Temperature dependence of the pair coherence and healing lengths for a fermionic superfluid throughout the BCS-BEC crossover (<i>20 pages</i>)	224508
F. Palestini and G. C. Strinati	
Correlated parity measurements as a probe of non-Abelian statistics in one-dimensional superconducting wires (<i>10 pages</i>)	224510
F. J. Burnell	
Evidence for SrHo_2O_4 and SrDy_2O_4 as model J_1 - J_2 zigzag chain materials (<i>5 pages</i>)	224511
A. Fennell, V. Y. Pomjakushin, A. Uldry, B. Delley, B. Prévost, A. Désilets-Benoit, A. D. Bianchi, R. I. Bewley, B. R. Hansen, T. Klimczuk, R. J. Cava, and M. Kenzelmann	
Zero-bias conductance peak in detached flakes of superconducting $2H$ - TaS_2 probed by scanning tunneling spectroscopy (<i>6 pages</i>)	224512
J. A. Galvis, L. Chirolli, I. Guillamón, S. Vieira, E. Navarro-Moratalla, E. Coronado, H. Suderow, and F. Guinea	
Charge density wave fluctuations in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ and their competition with superconductivity (<i>8 pages</i>)	224513
T. P. Croft, C. Lester, M. S. Senn, A. Bombardi, and S. M. Hayden	
Scheme for topological single electron pumping assisted by Majorana fermions (<i>6 pages</i>)	224514
Qi-Feng Liang, Zhi Wang, and Xiao Hu	
Strong and nonmonotonic temperature dependence of Hall coefficient in superconducting $\text{K}_x\text{Fe}_{2-y}\text{Se}_2$ single crystals (<i>5 pages</i>)	224515
Xiixin Ding, Yiming Pan, Huan Yang, and Hai-Hu Wen	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 89, NUMBER 22

JUNE 2014-1(II)

Quantum Monte Carlo study of a vortex in superfluid ^4He and search for a vortex state in the solid (<i>14 pages</i>)	224516
D. E. Galli, L. Reatto, and M. Rossi	
Fermi surface reconstruction in $(\text{Ba}_{1-x}\text{K}_x)\text{Fe}_2\text{As}_2$ ($0.44 \leq x \leq 1$) probed by thermoelectric power measurements (<i>6 pages</i>)	224517
Halyna Hodovanets, Yong Liu, Anton Jesche, Sheng Ran, Eun Deok Mun, Thomas A. Lograsso, Sergey L. Bud'ko, and Paul C. Canfield	

COMMENTS

Comment on "Origin of piezoelectric response under a biased scanning probe microscopy tip across a 180° ferroelectric domain wall" (<i>4 pages</i>)	226101
T. Jungk, Á. Hoffmann, and E. Soergel	
Reply to "Comment on 'Origin of piezoelectric response under a biased scanning probe microscopy tip across a 180° ferroelectric domain wall'" (<i>6 pages</i>)	226102
Shiming Lei, Eugene A. Eliseev, Anna N. Morozovska, Ryan C. Haislmaier, Tom T. A. Lummen, W. Cao, Sergei V. Kalinin, and Venkatraman Gopalan	