

## RAPID COMMUNICATIONS

### Structure, structural phase transitions, mechanical properties, defects

- Structural characteristic correlated to the electronic band gap in MoS<sub>2</sub> (6 pages) ..... 020101(R)  
Shengqi Chu, Changyong Park, and Guoyin Shen
- Boundaries determine the formation energies of lattice defects in two-dimensional buckled materials (5 pages) ... 020102(R)  
Sandeep K. Jain, Vladimir Juričić, and Gerard T. Barkema
- Deep electron and hole polarons and bipolarons in amorphous oxide (6 pages) ..... 020103(R)  
Moloud Kaviani, Jack Strand, Valery V. Afanas'ev, and Alexander L. Shluger

### Inhomogeneous, disordered, and partially ordered systems

- How periodic driving heats a disordered quantum spin chain (5 pages) ..... 020201(R)  
Jorge Rehn, Achilleas Lazarides, Frank Pollmann, and Roderich Moessner

### Dynamics, dynamical systems, lattice effects:

- ⌘ Analogue of Rashba pseudo-spin-orbit coupling in photonic lattices by gauge field engineering (6 pages) ..... 020301(R)  
Y. Plotnik, M. A. Bandres, S. Stützer, Y. Lumer, M. C. Rechtsman, A. Szameit, and M. Segev
- Control of two-phonon correlations and the mechanism of high-wavevector phonon generation by ultrafast light pulses (5 pages) ..... 020302(R)  
T. Henighan, M. Trigo, M. Chollet, J. N. Clark, S. Fahy, J. M. Glowina, M. P. Jiang, M. Kozina, H. Liu, S. Song, D. Zhu, and D. A. Reis
- Anomalous thermal conductivity and suppression of negative thermal expansion in ScF<sub>3</sub> (5 pages) ..... 020303(R)  
Ambroise van Roekeghem, Jesús Carrete, and Natalio Mingo

### Magnetism

- Quantification of a propagating spin-wave packet created by an ultrashort laser pulse in a thin film of a magnetic metal (5 pages) ..... 020401(R)  
S. Iihama, Y. Sasaki, A. Sugihara, A. Kamimaki, Y. Ando, and S. Mizukami
- Edge instability in a chiral stripe domain under an electric current and skyrmion generation (6 pages) ..... 020402(R)  
Shi-Zeng Lin
- Manipulation of pure spin current in ferromagnetic metals independent of magnetization (4 pages) ..... 020403(R)  
Dai Tian, Yufan Li, D. Qu, S. Y. Huang, Xiaofeng Jin, and C. L. Chien



# CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                                                                      |           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Topological magnetic dipolar interaction and nonlocal electric magnetization control in topological insulator heterostructures ( <i>5 pages</i> ) . . . . .                                                          | 020404(R) |
| Stefan Rex, Flavio S. Nogueira, and Asle Sudbø                                                                                                                                                                       |           |
| Theory of magnon motive force in chiral ferromagnets ( <i>5 pages</i> ) . . . . .                                                                                                                                    | 020405(R) |
| Utkan Güngördü and Alexey A. Kovalev                                                                                                                                                                                 |           |
|  Helicity, anisotropies, and their competition in a multiferroic magnet: Insight from the phase diagram ( <i>5 pages</i> ) . . . . . | 020406(R) |
| M. V. Gvozdikova, T. Ziman, and M. E. Zhitomirsky                                                                                                                                                                    |           |
| Unconventional magnetism on a honeycomb lattice in $\alpha$ -RuCl <sub>3</sub> studied by muon spin rotation ( <i>5 pages</i> ) . . . . .                                                                            | 020407(R) |
| F. Lang, P. J. Baker, A. A. Haghighirad, Y. Li, D. Prabhakaran, R. Valentí, and S. J. Blundell                                                                                                                       |           |
| Parity-time symmetry breaking in magnetic systems ( <i>5 pages</i> ) . . . . .                                                                                                                                       | 020408(R) |
| Alexey Galda and Valerii M. Vinokur                                                                                                                                                                                  |           |
| Model for multishot all-thermal all-optical switching in ferromagnets ( <i>5 pages</i> ) . . . . .                                                                                                                   | 020409(R) |
| J. Gorchon, Y. Yang, and J. Bokor                                                                                                                                                                                    |           |
| Thermal expansion and magnetovolume studies of the itinerant helical magnet MnSi ( <i>4 pages</i> ) . . . . .                                                                                                        | 020410(R) |
| A. E. Petrova and S. M. Stishov                                                                                                                                                                                      |           |
| Domain wall in a quantum anomalous Hall insulator as a magnetoelectric piston ( <i>5 pages</i> ) . . . . .                                                                                                           | 020411(R) |
| Pramey Upadhyaya and Yaroslav Tserkovnyak                                                                                                                                                                            |           |
| <b>Superfluidity and superconductivity</b>                                                                                                                                                                           |           |
| Hard gap in a normal layer coupled to a superconductor ( <i>5 pages</i> ) . . . . .                                                                                                                                  | 020501(R) |
| Christopher R. Reeg and Dmitrii L. Maslov                                                                                                                                                                            |           |
| Absence of superconductivity in the collapsed tetragonal phase of KFe <sub>2</sub> As <sub>2</sub> under hydrostatic pressure ( <i>5 pages</i> ) . . . . .                                                           | 020502(R) |
| Bosen Wang, Kazuyuki Matsubayashi, Jinguang Cheng, Taichi Terashima, Kunihiro Kihou, Shigeyuki Ishida, Chul-Ho Lee, Akira Iyo, Hiroshi Eisaki, and Yoshiya Uwatoko                                                   |           |
| Pressure-induced superconductivity in the antiferromagnet $\kappa$ -(ET) <sub>2</sub> CF <sub>3</sub> SO <sub>3</sub> with quasi-one-dimensional triangular spin lattice ( <i>6 pages</i> ) . . . . .                | 020503(R) |
| Hiroshi Ito, Takayuki Asai, Yasuhiro Shimizu, Hiromi Hayama, Yukihiro Yoshida, and Gunzi Saito                                                                                                                       |           |

## ARTICLES

### Structure, structural phase transitions, mechanical properties, defects

|                                                                                                                                                                                                                    |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Charge state dynamics of the nitrogen vacancy center in diamond under 1064-nm laser excitation ( <i>7 pages</i> ) . . . . .                                                                                        | 024101 |
| Peng Ji and M. V. Gurudev Dutt                                                                                                                                                                                     |        |
| Avalanche criticalities and elastic and calorimetric anomalies of the transition from cubic Cu-Al-Ni to a mixture of 18R and 2H structures ( <i>8 pages</i> ) . . . . .                                            | 024102 |
| Eduard Vives, Jordi Baró, María Carmen Gallardo, José-María Martín-Olalla, Francisco Javier Romero, Sarah L. Driver, Michael A. Carpenter, Ekhard K. H. Salje, Marcelo Stipcich, Ricardo Romero, and Antoni Planes |        |

(Continued)

# CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                           |        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| <i>Ab initio</i> scaling laws for the formation energy of nanosized interstitial defect clusters in iron, tungsten, and vanadium (15 pages) . . . . .                     | 024103 |
| R. Alexander, M.-C. Marinica, L. Proville, F. Willaime, K. Arakawa, M. R. Gilbert, and S. L. Dudarev                                                                      |        |
| High-pressure polymorphism of PbF <sub>2</sub> to 75 GPa (12 pages) . . . . .                                                                                             | 024104 |
| Camelia V. Stan, Rajkrishna Dutta, Claire E. White, Vitali Prakapenka, and Thomas S. Duffy                                                                                |        |
| Octahedral rotation patterns in strained EuFeO <sub>3</sub> and other <i>Pbnm</i> perovskite films: Implications for hybrid improper ferroelectricity (8 pages) . . . . . | 024105 |
| A. K. Choquette, C. R. Smith, R. J. Sichel-Tissot, E. J. Moon, M. D. Scafetta, E. Di Gennaro, F. Miletto Granozio, E. Karapetrova, and S. J. May                          |        |
| Superconductivity in the ferromagnetic semiconductor samarium nitride (8 pages) . . . . .                                                                                 | 024106 |
| E.-M. Anton, S. Granville, A. Engel, S. V. Chong, M. Governale, U. Zülicke, A. G. Moghaddam, H. J. Trodahl, F. Natali, S. Vézian, and B. J. Ruck                          |        |
| Radiation-induced mobility of small defect clusters in covalent materials (5 pages) . . . . .                                                                             | 024107 |
| Hao Jiang, Li He, Dane Morgan, Paul M. Voyles, and Izabela Szlufarska                                                                                                     |        |
| Assessing the influence of van der Waals corrected exchange-correlation functionals on the anisotropic mechanical properties of coinage metals (11 pages) . . . . .       | 024108 |
| Ji-Hwan Lee, Jong-Hun Park, and Aloysius Soon                                                                                                                             |        |
| Reconsidering the origins of Forsbergh birefringence patterns (6 pages) . . . . .                                                                                         | 024109 |
| A. Schilling, A. Kumar, R. G. P. McQuaid, A. M. Glazer, P. A. Thomas, and J. M. Gregg                                                                                     |        |
| X-ray white beam topography of self-organized domains in flux-grown BaTiO <sub>3</sub> single crystals (7 pages) . . . . .                                                | 024110 |
| D. Walker, A. M. Glazer, S. Gorfman, J. Baruchel, P. Pernot, R. T. Kluender, F. Masiello, C. DeVreugd, and P. A. Thomas                                                   |        |
| Effective interactions and atomic ordering in Ni-rich Ni-Re alloys (11 pages) . . . . .                                                                                   | 024111 |
| Shuang He, Ping Peng, Oleg I. Gorbatov, and Andrei V. Ruban                                                                                                               |        |
| Interfacially engineered oxygen octahedral rotations and their impact on strain relief in coherently grown SrRuO <sub>3</sub> films (6 pages) . . . . .                   | 024112 |
| Daisuke Kan, Yusuke Wakabayashi, Hiroo Tajiri, and Yuichi Shimakawa                                                                                                       |        |
| Wavelength dependence of femtosecond laser-induced breakdown in water and implications for laser surgery (19 pages) . . . . .                                             | 024113 |
| Norbert Linz, Sebastian Freidank, Xiao-Xuan Liang, and Alfred Vogel                                                                                                       |        |
| Flexoelectricity and the polarity of complex ferroelastic twin patterns (11 pages) . . . . .                                                                              | 024114 |
| Ekhard K. H. Salje, Suzhi Li, Massimiliano Stengel, Peter Gumbsch, and Xiangdong Ding                                                                                     |        |
| Confinement effects on Brillouin scattering in semiconductor nanowire photonic crystal (5 pages) . . . . .                                                                | 024115 |
| Pierre-Adrien Mante, Nicklas Anttu, Wei Zhang, Jesper Wallentin, I-Ju Chen, Sebastian Lehmann, Magnus Heurlin, Magnus T. Borgström, Mats-Erik Pistol, and Arkady Yartsev  |        |
| <b>Inhomogeneous, disordered, and partially ordered systems</b>                                                                                                           |        |
| Unconventional critical activated scaling of two-dimensional quantum spin glasses (5 pages) . . . . .                                                                     | 024201 |
| D. A. Matoz-Fernandez and F. Romá                                                                                                                                         |        |

(Continued)

|                                                                                                                                                                                                     |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Reinterpretation of the zero-temperature conductivity in icosahedral AlPdRe ( <i>4 pages</i> ) . . . . .                                                                                            | 024202 |
| Ö. Rapp                                                                                                                                                                                             |        |
| Regularization and decimation pseudolikelihood approaches to statistical inference in <i>XY</i> spin models ( <i>11 pages</i> ) . . . . .                                                           | 024203 |
| Payal Tyagi, Alessia Marruzzo, Andrea Pagnani, Fabrizio Antenucci, and Luca Leuzzi                                                                                                                  |        |
| Structure and dynamics of high-pressure Na close to the melting line: An <i>ab initio</i> molecular dynamics study ( <i>17 pages</i> ) . . . . .                                                    | 024204 |
| M. Marqués, D. J. González, and L. E. González                                                                                                                                                      |        |
| <b>Dynamics, dynamical systems, lattice effects:</b>                                                                                                                                                |        |
| Ultrafast optical response of the amorphous and crystalline states of the phase change material $\text{Ge}_2\text{Sb}_2\text{Te}_5$ ( <i>8 pages</i> ) . . . . .                                    | 024301 |
| T. A. Miller, M. Rudé, V. Pruneri, and S. Wall                                                                                                                                                      |        |
| Destruction of string order after a quantum quench ( <i>13 pages</i> ) . . . . .                                                                                                                    | 024302 |
| Marcello Calvanese Strinati, Leonardo Mazza, Manuel Endres, Davide Rossini, and Rosario Fazio                                                                                                       |        |
| Spectrally resolved detection in transient-reflectivity measurements of coherent optical phonons in diamond ( <i>7 pages</i> ) . . . . .                                                            | 024303 |
| Kazutaka G. Nakamura, Kazuma Ohya, Hiroshi Takahashi, Tetsuya Tsuruta, Hiroya Sasaki, Shin-ichi Uozumi, Katsura Norimatsu, Masahiro Kitajima, Yutaka Shikano, and Yosuke Kayanuma                   |        |
| Acoustic transmission through compound subwavelength slit arrays ( <i>7 pages</i> ) . . . . .                                                                                                       | 024304 |
| G. P. Ward, A. P. Hibbins, J. R. Sambles, and J. D. Smith                                                                                                                                           |        |
| Electron-phonon interaction within classical molecular dynamics ( <i>5 pages</i> ) . . . . .                                                                                                        | 024305 |
| A. Tamm, G. Samolyuk, A. A. Correa, M. Klintonberg, A. Aabloo, and A. Caro                                                                                                                          |        |
| Entanglement properties of the critical quench of $O(N)$ bosons ( <i>10 pages</i> ) . . . . .                                                                                                       | 024306 |
| Yonah Lemonik and Aditi Mitra                                                                                                                                                                       |        |
| Electrical modulation and switching of transverse acoustic phonons ( <i>13 pages</i> ) . . . . .                                                                                                    | 024307 |
| H. Jeong, Y. D. Jho, S. H. Rhim, K. J. Yee, S. Y. Yoon, J. P. Shim, D. S. Lee, J. W. Ju, J. H. Baek, and C. J. Stanton                                                                              |        |
| Boundary-induced dynamics in one-dimensional topological systems and memory effects of edge modes ( <i>10 pages</i> ) . . . . .                                                                     | 024308 |
| Yan He and Chih-Chun Chien                                                                                                                                                                          |        |
| <b>Magnetism</b>                                                                                                                                                                                    |        |
| Electronic and magnetic structure of epitaxial $\text{Fe}_3\text{O}_4(001)/\text{NiO}$ heterostructures grown on $\text{MgO}(001)$ and Nb-doped $\text{SrTiO}_3(001)$ ( <i>10 pages</i> ) . . . . . | 024401 |
| K. Kuepper, O. Kuschel, N. Pathé, T. Schemme, J. Schmalhorst, A. Thomas, E. Arenholz, M. Gorgoi, R. Ovsyannikov, S. Bartkowski, G. Reiss, and J. Wollschläger                                       |        |
| Universal critical behavior of the two-dimensional Ising spin glass ( <i>10 pages</i> ) . . . . .                                                                                                   | 024402 |
| L. A. Fernandez, E. Marinari, V. Martin-Mayor, G. Parisi, and J. J. Ruiz-Lorenzo                                                                                                                    |        |
| Role of Dzyaloshinskii-Moriya interaction for magnetism in transition-metal chains at Pt step edges ( <i>19 pages</i> ) . . . . .                                                                   | 024403 |
| B. Schweflinghaus, B. Zimmermann, M. Heide, G. Bihlmayer, and S. Blügel                                                                                                                             |        |

(Continued)

# CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                                                                                                                                                                                |        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Universal scaling for the spin-electricity conversion on surface states of topological insulators (6 pages) . . . . .                                                                                                                                                                                                          | 024404 |
| K. T. Yamamoto, Y. Shiomi, Kouji Segawa, Yoichi Ando, and E. Saitoh                                                                                                                                                                                                                                                            |        |
| Noncollinear magnetization between surface and bulk $\text{Y}_3\text{Fe}_5\text{O}_{12}$ (7 pages) . . . . .                                                                                                                                                                                                                   | 024405 |
| Po-Hsun Wu and Ssu-Yen Huang                                                                                                                                                                                                                                                                                                   |        |
| Induced magnetization and power loss for a periodically driven system of ferromagnetic nanoparticles with randomly oriented easy axes (11 pages) . . . . .                                                                                                                                                                     | 024406 |
| S. I. Denisov, T. V. Lyutyy, B. O. Pedchenko, and O. M. Hryshko                                                                                                                                                                                                                                                                |        |
| Lorentz microscopy and small-angle electron diffraction study of magnetic textures in $\text{La}_{1-x}\text{Sr}_x\text{MnO}_3$ ( $0.15 < x < 0.30$ ): The role of magnetic anisotropy (7 pages) . . . . .                                                                                                                      | 024407 |
| A. Kotani, H. Nakajima, K. Harada, Y. Ishii, and S. Mori                                                                                                                                                                                                                                                                       |        |
| X-ray scattering study of pyrochlore iridates: Crystal structure, electronic, and magnetic excitations (13 pages) . . . . .                                                                                                                                                                                                    | 024408 |
| J. P. Clancy, H. Gretarsson, E. K. H. Lee, Di Tian, J. Kim, M. H. Upton, D. Casa, T. Gog, Z. Islam, Byung-Gu Jeon, Kee Hoon Kim, S. Desgreniers, Yong Baek Kim, S. J. Julian, and Young-June Kim                                                                                                                               |        |
| Classification of magnons in rotated ferromagnetic Heisenberg model and their competing responses in transverse fields (17 pages) . . . . .                                                                                                                                                                                    | 024409 |
| Fadi Sun, Jinwu Ye, and Wu-Ming Liu                                                                                                                                                                                                                                                                                            |        |
| Spin glass state and enhanced spiral phase in doped delafossite oxide $\text{CuCrO}_2$ (5 pages) . . . . .                                                                                                                                                                                                                     | 024410 |
| Z. R. Yan, M. H. Qin, S. Dong, M. Zeng, X. B. Lu, X. S. Gao, and J.-M. Liu                                                                                                                                                                                                                                                     |        |
| Kondo route to spin inhomogeneities in the honeycomb Kitaev model (9 pages) . . . . .                                                                                                                                                                                                                                          | 024411 |
| S. D. Das, K. Dhochak, and V. Tripathi                                                                                                                                                                                                                                                                                         |        |
| Tuning the magnetocrystalline anisotropy in $\text{RCoPO}$ by means of $R$ substitution: A ferromagnetic resonance study (12 pages) . . . . .                                                                                                                                                                                  | 024412 |
| G. Prando, A. Alfonso, A. Pal, V. P. S. Awana, B. Büchner, and V. Kataev                                                                                                                                                                                                                                                       |        |
| Crystal structure and partial Ising-like magnetic ordering of orthorhombic $\text{Dy}_2\text{TiO}_5$ (10 pages) . . . . .                                                                                                                                                                                                      | 024413 |
| Jacob Shamblin, Stuart Calder, Zhiling Dun, Minseong Lee, Eun Sang Choi, Joerg Neufelnd, Haidong Zhou, and Maik Lang                                                                                                                                                                                                           |        |
| Strong enhancement of spin ordering by $A$ -site magnetic ions in the ferrimagnet $\text{CaCu}_3\text{Fe}_2\text{Os}_2\text{O}_{12}$ (8 pages) . . . .                                                                                                                                                                         | 024414 |
| Hongshan Deng, Min Liu, Jianhong Dai, Zhiwei Hu, Changyang Kuo, Yunyu Yin, Junye Yang, Xiao Wang, Qing Zhao, Yuanji Xu, Zhaoming Fu, Jianwang Cai, Haizhong Guo, Kuijuan Jin, Tunwen Pi, Yunliang Soo, Guanghui Zhou, Jinguang Cheng, Kai Chen, Philippe Ohresser, Yi-feng Yang, Changqing Jin, Liu-Hao Tjeng, and Youwen Long |        |
| Ultrafast magnetoelastic probing of surface acoustic transients (7 pages) . . . . .                                                                                                                                                                                                                                            | 024415 |
| J. Janušonis, C. L. Chang, T. Jansma, A. Gatilova, V. S. Vlasov, A. M. Lomonosov, V. V. Temnov, and R. I. Tobey                                                                                                                                                                                                                |        |
| Long-range antiferromagnetic order in epitaxial $\text{Mn}_2\text{GaC}$ thin films from neutron reflectometry (4 pages) . . . . .                                                                                                                                                                                              | 024416 |
| A. S. Ingason, G. K. Pálsson, M. Dahlqvist, and J. Rosen                                                                                                                                                                                                                                                                       |        |
| Optically induced spin-dependent diffusive transport in the presence of spin-orbit interaction for all-optical magnetization reversal (10 pages) . . . . .                                                                                                                                                                     | 024417 |
| Mehrdad Elyasi and Hyunsoo Yang                                                                                                                                                                                                                                                                                                |        |

(Continued)

# CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                                                                            |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Magnetic properties and Curie temperatures of disordered Heusler compounds: $\text{Co}_{1+x}\text{Fe}_{2-x}\text{Si}$ (8 pages) . . . . .                                                                                  | 024418 |
| Julia Erika Fischer, Julie Karel, Simone Fabbri, Peter Adler, Siham Ouardi, Gerhard H. Fecher, Franca Albertini, and Claudia Felser                                                                                        |        |
| Electromagnon in the Z-type hexaferrite $(\text{Ba}_x\text{Sr}_{1-x})_3\text{Co}_2\text{Fe}_{24}\text{O}_{41}$ (8 pages) . . . . .                                                                                         | 024419 |
| Filip Kadlec, Christelle Kadlec, Jakub Vít, Fedir Borodavka, Martin Kempa, Jan Prokleška, Josef Buršík, Róbert Uhrečký, Stéphane Rols, Yi Sheng Chai, Kun Zhai, Young Sun, Jan Dražák, Veronica Goian, and Stanislav Kamba |        |
| First-principles modeling of longitudinal spin fluctuations in itinerant electron antiferromagnets: High Néel temperature in the $\text{V}_3\text{Al}$ alloy (8 pages) . . . . .                                           | 024420 |
| Sergii Khmelevskyi                                                                                                                                                                                                         |        |
| Determination of nitrogen spin concentration in diamond using double electron-electron resonance (9 pages) . . . . .                                                                                                       | 024421 |
| Viktor Stepanov and Susumu Takahashi                                                                                                                                                                                       |        |
| Thickness-dependent cooperative aging in polycrystalline films of antiferromagnet $\text{CoO}$ (10 pages) . . . . .                                                                                                        | 024422 |
| Tianyu Ma, Xiang Cheng, Stefan Boettcher, Sergei Urazhdin, and Lydia Novozhilova                                                                                                                                           |        |
| Intrinsic magnetic properties in $R(\text{Fe}_{1-x}\text{Co}_x)_{11}\text{TiZ}$ ( $R = \text{Y}$ and $\text{Ce}$ ; $Z = \text{H}$ , $\text{C}$ , and $\text{N}$ ) (9 pages) . . . . .                                      | 024423 |
| Liqin Ke and Duane D. Johnson                                                                                                                                                                                              |        |
| Engineering chiral density waves and topological band structures by multiple- $Q$ superpositions of collinear up-up-down-down orders (10 pages) . . . . .                                                                  | 024424 |
| Satoru Hayami, Ryo Ozawa, and Yukitoshi Motome                                                                                                                                                                             |        |
| Characteristic dynamic modes and domain-wall motion in magnetic nanotubes excited by resonant rotating magnetic fields (8 pages) . . . . .                                                                                 | 024425 |
| Jaehak Yang, Junhoe Kim, Bosung Kim, Young-Jun Cho, Jae-Hyeok Lee, and Sang-Koog Kim                                                                                                                                       |        |
|  Thermal spin injection and interface insensitivity in permalloy/aluminum metallic nonlocal spin valves (13 pages) . . . . .             | 024426 |
| A. Hojem, D. Wesenberg, and B. L. Zink                                                                                                                                                                                     |        |
| Interplay between magnetism and energetics in Fe-Cr alloys from a predictive noncollinear magnetic tight-binding model (13 pages) . . . . .                                                                                | 024427 |
| R. Soulaire, C. Barretero, and Chu-Chun Fu                                                                                                                                                                                 |        |
| Anomalous Hall effect in Fe/Au multilayers (8 pages) . . . . .                                                                                                                                                             | 024428 |
| Q. Zhang, P. Li, Y. Wen, C. Zhao, J. W. Zhang, A. Manchon, W. B. Mi, Y. Peng, and X. X. Zhang                                                                                                                              |        |
| Structure and magnetism of cobalt at high pressure and low temperature (7 pages) . . . . .                                                                                                                                 | 024429 |
| R. Torchio, C. Marini, Y. O. Kvashnin, I. Kantor, O. Mathon, G. Garbarino, C. Meneghini, S. Anzellini, F. Occelli, P. Bruno, A. Dewaele, and S. Pascarelli                                                                 |        |
| Crystal-field parameters of the rare-earth pyrochlores $R_2\text{Ti}_2\text{O}_7$ ( $R = \text{Tb}$ , $\text{Dy}$ , and $\text{Ho}$ ) (16 pages) . . . . .                                                                 | 024430 |
| M. Ruminy, E. Pomjakushina, K. Iida, K. Kamazawa, D. T. Adroja, U. Stühr, and T. Fennell                                                                                                                                   |        |
| Topological spin-transfer drag driven by skyrmion diffusion (7 pages) . . . . .                                                                                                                                            | 024431 |
| Héctor Ochoa, Se Kwon Kim, and Yaroslav Tserkovnyak                                                                                                                                                                        |        |
| Tunable spin-wave frequency gap in anisotropy-graded FePt films obtained by ion irradiation (8 pages) . . . . .                                                                                                            | 024432 |
| S. Tacchi, M. G. Pini, A. Rettori, G. Varvaro, A. di Bona, S. Valeri, F. Albertini, P. Lupo, and F. Casoli                                                                                                                 |        |

(Continued)

# CONTENTS - Continued

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                                                                                                       |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Exotic quantum critical point on the surface of three-dimensional topological insulator (5 pages) . . . . .                                                                                                                                           | 024433 |
| Zhen Bi, Yi-Zhuang You, and Cenke Xu                                                                                                                                                                                                                  |        |
| Influence of the Dzyaloshinskii-Moriya interaction on the FMR spectrum of magnonic crystals and confined structures (7 pages) . . . . .                                                                                                               | 024434 |
| M. Mruczkiewicz and M. Krawczyk                                                                                                                                                                                                                       |        |
| Localized domain wall nucleation dynamics in asymmetric ferromagnetic rings revealed by direct time-resolved magnetic imaging (6 pages) . . . . .                                                                                                     | 024435 |
| Kornel Richter, Andrea Krone, Mohamad-Assaad Mawass, Benjamin Krüger, Markus Weigand, Hermann Stoll, Gisela Schütz, and Mathias Kläui                                                                                                                 |        |
| Candidate quantum spin ice in the pyrochlore $\text{Pr}_2\text{Hf}_2\text{O}_7$ (7 pages) . . . . .                                                                                                                                                   | 024436 |
| Romain Sibille, Elsa Lhotel, Monica Ciomaga Hatnean, Geetha Balakrishnan, Björn Fåk, Nicolas Gauthier, Tom Fennell, and Michel Kenzelmann                                                                                                             |        |
| Size dependence of structural stability and magnetization of nickel clusters from real-space pseudopotentials (5 pages) . . . . .                                                                                                                     | 024437 |
| Masahiro Sakurai, Jaime Souto-Casares, and James R. Chelikowsky                                                                                                                                                                                       |        |
| $\mu\text{SR}$ insight into the impurity problem in quantum kagome antiferromagnets (6 pages) . . . . .                                                                                                                                               | 024438 |
| M. Gomilšek, M. Klanjšek, M. Pregelj, H. Luetkens, Y. Li, Q. M. Zhang, and A. Zorko                                                                                                                                                                   |        |
| Stress-induced magnetic domain selection reveals a conical ground state for the multiferroic phase of $\text{Mn}_2\text{GeO}_4$ (10 pages) . . . . .                                                                                                  | 024439 |
| J. S. White, T. Honda, R. Sibille, N. Gauthier, V. Dmitriev, Th. Strässle, Ch. Niedermayer, T. Kimura, and M. Kenzelmann                                                                                                                              |        |
| <b>Superfluidity and superconductivity</b>                                                                                                                                                                                                            |        |
| Strongly enhanced superconductivity in doped monolayer $\text{MoS}_2$ by strain (6 pages) . . . . .                                                                                                                                                   | 024501 |
| Shuming Zeng, Yinchang Zhao, Geng Li, and Jun Ni                                                                                                                                                                                                      |        |
|  Superconductivity from a confinement transition out of a fractionalized Fermi liquid with $\mathbb{Z}_2$ topological and Ising-nematic orders (19 pages) . . . . . | 024502 |
| Shubhayu Chatterjee, Yang Qi, Subir Sachdev, and Julia Steinberg                                                                                                                                                                                      |        |
| Strong correlations between vacancy and magnetic ordering in superconducting $\text{K}_{0.8}\text{Fe}_{2-y}\text{Se}_2$ (6 pages) . . . . .                                                                                                           | 024503 |
| J. Yang, C. Duan, Q. Huang, C. Brown, J. Neufeind, and Despina Louca                                                                                                                                                                                  |        |
| Superfluid $^4\text{He}$ dynamics beyond quasiparticle excitations (5 pages) . . . . .                                                                                                                                                                | 024504 |
| K. Beauvois, C. E. Campbell, J. Dawidowski, B. Fåk, H. Godfrin, E. Krotscheck, H.-J. Lauter, T. Lichtenegger, J. Ollivier, and A. Sultan                                                                                                              |        |
| Superconductivity in the two-dimensional electron gas induced by high-energy optical phonon mode and large polarization of the $\text{SrTiO}_3$ substrate (11 pages) . . . . .                                                                        | 024505 |
| Baruch Rosenstein, B. Ya. Shapiro, I. Shapiro, and Dingping Li                                                                                                                                                                                        |        |
| Decay of Bogoliubov excitations in one-dimensional Bose gases (15 pages) . . . . .                                                                                                                                                                    | 024506 |
| Zoran Ristivojevic and K. A. Matveev                                                                                                                                                                                                                  |        |
| Platform for engineering topological superconductors: Superlattices on Rashba superconductors (6 pages) . . . . .                                                                                                                                     | 024507 |
| Yao Lu, Wen-Yu He, Dong-Hui Xu, Nian Lin, and K. T. Law                                                                                                                                                                                               |        |

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                                                                            |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Evolution of quasiparticle excitations with enhanced electron correlations in superconducting $\text{AFe}_2\text{As}_2$ ( $A = \text{K, Rb, and Cs}$ ) (7 pages) . . . . . | 024508 |
| Y. Mizukami, Y. Kawamoto, Y. Shimoyama, S. Kurata, H. Ikeda, T. Wolf, D. A. Zocco, K. Grube, H. v. Löhneysen, Y. Matsuda, and T. Shibauchi                                 |        |
| Crystallization of $^4\text{He}$ in aerogel via mass flow from surrounding solid $^4\text{He}$ (7 pages) . . . . .                                                         | 024509 |
| H. Matsuda, A. Ochi, R. Isozaki, S. Minami, R. Nomura, J. Pollanen, W. P. Halperin, and Y. Okuda                                                                           |        |
| History-dependent dissipative vortex dynamics in superconducting arrays (8 pages) . . . . .                                                                                | 024510 |
| Malcolm Durkin, Ian Mondragon-Shem, Serena Eley, Taylor L. Hughes, and Nadya Mason                                                                                         |        |
| BCS superconductivity near the band edge: Exact results for one and several bands (11 pages) . . . . .                                                                     | 024511 |
| D. Valentini, D. van der Marel, and C. Berthod                                                                                                                             |        |
| Heavy electron doping induced antiferromagnetic phase as the parent for the iron oxypnictide superconductor $\text{LaFeAsO}_{1-x}\text{H}_x$ (10 pages) . . . . .          | 024512 |
| Soshi Iimura, Satoru Matsuishi, and Hideo Hosono                                                                                                                           |        |
| Transmission of terahertz waves through layered superconductors controlled by a dc magnetic field (8 pages) . . . . .                                                      | 024513 |
| S. S. Apostolov, Z. A. Maizelis, N. M. Makarov, F. Pérez-Rodríguez, T. N. Rokhmanova, and V. A. Yampol'skii                                                                |        |
| Reentrant dynamics of driven pancake vortices in layered superconductors (9 pages) . . . . .                                                                               | 024514 |
| H. J. Zhao, Wenjuan Wu, Wei Zhou, Z. X. Shi, V. R. Misko, and F. M. Peeters                                                                                                |        |
| Near-degeneracy of extended $s + d_{x^2-y^2}$ and $d_{xy}$ order parameters in quasi-two-dimensional organic superconductors (13 pages) . . . . .                          | 024515 |
| Daniel Guterding, Michaela Altmeyer, Harald O. Jeschke, and Roser Valentí                                                                                                  |        |
| Probing the low-frequency vortex dynamics in a nanostructured superconducting strip (12 pages) . . . . .                                                                   | 024516 |
| C. C. de Souza Silva, B. Raes, J. Brisbois, L. R. E. Cabral, A. V. Silhanek, J. Van de Vondel, and V. V. Moshchalkov                                                       |        |
| Correlation-driven $d$ -wave superconductivity in Anderson lattice model: Two gaps (5 pages) . . . . .                                                                     | 024517 |
| Marcin M. Wysokiński, Jan Kaczmarczyk, and Józef Spałek                                                                                                                    |        |
| Superconductivity in the noncentrosymmetric compound $\text{Re}_6\text{Hf}$ (6 pages) . . . . .                                                                            | 024518 |
| Bin Chen, Yang Guo, Hangdong Wang, Qiping Su, Qianhui Mao, Jianhua Du, Yuxing Zhou, Jinhu Yang, and Minghu Fang                                                            |        |
| Absence of Andreev bound states in $\beta\text{-PdBi}_2$ probed by point-contact Andreev reflection spectroscopy (5 pages) . . . . .                                       | 024519 |
| Liqiang Che, Tian Le, C. Q. Xu, X. Z. Xing, Zhixiang Shi, Xiaofeng Xu, and Xin Lu                                                                                          |        |
| Electronic properties of emergent topological defects in chiral $p$ -wave superconductivity (13 pages) . . . . .                                                           | 024520 |
| L.-F. Zhang, V. Fernández Becerra, L. Covaci, and M. V. Milošević                                                                                                          |        |
| Strong-coupling superconductivity revealed by scanning tunneling microscope in tetragonal $\text{FeS}$ (6 pages) . . . . .                                                 | 024521 |
| Xiong Yang, Zengyi Du, Guan Du, Qiangqiang Gu, Hai Lin, Delong Fang, Huan Yang, Xiyu Zhu, and Hai-Hu Wen                                                                   |        |
| Scaling behavior of temperature-dependent thermopower in $\text{CeAu}_2\text{Si}_2$ under pressure (6 pages) . . . . .                                                     | 024522 |
| Z. Ren, G. W. Scheerer, G. Lapertot, and D. Jaccard                                                                                                                        |        |

(Continued)

# CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 94, NUMBER 2

JULY 2016-1(II)

|                                                                                                                             |        |
|-----------------------------------------------------------------------------------------------------------------------------|--------|
| Angle-resolved spectroscopy study of Ni-based superconductor $\text{SrNi}_2\text{As}_2$ ( <i>5 pages</i> ) . . . . .        | 024524 |
| L.-K. Zeng, P. Richard, A. van Roekeghem, J.-X. Yin, S.-F. Wu, Z. G. Chen, N. L. Wang, S. Biermann,<br>T. Qian, and H. Ding |        |
| Single crystals of superconducting $\text{SmFeAsOH}_x$ : Structure and properties ( <i>9 pages</i> ) . . . . .              | 024525 |
| A. Pisoni, S. Katrych, A. Arakcheeva, T. Verebélyi, M. Bokor, P. Huang, R. Gaál, P. Matus,<br>J. Karpinski, and L. Forró    |        |
| Variation of transition temperatures and residual resistivity ratio in vapor-grown FeSe ( <i>6 pages</i> ) . . . . .        | 024526 |
| A. E. Böhmer, V. Taufour, W. E. Straszheim, T. Wolf, and P. C. Canfield                                                     |        |