

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Structural transformations including melting and recrystallization during shock compression and release of germanium up to 45 GPa (*6 pages*) 134101
P. Renganathan, Stefan J. Turneare, Surinder M. Sharma, and Y. M. Gupta
- Valley Hall phases in kagome lattices (*16 pages*) 134102
Natalia Lera, Daniel Torrent, P. San-Jose, J. Christensen, and J. V. Alvarez
- Structural, electronic, and dynamical properties of the tetragonal and collapsed tetragonal phases of KFe_2As_2 (*16 pages*) 134103
Andrzej Ptak, Małgorzata Sternik, Konrad Jerzy Kapcia, and Przemysław Piekarczyk
- Shear-induced martensitic transformations in crystalline polyethylene: Direct molecular-dynamics simulations (*10 pages*) 134104
I. A. Strelnikov and E. A. Zubova
- Strong anisotropy in strength and toughness in defective hexagonal boron nitride (*17 pages*) 134105
Tousif Ahmed, Allison Procak, Tengyuan Hao, and Zubaer M. Hossain
- Origin of the piezochromism in Cs_2CuCl_4 : Electron-phonon and crystal-structure correlations (*9 pages*) 134106
E. Jara, J. A. Barreda-Argüeso, J. González, F. Rodríguez, and R. Valiente
- Melting curve and chemical stability of ammonia at high pressure: Combined x-ray diffraction and Raman study (*9 pages*) 134107
Jean-Antoine Queyroux, Sandra Ninet, Gunnar Weck, Gaston Garbarino, Thomas Plisson, Mohamed Mezouar, and Frédéric Datchi
- From an atomic layer to the bulk: Low-temperature atomistic structure and ferroelectric and electronic properties of SnTe films (*8 pages*) 134108
Thaneshwor P. Kaloni, Kai Chang, Brandon J. Miller, Qi-Kun Xue, Xi Chen, Shuai-Hua Ji, Stuart S. P. Parkin, and Salvador Barraza-Lopez
- Epitaxial strain adaptation in chemically disordered FeRh thin films (*9 pages*) 134109
Ralf Witte, Robert Kruk, Di Wang, Sabine Schlabach, Richard A. Brand, Markus E. Gruner, Heiko Wende, and Horst Hahn

Inhomogeneous, disordered, and partially ordered systems

- Search for Anderson localization of light by cold atoms in a static electric field (*7 pages*) 134201
S. E. Skipetrov and I. M. Sokolov



Auxiliary coherent medium theory for lattice vibrations in random binary alloys with mass and force-constant disorders (<i>9 pages</i>)	134202
Zihan Cheng, Jianxiong Zhai, Qingyun Zhang, and Youqi Ke	
Phonon localization in binary alloys with diagonal and off-diagonal disorder: A cluster Green's function approach (<i>11 pages</i>)	134203
Wasim Raja Mondal, T. Berlijn, M. Jarrell, and N. S. Vidhyadhiraja	
Quantum conductivity correction in a two-dimensional disordered pseudospin-1 system (<i>7 pages</i>)	134204
Zhi Yang, Weiwei Chen, Q. W. Shi, and Qunxiang Li	
 Multiscale entanglement clusters at the many-body localization phase transition (<i>12 pages</i>)	134205
Loïc Herviou, Soumya Bera, and Jens H. Bardarson	
Renormalized interactions in truncated cluster expansions (<i>18 pages</i>)	134206
J. M. Sanchez	
Radiative heat transfer between metallic nanoparticle clusters in both near field and far field (<i>9 pages</i>)	134207
Minggang Luo, Jian Dong, Junming Zhao, Linhua Liu, and Mauro Antezza	
Phonon localization in nanowires dominated by surface roughness (<i>8 pages</i>)	134208
P. Markoš and K. A. Muttalib	
Dynamics, dynamical systems, lattice effects:	
Semiclassical echo dynamics in the Sachdev-Ye-Kitaev model (<i>10 pages</i>)	134301
Markus Schmitt, Dries Sels, Stefan Kehrein, and Anatoli Polkovnikov	
Disentangling transient charge order from structural dynamics contributions during coherent atomic motion studied by ultrafast resonant x-ray diffraction (<i>7 pages</i>)	134302
L. Rettig, A. Caviezel, S. O. Mariager, G. Ingold, C. Dornes, S.-W. Huang, J. A. Johnson, M. Radovic, T. Huber, T. Kubacka, A. Ferrer, H. T. Lemke, M. Chollet, D. Zhu, J. M. Glowina, M. Sikorski, A. Robert, M. Nakamura, M. Kawasaki, Y. Tokura, S. L. Johnson, P. Beaud, and U. Staub	
<i>Ab initio</i> and nuclear inelastic scattering studies of Fe ₃ Si/GaAs heterostructures (<i>13 pages</i>)	134303
O. Sikora, J. Kalt, M. Sternik, A. Ptok, P. T. Jochym, J. Łażewski, K. Parlinski, P. Piekarz, I. Sergueev, H.-C. Wille, J. Herfort, B. Jenichen, T. Baumbach, and S. Stankov	
Wave propagation in one-dimensional fluid-saturated porous metamaterials (<i>9 pages</i>)	134304
Yan-Feng Wang, Jun-Wei Liang, A-Li Chen, Yue-Sheng Wang, and Vincent Laude	
 Instability of many-body localized systems as a phase transition in a nonstandard thermodynamic limit (<i>9 pages</i>)	134305
Sarang Gopalakrishnan and David A. Huse	
Nonreciprocal acoustic transmission in cascaded resonators via spatiotemporal modulation (<i>6 pages</i>)	134306
Chen Shen, Junfei Li, Zhetao Jia, Yangbo Xie, and Steven A. Cummer	
Anomalous behavior of nonequilibrium excitations in UO ₂ (<i>5 pages</i>)	134307
Dylan R. Rittman, Samuel W. Teitelbaum, David A. Reis, Wendy L. Mao, and Rodney C. Ewing	
Quantum dynamics of the small-polaron formation in a superconducting analog simulator (<i>12 pages</i>)	134308
Vladimir M. Stojanović and Igor Salom	

(Continued)

Magnetism

Universality of Dzyaloshinskii-Moriya interaction effect over domain-wall creep and flow regimes (6 pages)	134401
Duck-Ho Kim, Dae-Yun Kim, Sang-Cheol Yoo, Byoung-Chul Min, and Sug-Bong Choe	
Topologically nontrivial magnonic solitons (12 pages)	134402
Mehrdad Elyasi, Koji Sato, and Gerrit E. W. Bauer	
Asymmetric quantum shot noise in magnon transport (7 pages)	134403
Kouki Nakata, Yuichi Ohnuma, and Mamoru Matsuo	
Observation of the topological Hall effect and signature of room-temperature antiskyrmions in Mn-Ni-Ga D_{2d} Heusler magnets (6 pages)	134404
Subir Sen, Charanpreet Singh, Prashanta K. Mukharjee, Ramesh Nath, and Ajaya K. Nayak	
Combined use of translational and spin-rotational invariance for spin systems (7 pages)	134405
Tjark Heitmann and Jürgen Schnack	
Magnetostriction reveals orthorhombic distortion in tetragonal Gd compounds (10 pages)	134406
D. Betancourth, V. F. Correa, Jorge I. Facio, J. Fernández, V. Vildosola, R. Lora-Serrano, J. M. Cadogan, A. A. Aligia, Pablo S. Cornaglia, and D. J. García	
Frustrated diamond lattice antiferromagnet (5 pages)	134407
J. Oitmaa	
Kosterlitz-Thouless and Gaussian criticalities in a mixed spin- $(\frac{1}{2}, \frac{5}{2}, \frac{1}{2})$ Heisenberg branched chain with exchange anisotropy (9 pages)	134408
Luan M. Veríssimo, Maria S. S. Pereira, Jozef Strečka, and Marcelo L. Lyra	
Time-retarded damping and magnetic inertia in the Landau-Lifshitz-Gilbert equation self-consistently coupled to electronic time-dependent nonequilibrium Green functions (11 pages)	134409
Utkarsh Bajpai and Branislav K. Nikolić	
Accurate and unequivocal determination of the crystal-field parameters of lanthanide ions via a multitechnique approach (10 pages)	134410
Michael Slota, Shang-Da Jiang, Eric Heintze, Yvonne Rechkemmer, Martin Dressel, Joris van Slageren, and Lapo Bogani	
Coexisting spin-flop coupling and exchange bias in $\text{LaFeO}_3/\text{La}_{0.7}\text{Sr}_{0.3}\text{MnO}_3$ heterostructures (7 pages)	134411
F. K. Olsen, I. Hallsteinsen, E. Arenholz, T. Tybell, and E. Folven	
Cubic B20 helimagnets with quenched disorder in magnetic field (8 pages)	134412
O. I. Utesov and A. V. Syromyatnikov	
Large magnetic thermal conductivity induced by frustration in low-dimensional quantum magnets (16 pages)	134413
Jan Stolpp, Shang-Shun Zhang, Fabian Heidrich-Meisner, and Cristian D. Batista	
Half-metallicity of the ferrimagnet Mn_2VAl revealed by resonant inelastic soft x-ray scattering in a magnetic field (10 pages)	134414
R. Y. Umetsu, H. Fujiwara, K. Nagai, Y. Nakatani, M. Kawada, A. Sekiyama, F. Kuroda, H. Fujii, T. Oguchi, Y. Harada, J. Miyawaki, and S. Suga	
Intermultiplet transitions and magnetic long-range order in Sm-based pyrochlores (12 pages)	134415
Viviane Peçanha-Antonio, Erxi Feng, Xiao Sun, Devashibhai Adroja, Helen C. Walker, Alexandra S. Gibbs, Fabio Orlandi, Yixi Su, and Thomas Brückel	

(Continued)

Strain- and carrier-tunable magnetic properties of a two-dimensional intrinsically ferromagnetic semiconductor: CoBr ₂ monolayer (7 pages)	134416
H. Y. Lv, W. J. Lu, X. Luo, X. B. Zhu, and Y. P. Sun	
Revisiting the Kitaev material candidacy of Ir ⁴⁺ double perovskite iridates (12 pages)	134417
A. A. Aczel, J. P. Clancy, Q. Chen, H. D. Zhou, D. Reig-i-Plessis, G. J. MacDougall, J. P. C. Ruff, M. H. Upton, Z. Islam, T. J. Williams, S. Calder, and J.-Q. Yan	
Role of the crystal electric field on the two magnetic transitions in the orthorhombic YbMnO ₃ perovskite (9 pages)	134418
Jingsan Hu, Guannan Li, Xiaokun Huang, and Weiyi Zhang	
Phononic thermal Hall effect in diluted terbium oxides (5 pages)	134419
Yuji Hirokane, Yoichi Nii, Yasuhide Tomioka, and Yoshinori Onose	
Critical spin- $\frac{1}{2}$ tetramer compound CuInVO ₅ : Exploring the vicinity of two multimerized singlet states (9 pages)	134420
Sahinur Reja and Satoshi Nishimoto	
Dzyaloshinskii-Moriya interaction and spin-orbit torque at the Ir/Co interface (6 pages)	134421
Yuto Ishikuro, Masashi Kawaguchi, Naoaki Kato, Yong-Chang Lau, and Masamitsu Hayashi	
Magnetic ground state, field-induced transitions, electronic structure, and optical band gap of the frustrated antiferromagnet GeCo ₂ O ₄ (12 pages)	134422
P. Pramanik, S. Ghosh, P. Yanda, D. C. Joshi, S. Pittala, A. Sundaresan, P. K. Mishra, S. Thota, and M. S. Seehra	
Magnetic and electronic properties at the γ -Al ₂ O ₃ /SrTiO ₃ interface (7 pages)	134423
J. R. L. Mardegan, D. V. Christensen, Y. Z. Chen, S. Parchenko, S. R. V. Avula, N. Ortiz-Hernandez, M. Decker, C. Piamonteze, N. Pryds, and U. Staub	
Chiral excitation of spin waves in ferromagnetic films by magnetic nanowire gratings (12 pages)	134424
Tao Yu, Chuanpu Liu, Haiming Yu, Yaroslav M. Blanter, and Gerrit E. W. Bauer	
Interplay of uniform $U(1)$ quantum spin liquid and magnetic phases in rare-earth pyrochlore magnets: A fermionic parton approach (20 pages)	134425
Sambuddha Sanyal, Kusum Dhochak, and Subhro Bhattacharjee	
Abnormal anticrossing effect in photon-magnon coupling (7 pages)	134426
Biswanath Bhoi, Bosung Kim, Seung-Hun Jang, Junhoe Kim, Jaehak Yang, Young-Jun Cho, and Sang-Koog Kim	
Interfacial spin Hall effect and spin swapping in Fe-Au bilayers from first principles (8 pages)	134427
Song Li, Ka Shen, and Ke Xia	
Spin Seebeck effect and phonon energy transfer in heterostructures containing layers of a normal metal and a ferromagnetic insulator (10 pages)	134428
A. I. Bezuglyj, V. A. Shklovskij, V. V. Kruglyak, and R. V. Vovk	
Magnetocaloric effect of gadolinium in high magnetic fields (7 pages)	134429
T. Gottschall, M. D. Kuz'min, K. P. Skokov, Y. Skourski, M. Fries, O. Gutfleisch, M. Ghorbani Zavareh, D. L. Schlager, Y. Mudryk, V. Pecharsky, and J. Wosnitzer	
Theoretical study of laser-induced ultrafast spin dynamics in small iron-benzene clusters and of related laser and magnetic-field effects (11 pages)	134430
Hong Du, Jing Liu, Na Zhang, Jun Chang, Wei Jin, Chun Li, Georgios Lefkidis, and Wolfgang Hübner	

(Continued)

Quasiperiodic magnetic chain as a spin filter for arbitrary spin states (7 pages)	134431
Biplab Pal	
Bulklike behavior of magnetoelasticity in epitaxial $\text{Fe}_{1-x}\text{Ga}_x$ thin films (6 pages)	134432
M. Barturen, D. Sander, J. Milano, J. Prempere, C. Helman, M. Eddrief, J. Kirschner, and M. Marangolo	
Relaxation processes of the light-induced giant injection magnetoresistance in semiconductor/granular-film heterostructures with cobalt nanoparticles (10 pages)	134433
L. V. Lutsev, L. A. Shelukhin, A. I. Stognij, and N. N. Novitskii	
Anisotropic magnetization plateaus in $S_{\text{eff}} = 1/2$ skew-chain single-crystal $\text{Co}_2\text{V}_2\text{O}_7$ (9 pages)	134434
L. Yin, Z. W. Ouyang, J. F. Wang, X. Y. Yue, R. Chen, Z. Z. He, Z. X. Wang, Z. C. Xia, and Y. Liu	
Long-range magnetic order stabilized by acceptors (6 pages)	134435
Xiaodong Zhang, Jingzhao Zhang, Kinfa Tse, Shengbai Zhang, and Junyi Zhu	
Spin-dependent transport characterization in metallic lateral spin valves using one-dimensional and three-dimensional modeling (7 pages)	134436
P. Laczkowski, M. Cosset-Cheneau, W. Savero-Torres, V. T. Pham, G. Zahnd, H. Jaffrès, N. Reyren, J.-C. Rojas-Sánchez, A. Marty, L. Vila, J.-M. George, and J.-P. Attané	
Spin-fermion model for skyrmions in MnGe derived from strong correlations (7 pages)	134437
Hongchul Choi, Yuan-Yen Tai, and Jian-Xin Zhu	
Deviation from the dipole-ice model in the spinel spin-ice candidate MgEr_2Se_4 (13 pages)	134438
D. Reig-i-Plessis, S. V. Geldern, A. A. Aczel, D. Kochkov, B. K. Clark, and G. J. MacDougall	
Complex magnetic order in the $\text{Nd}(\text{Tb})\text{Fe}_3(\text{BO}_3)_4$ multiferroic revealed by single-crystal neutron diffraction (10 pages)	134439
I. V. Golosovsky, A. I. Vasilev, A. A. Mukhin, E. Ressouche, V. Skumryev, I. Urcelay-Olabarria, I. A. Gudim, and L. N. Bezmaternykh	
Tunneling-induced restoration of classical degeneracy in quantum kagome ice (10 pages)	134440
Kai-Hsin Wu, Yi-Ping Huang, and Ying-Jer Kao	
Signature of a quantum dimensional transition in the spin- $\frac{1}{2}$ antiferromagnetic Heisenberg model on a square lattice and space reduction in the matrix product state (23 pages)	134441
Lihua Wang and Kwang S. Kim	
Magnetoelectric effect in band insulator-ferromagnet heterostructures (10 pages)	134442
Ken N. Okada, Yasuyuki Kato, and Yukitoshi Motome	
High-pressure magnetism of the double perovskite $\text{Sr}_2\text{FeOsO}_6$ studied by synchrotron ^{57}Fe Mössbauer spectroscopy (12 pages)	134443
Peter Adler, Sergey A. Medvedev, Pavel G. Naumov, Shrikant Mohitkar, Rudolf Ruffer, Martin Jansen, and Claudia Felser	
Magnetic multipoles in a ruthenate $\text{Ca}_3\text{Ru}_2\text{O}_7$ (9 pages)	134444
S. W. Lovesey, D. D. Khalyavin, and G. van der Laan	
Transient response of the cavity magnon-polariton (6 pages)	134445
Christophe Match, Michael Harder, Lihui Bai, Paul Hyde, and Can-Ming Hu	

(Continued)

Magnetic skyrmion lattice by the Fourier transform method (<i>11 pages</i>)	134446
Eugene Balkind, Aldo Isidori, and Matthias Eschrig	
Superfluidity and superconductivity	
Accurate determination of the Fermi surface of tetragonal FeS via quantum oscillation measurements and quasiparticle self-consistent <i>GW</i> calculations (<i>7 pages</i>)	134501
Taichi Terashima, Naoki Kikugawa, David Graf, Hishiro T. Hirose, Shinya Uji, Yoshitaka Matsushita, Hai Lin, Xiyu Zhu, Hai-Hu Wen, Takuya Nomoto, Katsuhiko Suzuki, and Hiroaki Ikeda	
Linear response theory of Josephson junction arrays in a microwave cavity (<i>13 pages</i>)	134502
Samuel A. Wilkinson and Jared H. Cole	
Self-induced magnetic flux structure in the magnetic superconductor RbEuFe ₄ As ₄ (<i>6 pages</i>)	134503
V. K. Vlasko-Vlasov, A. E. Koshelev, M. Smylie, J.-K. Bao, D. Y. Chung, M. G. Kanatzidis, U. Welp, and W.-K. Kwok	
Combined effects of pairing fluctuations and a pseudogap in the cuprate Hall coefficient (<i>17 pages</i>)	134504
Rufus Boyack, Xiaoyu Wang, Qijin Chen, and K. Levin	
Tunable magnetic textures in spin valves: From spintronics to Majorana bound states (<i>8 pages</i>)	134505
Tong Zhou, Narayan Mohanta, Jong E. Han, Alex Matos-Abiadue, and Igor Žutić	
Bound states in a superfluid vortex: A detailed study along the BCS-BEC crossover (<i>10 pages</i>)	134506
S. Simonucci, P. Pieri, and G. Calvanese Strinati	
Controllable two-qubit swapping gate using superconducting circuits (<i>9 pages</i>)	134508
S. E. Rasmussen, K. S. Christensen, and N. T. Zinner	
Type-I superconductivity in the noncentrosymmetric superconductor BeAu (<i>9 pages</i>)	134509
D. Singh, A. D. Hillier, and R. P. Singh	
μ SR and magnetometry study of the type-I superconductor BeAu (<i>9 pages</i>)	134510
J. Beare, M. Nugent, M. N. Wilson, Y. Cai, T. J. S. Munsie, A. Amon, A. Leithe-Jasper, Z. Gong, S. L. Guo, Z. Guguchia, Y. Grin, Y. J. Uemura, E. Svanidze, and G. M. Luke	
Electron-phonon coupling and superconductivity-induced distortion of the phonon lineshape in V ₃ Si (<i>9 pages</i>)	134511
A. Sauer, D. A. Zocco, A. H. Said, R. Heid, A. Böhmer, and F. Weber	
Electronic structure of a mesoscopic superconducting disk: Quasiparticle tunneling between the giant vortex core and the disk edge (<i>11 pages</i>)	134512
A. V. Samokhvalov, I. A. Shereshevskii, N. K. Vdovicheva, M. Taupin, I. M. Khaymovich, J. P. Pekola, and A. S. Mel'nikov	
Classification of topological crystalline superconducting nodes on high-symmetry lines: Point nodes, line nodes, and Bogoliubov Fermi surfaces (<i>19 pages</i>)	134513
Shuntaro Sumita, Takuya Nomoto, Ken Shiozaki, and Youichi Yanase	
Thermopower and thermal conductance of a superconducting quantum point contact (<i>18 pages</i>)	134514
Sergey S. Pershoguba and Leonid I. Glazman	
Wannier pairs in superconducting twisted bilayer graphene and related systems (<i>9 pages</i>)	134515
Sujay Ray, Jeil Jung, and Tanmoy Das	

(Continued)

Magnetization reorientation due to the superconducting transition in heavy-metal heterostructures (<i>11 pages</i>)	134516
Lina G. Johnsen, Niladri Banerjee, and Jacob Linder	
	134517
R. Fumagalli, L. Braicovich, M. Minola, Y. Y. Peng, K. Kummer, D. Betto, M. Rossi, E. Lefrançois, C. Morawe, M. Salluzzo, H. Suzuki, F. Yakhov, M. Le Tacon, B. Keimer, N. B. Brookes, M. Moretti Sala, and G. Ghiringhelli	
Comprehensive Eliashberg analysis of microwave conductivity and penetration depth of K-, Co-, and P-substituted BaFe ₂ As ₂ (<i>10 pages</i>)	134518
D. Torsello, G. A. Ummarino, L. Gozzelino, T. Tamegai, and G. Ghigo	
Weaker nematic phase connected to the first order antiferromagnetic phase transition in SrFe ₂ As ₂ compared to BaFe ₂ As ₂ (<i>8 pages</i>)	134519
David W. Tam, Weiyi Wang, Li Zhang, Yu Song, Rui Zhang, Scott V. Carr, H. C. Walker, Toby G. Perring, D. T. Adroja, and Pengcheng Dai	
Surface terminations and layer-resolved tunneling spectroscopy of the 122 iron pnictide superconductors (<i>6 pages</i>)	134520
Ang Li, Jia-Xin Yin, Jihui Wang, Zheng Wu, Jihua Ma, Athena S. Sefat, Brian C. Sales, David G. Mandrus, Michael A. McGuire, Rongying Jin, Chenglin Zhang, Pengcheng Dai, Bing Lv, Ching-Wu Chu, Xuejin Liang, P.-H. Hor, C.-S. Ting, and Shuheng H. Pan	