

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- ☞ Charge density waves and soft phonon evolution in the superconductor $\text{BaNi}_2(\text{As}_{1-x}\text{P}_x)_2$ (11 pages) 054101
Tom Lacmann, Sofia-Michaela Souliou, Fabian Henssler, Mehdi Frachet, Philippa Helen McGuinness, Michael Merz, Björn Wehinger, Daniel A. Chaney, Amir-Abbas Haghighirad, Rolf Heid, and Matthieu Le Tacon
- Shock equation of state and critical vaporization of MgSiO_3 from *ab initio* simulations (9 pages) 054102
Fei-Yang Xu, Zhi-Guo Li, Hongxing Song, Lei Liu, Huayun Geng, Xiang-Rong Chen, and Jianbo Hu
- Thermally induced phase transition in low-dimensional tungsten: Unraveling the roles of size and impurity (8 pages) 054103
Shanshan Wu, Yuxuan Hou, Peili Zhao, Ying Zhang, Lei Li, Pei Li, Ruilong Huang, Jie Hu, Shuangfeng Jia, He Zheng, and Jianbo Wang
- Structural phase transitions in lightly doped VO_2 systems (7 pages) 054104
Sayak Mandal, Swapnil Shukla, Rohit Kumar Rohj, Titas Pramanik, Bobby Joseph, and D. D. Sarma
- Lattice thermal conductivity of CaSiO_3 under high pressure (8 pages) 054105
Shi He, Junyi Miao, Kaihua He, Wei Dai, Haihua Chen, Xiucai He, Yi Ran, and Cheng Lu
- Pressure-induced mechanical instabilities in cubic SiC: Structural and electronic properties (15 pages) 054106
Carlos P. Herrero, Eduardo R. Hernández, Gabriela Herrero-Saboya, and Rafael Ramírez
- ☞ Atomic-scale phase-field modeling for ferroelectrics (10 pages) 054107
Kairi Masuda and Andrew M. Rappe
- Atomic cluster expansion interatomic potentials for lithium: Investigating the solid and liquid phases (15 pages) 054108
Prashanth Srinivasan, Siddharth Puri, Karen Pacho Dominguez, Andrew P. Horsfield, Mark R. Gilbert, and Duc Nguyen-Manh

Inhomogeneous, disordered, and partially ordered systems

- Exact mobility edges in quasiperiodic network models with slowly varying potentials (12 pages) 054201
Hai-Tao Hu, Yang Chen, Xiaoshui Lin, Ai-Min Guo, Zijing Lin, and Ming Gong
- Coexistence of reentrant localization and dynamical delocalization in a one-dimensional non-Hermitian quasiperiodic lattice (12 pages) 054202
Haoyu Wang, Xiaohong Zheng, Liantuan Xiao, Suotang Jia, Jun Chen, and Lei Zhang
- High-pressure reduction of carbon dioxide in reactive liquid mixtures (10 pages) 054203
D. Durkee, K. P. Hilleke, and S. X. Hu



(Continued)



2469-9950(20250801)112:5;1-B

Disorder-driven quantum phase transitions in two-dimensional altermagnets: Emergence of a marginal metal phase (7 pages)	054204
Longhai Zeng, Weiyi Wang, Zhiwei Jiao, Manyu Shang, and Weiwei Chen	
Dynamics, dynamical systems, lattice effects:	
Quantum conditional mutual information as a probe of measurement-induced entanglement phase transitions (10 pages)	054301
Yuichi Otsuka, Kazuhiro Seki, and Seiji Yunoki	
Phonon density of states in uranium Laves phases UNi_2 and UCo_2 (9 pages)	054302
Z. E. Brubaker, D. H. Moseley, J. Neu, C. M. Parish, E. Nykwest, A. E. Shields, A. J. Miskowiec, D. L. Abernathy, and J. L. Niedziela	
Thermodynamics and protection of discrete time crystals (12 pages)	054303
Gabriele Cenedese, Samuel T. Mister, Mauro Antezza, Giuliano Benenti, and Gabriele De Chiara	
Scaling and universality at noisy quench dynamical quantum phase transitions (13 pages)	054304
Saeid Ansari, R. Jafari, Alireza Akbari, and Mehdi Abdi	
Localization in the frequency domain (6 pages)	054305
Chu-hui Fan, Weronika Golletz, Damian Włodzyński, and Krzysztof Sacha	
High n -type thermoelectric performance due to anisotropic charge-phonon transport in CuBiSCl_2 (8 pages)	054306
Yu Wu, Ying Chen, Shuming Zeng, Liujiang Zhou, and Chenhan Liu	
Studying thermal radiation with T matrices (14 pages)	054307
Juan Diego Mazo-Vásquez, Markus Nyman, Marjan Krstić, Lukas Rebholz, Carsten Rockstuhl, and Ivan Fernandez-Corbaton	
Dynamics of the electron-hole separation of the fundamental exciton in LiF (15 pages)	054308
Toraya Fernández Ruíz, Pablo García-Fernández, José Antonio Aramburu, Miguel Moreno, Steen Lysgaard, and Juan María García-Lastra	
Measurement-induced phase transitions for free fermions in a quasiperiodic potential (13 pages)	054309
Toranosuke Matsubara, Kazuki Yamamoto, and Akihisa Koga	
Phononic frictional losses of a particle crossing a crystal: Linear response theory (22 pages)	054310
Gabriele Riva, Giacomo Piscia, Nicolas Trojani, Giuseppe E. Santoro, Erio Tosatti, and Nicola Manini	
Ultrafast dynamics of carriers, coherent acoustic phonons, and strain pulses in $\text{BiSbTe}_{1.5}\text{Se}_{1.5}$ topological insulator thin films (12 pages)	054311
Anupama Chauhan, Sidhanta Sahu, Poulami Ghosh, Dheerendra Singh, Sambhu G. Nath, Anjan Kumar N. M., P. K. Panigrahi, Chiranjib Mitra, and N. Kamaraju	
Dynamical quantum phase transition, metastable state, and dimensionality reduction: Krylov analysis of fully connected spin models (10 pages)	054312
Kazutaka Takahashi	
Circular photon drag effect in Dirac electrons by quantum geometry (6 pages)	054313
Guanxiong Qu	
Identification of the transport regimes of the one-dimensional Holstein model (14 pages)	054314
Suzana Miladić and Nenad Vukmirović	

(Continued)

Magnetism

Spin amplitude wave due to dipole-quadrupole hybridization in pseudospin-1 pyrochlore magnets (<i>17 pages</i>)	054401
Hiroki Nakai and Chisa Hotta	
Magnetotransport behavior and anomalous Hall effect of CVT grown single-crystalline topological $\text{Fe}_{3-x}\text{GeTe}_2$ (<i>12 pages</i>)	054402
Rosni Roy, Sanat Kumar Adhikari, Riya Roy, Souvik Chatterjee, and Rajib Mondal	
Charge-induced atomic strain as a predictor of structural phase transformation in rare-earth intermetallics (<i>11 pages</i>)	054403
Prashant Singh, Anis Biswas, Alexander Thayer, and Yaroslav Mudryk	
Path-integral spin dynamics with exchange and external field (<i>10 pages</i>)	054404
Thomas Nussle, Stam Nicolis, Iason Sofos, and Joseph Barker	
Ferrimagnetic state of the metal-organic framework $\text{CrCl}_2(\text{pyz})_2$ (<i>5 pages</i>)	054405
Freja Schou Guttesen and Per Hedegård	
Spin canting in the spin-orbit coupled $4d^3$ oxide $\text{Ca}_3\text{LiRuO}_6$ (<i>12 pages</i>)	054406
B. C. Sahoo, A. Jain, M. Madaan, V. K. Malik, and S. M. Yusuf	
Magnetothermal resistance effect in a $\text{Co}_{50}\text{Fe}_{50}/\text{Cu}$ multilayer studied via analysis of electron and lattice thermal conductivities (<i>9 pages</i>)	054407
Fuya Makino, Takamasa Hirai, Takuma Shiga, Hirofumi Suto, Hiroshi Fujihisa, Koichi Oyanagi, Satoru Kobayashi, Taisuke Sasaki, Takashi Yagi, Ken-ichi Uchida, and Yuya Sakuraba	
Field-controlled reversible transition between $k\pi$ -skyrmions (<i>7 pages</i>)	054408
Jianxiong Zhang, Wenbin Wang, Lichuang Yan, Jianmin Sun, and Hang Li	
High Chern numbers and topological flat bands in high-field polarized Kitaev magnets on the star lattice (<i>10 pages</i>)	054409
Zixuan Zou and Qiang Luo	
Observation of thermally activated coherent magnon-magnon coupling in a magnonic hybrid system (<i>6 pages</i>) . . .	054410
Dinesh Wagle, Yi Li, Mojtaba Taghipour Kaffash, Sergi Lendinez, Mohammad Tomal Hossain, Valentine Novosad, and M. Benjamin Jungfleisch	
Enhanced magnetic dichroism in dark-field UV photoemission electron microscopy (<i>7 pages</i>)	054411
Maximilian Paleschke, David Huber, Friederike Wüthrl, Cheng-Tien Chiang, Frank O. Schumann, Jürgen Henk, and Wolf Widdra	
Out-of-plane ferroelectricity, magnetoelectric coupling, and persistent spin texture in two-dimensional multiferroics (<i>8 pages</i>)	054412
Ying Zhou, Cheng-Ao Ji, Shuai Dong, and Xue-Zeng Lu	
Magnon-mediated switching of perpendicular magnetization by the topological crystalline insulator SnTe with high spin Hall conductivity (<i>9 pages</i>)	054413
Pengnan Zhao, Guoyi Shi, Wentian Lu, Lihuan Yang, Hui Ru Tan, Kaiwei Guo, Jia-Min Lai, Zhonghai Yu, Anjan Soumyanarayanan, Zhe Yuan, Fei Wang, Xiaohong Xu, and Hyunsoo Yang	
Magnetic field induced ordering in the spin- $\frac{1}{2}$ chiral chain compound $[\text{Cu}(\text{pym})(\text{H}_2\text{O})_4]\text{SiF}_6 \cdot \text{H}_2\text{O}$ (<i>8 pages</i>)	054414
Rebecca Scatena, Alberto Hernández-Melián, Benjamin M. Huddart, Sam Curley, Robert C. Williams, Pascal Manuel, Stephen J. Blundell, Zurab Guguchia, Zachary E. Manson, Jamie L. Manson, G. Timothy Noe, II, John Singleton, Tom Lancaster, Paul A. Goddard, and Roger D. Johnson	

(Continued)

Effect of Mn alloying on magnetic state of Fe in ErFe_2Mn_x Laves-phase compounds: Mössbauer study (11 pages)	054415
S. P. Naumov, V. G. Semenov, N. M. Kleinerman, A. A. Inishev, E. G. Gerasimov, and N. V. Mushnikov	
Quantum selection of order and dynamic properties of the Kitaev-Heisenberg ferromagnet on a triangular lattice (13 pages)	054416
Kaushal K. Kesharpur and Pavel A. Maksimov	
Scaling of diffusion constants in perturbed easy-axis Heisenberg spin chains (11 pages)	054417
Markus Kraft, Mariel Kempa, Jiaozhi Wang, Sourav Nandy, and Robin Steinigeweg	
Interplay of magnetic ordering and charge transport in distorted ScAl_3C_3 -type GdZn_3As_3 (13 pages)	054418
Zhiyu Zhou, Xiyu Chen, Jia-Yi Lu, Junchao Zhang, Xiong Luo, Guang-Han Cao, Shuai Dong, and Zhi-Cheng Wang	
Overhauser dynamic nuclear polarization in alkali metals (23 pages)	054419
Bernardine L. D. Rinkel, Katharina Märker, Marie Juramy, Subhradip Paul, Svetlana Menkin, and Clare P. Grey	
Tunable multiple-state polarized antiferromagnets (12 pages)	054420
Linjun Xie, Xiaofang Chen, and Jingshan Qi	
Disordered ground state in the three-dimensional face-centered frustrated spin- $\frac{5}{2}$ system $\text{MnSn}(\text{OH})_6$ (11 pages)	054421
Kaushick K. Parui, Anton A. Kulbakov, Ellen Häußler, Nikolai S. Pavlovskii, Aswathi Mannathanath Chakkingal, Maxim Avdeev, Roman Gumeniuk, Sergey Granovsky, Alexander Mistonov, Sergei A. Zvyagin, Thomas Doert, Dmytro S. Inosov, and Darren C. Peets	
Dynamic magnetoelectric effect and phase diagram of the polar magnet $\text{Ni}_2\text{MnTeO}_6$ (8 pages)	054422
Yingjie He, Zhongyuan Liu, Na Su, Deshun Hong, and Young Sun	
Direct magnetoelectric coupling from magnetically/ferroelectrically active cation in low-symmetry octahedron (10 pages)	054423
Man Zhang, Yu Shi, Vladimir Koval, Yajun Yue, Zixuan Wu, Yongyi Wu, Yuqing Zhou, Tao Li, Chenglong Jia, and Haixue Yan	
Magnon nonlinear Hall effect in two-dimensional antiferromagnetic insulators (7 pages)	054424
Jinyang Ni, Yuanjun Jin, Quanchao Du, and Guoqing Chang	
Emergence of global receptive fields capturing multipartite quantum correlations (13 pages)	054425
Oleg M. Sotnikov, Ilia A. Iakovlev, Evgeniy O. Kiktenko, Mikhail I. Katsnelson, Aleksey K. Fedorov, and Vladimir V. Mazurenko	
Tuning magnetostructural and magnetocaloric properties of MnNiGe alloys through strategic use of self- and dual doping approaches (17 pages)	054426
Sanat Kumar Adhikari, Riya Roy, Sambhu Charan Das, Rosni Roy, Mohamad Numan, Sabyasachi Pramanick, Kalyanashis De, Oleh Ivashko, Ann-Christin Dippel, Martin v. Zimmermann, Sudipta Bandyopadhyay, Rajib Mondal, and Souvik Chatterjee	
Laser-induced classical and quantum logic functionality in a molecular homodinuclear vanadium Prussian blue analogue (11 pages)	054427
Shangjie Ma, Yan Wu, Shuai Xu, Yiming Zhang, Jing Liu, Chun Li, Georgios Lefkidis, Wolfgang Hübner, and Wei Jin	

(Continued)

Tuning of magnetic anisotropy and metal-insulator transition via heterointerface coupling in $\text{LaFeO}_3/\text{SrRuO}_3$ bilayers (14 pages)	054428
Soumyakanta Panda, Malaya Kumar Das, Rasmi Ranjan Mohapatra, Debashree Nayak, Prahallad Padhan, D. Samal, and N. Mohapatra	
Anomalous magnetism in the 3d-4f double perovskite oxide $\text{Nd}_2\text{FeCrO}_6$ with the Kramers ion Nd^{3+} (12 pages)	054429
Saurav Kumar, Shantanu Majumder, Francesco Congiu, Giuseppe Muscas, H. Luetkens, S. D. Kaushik, Shishir K. Pandey, Stephen L. Lee, Uday Deshpande, Tapati Sarkar, and Soumya Jyoti Ray	
Spin wave resonance driven by surface acoustic wave via spin-rotation coupling in synthetic antiferromagnets (8 pages)	054430
Jiangtao Xue, Huiliang Wu, Shuai Mi, Meihong Liu, Jie Dong, Jianbo Wang, and Qingfang Liu	
☞ Describing stripelike corrugation patterns in C_{60} monolayers grown on Cu(111) using a frustrated spin Hamiltonian (9 pages)	054431
M. Alfonso-Moro, V. Guisset, P. David, J. Coraux, and N. Rougemaille	
Density matrix renormalization group study of domain wall qubits (7 pages)	054432
Guanxiong Qu, Ji Zou, Daniel Loss, and Tomoki Hirose	
Interfacial alloying contributions to the magnetic proximity effect in Pt/dysprosium iron garnet (10 pages)	054433
Miela J. Gross, Javier Herrero-Martin, Sergio Valencia, Alexander J. Grutter, Julie A. Borchers, Yongseong Choi, Gilberto Fabbri, Allison C. Kaczmarek, Alexander E. Kossak, Jackson J. Bauer, Subhajit Kundu, Supriya Ghosh, K. Andre Mkhoyan, Angela Wittmann, and Caroline A. Ross	
Successive ferroelectric orders and magnetoelectric coupling without long-range magnetic order in highly frustrated pyrochlore compounds: $\text{Sm}_2\text{Ti}_{2-x}\text{V}_x\text{O}_7$ (11 pages)	054434
S. Mukherjee, A. Pal, F. Tuzi, A. Polimeni, T. W. Yen, O. Ivashko, S. Majumdar, A. Kumar, and S. Giri	
Approximation theory for Green's functions via the Lanczos algorithm (25 pages)	054435
Gabriele Pinna, Oliver Lunt, and Curt von Keyserlingk	
☞ Superspin renormalization and slow relaxation in random spin systems (25 pages)	054436
Yi J. Zhao, Samuel J. Garratt, and Joel E. Moore	
Nature of magnetic phase transitions and spin-driven ferroelectricity in BaHoFeO_4 (15 pages)	054437
N. T. Dang, D. P. Kozlenko, T. P. Hoang, A. V. Rutkauskas, T. N. Vershinina, S. E. Kichanov, D. T. Khan, L. T. P. Thao, T. L. Phan, N. Tran, E. V. Dyuzheva-Maltseva, C. Kadlec, F. Kadlec, T. Kmječ, J. Kohout, V. Chlan, and M. H. Phan	
Using surface plasmons to detect spin inertia (7 pages)	054438
H. Y. Yuan	
Crystalline electric field excitations in the Weyl semimetals RAlSi ($R = \text{Ce, Pr, Nd}$) (10 pages)	054439
Lin Yang, Yili Sun, Xiutong Deng, Weizheng Cao, Xiaoyan Ma, Yinguo Xiao, Zhentao Wang, Ze Hu, Xiaowen Hao, Yuan Yuan, Zecong Qin, Wei Luo, Qingyong Ren, Xin Tong, Mohamed Aouane, Manh Duc Le, Youguo Shi, Yanpeng Qi, Devashibhai Adroja, and Huiqian Luo	
Unified magnetoelectric mechanism for spin splitting in magnets (8 pages)	054440
Carlos Mera Acosta	

(Continued)

Universal intrinsic orbital dynamics from Berry curvature in electronic two-band systems (<i>8 pages</i>)	054441
Jongjun M. Lee	
Noncollinear $3k$ -type antiferromagnetic ground state and multipolar exchange interactions in uranium nitride (<i>15 pages</i>)	054442
Ge Li, Nanshu Liu, Ruizhi Qiu, and Hongkuan Yuan	
☞ Dominance of the orbital Hall effect over spin in transition metal heterostructures (<i>9 pages</i>)	054443
J. L. Costa, E. Santos, J. B. S. Mendes, and A. Azevedo	
Constructing emergent $U(1)$ symmetries in the Γ' model (<i>14 pages</i>)	054444
Sagar Ramchandani, Simon Trebst, and Ciarán Hickey	
Yang-Lee zeros of two-dimensional nearest-neighbor antiferromagnetic Ising models: A numerical linked cluster expansion study (<i>12 pages</i>)	054445
Mahmoud Abdelshafy and Muhammad Sedik	
Anisotropy at twin interfaces in RT_{12} (R = rare earth; T = transition metal) magnets (<i>11 pages</i>)	054446
Christopher E. Patrick	
Characterizing $S = \frac{3}{2}$ Affleck-Kennedy-Lieb-Tasaki Hamiltonian with scanning tunneling spectroscopy (<i>11 pages</i>)	054447
M. Ferri-Cortés, J. C. G. Henriques, and J. Fernández-Rossier	
Coupling between magnetism and transport properties in monoclinic $\text{Fe}_{6.10\pm\delta}\text{Ge}_5$ single crystals (<i>7 pages</i>)	054448
Liuyi Pan, Anni Hu, Ye Chen, Yi Gong, Yao Lv, Jiawen Zhang, Kunpeng Su, Ping Huang, Yu Song, Yu Liu, and Lin Yang	
Weyl-mediated Ruderman-Kittel-Kasuya-Yosida interaction revisited: Imaginary-time formalism and finite temperature effects (<i>11 pages</i>)	054449
Mengyao Zhou, Hao-Ran Chang (张浩然), Lijun Yang, and Long Liang	
Superfluidity and superconductivity	
Giant noise-to-current ratio as a signature of dispersing Majorana edge modes (<i>12 pages</i>)	054501
Leo Katayama, Andreas P. Schnyder, Yasuhiro Asano, and Satoshi Ikegaya	
Pressure-induced robust superconductivity in layered binary monochalcogenides GeS under extreme compression up to 200 GPa (<i>10 pages</i>)	054502
Chao Wang, Haoran Yu, Xinrui Zhang, Chutong Zhang, Yunxian Liu, Bingchao Yang, Xiangzhuo Xing, Ruilong Yang, Xin Chen, Yongsheng Zhang, and Xiaobing Liu	
Interplay between altermagnetism and topological superconductivity on an unconventional superconducting platform (<i>10 pages</i>)	054503
Pritam Chatterjee and Vladimir Juričić	
Enhancement of the superconducting transition temperature due to multiband effect in the topological nodal-line semimetal $\text{Pb}_{1-x}\text{Sn}_x\text{TaSe}_2$ (<i>9 pages</i>)	054504
K. Kumarasinghe, A. Rahman, M. Tomlinson, D. Le, F. Joshua, L. Zhai, and Y. Nakajima	
Field-free Josephson diode effect in an Ising-superconductor/altermagnet/Ising-superconductor Josephson junction (<i>15 pages</i>)	054505
Arindam Boruah, Saumen Acharjee, and Prasanta Kumar Saikia	

(Continued)

Effective perpendicular electric field as a probe for interlayer pairing in ambient-pressure superconducting $\text{La}_{2.85}\text{Pr}_{0.15}\text{Ni}_2\text{O}_7$ thin films (<i>9 pages</i>)	054506
Junkang Huang and Tao Zhou	
Symmetry-induced pairing in dark excitonic condensates at finite temperature (<i>7 pages</i>)	054507
Adham Alkady and Anatoly Kuklov	
Ground-state critical hopping amplitude scaling in two- and three-dimensional Bose-Hubbard models with large filling factors (<i>12 pages</i>)	054508
T. K. Kopeć	
Controllable Josephson diode effect, $0-\pi$ transition, and switch effect in superconductor/two-dimensional Weyl nodal line semimetal/superconductor junctions (<i>10 pages</i>)	054509
Wen-Ting Liu, Shu-Chang Zhao, Qiang Cheng, and Qing-Feng Sun	
Nodal superconducting gap structure and topological surface states of UTe_2 (<i>13 pages</i>)	054510
Hans Christiansen, Max Geier, Brian M. Andersen, and Andreas Kreisel	
Quantum geometric origin of the Meissner effect and superfluid weight marker (<i>9 pages</i>)	054511
David Porlles and Wei Chen	
Role of hydrogen impurities in the high- T_c superconductivity of infinite-layer nickelates (<i>7 pages</i>)	054512
Chen Zhang, Cai-Xin Zhang, Yu Cui, Ruyue Cao, Su-Huai Wei, and Hui-Xiong Deng	
High-temperature superconductivity in Th-B-H systems via nonclathrate design (<i>10 pages</i>)	054513
Zengguang Zhou, Wenwen Cui, Shicong Ding, Weishuo Xu, Jian Hao, Jingming Shi, Artur P. Durajski, Hanyu Liu, and Yinwei Li	
Photon-instanton scattering in a superconducting circuit: Beyond the very high impedance regime (<i>15 pages</i>)	054514
Amir Burshtein, David Shulitsky, Roman Kuzmin, Vladimir E. Manucharyan, and Moshe Goldstein	
One-dimensional linear Nb chains driving superconductivity in the pressure-induced $Pnma$ phase of NbO_2 (<i>10 pages</i>)	054515
Fei Li and Wenjing Li	
High-temperature superconductivity in quinary clathrate hydrides under pressure (<i>9 pages</i>)	054516
Peiyu Zhang, Hongyi Guan, Hefei Li, Xin Zhong, Russell J. Hemley, and Hanyu Liu	
Landau-Zener-Stückelberg spectroscopy of a fluxonium quantum circuit (<i>14 pages</i>)	054517
Valentín Reparaz, María José Sánchez, Maximiliano Gatto, Daniel Dominguez, and Leandro Tosi	