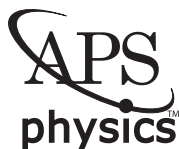


ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Pressure-stabilized structures of water-neon system under high pressure (*8 pages*) 054101
Jurong Zhang, Sen Shao, and Hanyu Liu
- Direct measurement of the scattering cross sections of liquid ortho-deuterium for ultracold neutrons
and comparison with model calculations (*6 pages*) 054102
Stefan Döge, Jürgen Hingerl, Winfried Petry, and Christoph Morkel
- Anharmonic thermodynamic properties and phase boundary across the postperovskite transition
in MgSiO_3 (*9 pages*) 054103
Zhen Zhang and Renata M. Wentzcovitch
- Anomalous ferroelectricity and double-negative effects in bilayer hexagonal boron nitride (*8 pages*) 054104
Wen Jiang, Chang Liu, Xiaonan Ma, Xing Yu, Shunbo Hu, Xi Li, Lee A. Burton, Yu Liu, Yangyang Chen,
Pan Guo, Xiangyang Kong, Laurent Bellaiche, and Wei Ren
- Bond-order potential for the surface-terminated titanium carbide MXene monolayers $\text{Ti}_{n+1}\text{C}_n\text{T}_x$
($n = 1, 2$, or 3 ; $T = -\text{O}$ or $-\text{F}$) (*12 pages*) 054105
Gabriel Plummer, Siby Thomas, Mohsen Asle Zaeem, and Garritt J. Tucker
- Stability and distortion of fcc LaH_{10} with path-integral molecular dynamics (*8 pages*) 054106
Kevin K. Ly and David M. Ceperley
- Absence of precursor incommensurate charge order in electronic nematic $\text{Ba}_{0.35}\text{Sr}_{0.65}\text{Ni}_2\text{As}_2$ (*4 pages*) 054107
John Collini, Sangjun Lee, Stella X.-L. Sun, Chris Eckberg, Daniel J. Campbell,
Peter Abbamonte, and Johnpierre Paglione
- Using neural network potentials to study defect formation and phonon properties of nitrogen vacancies
with multiple charge states in GaN (*6 pages*) 054108
Koji Shimizu, Ying Dou, Elvis F. Arguëlles, Takumi Moriya, Emi Minamitani, and Satoshi Watanabe
- Hydrogen phase-IV characterization by full account of quantum anharmonicity (*8 pages*) 054109
Tommaso Morresi, Rodolphe Vuilleumier, and Michele Casula
- Ramsey envelope modulation in NV diamond magnetometry (*9 pages*) 054110
Jner Tzern Oon, Jiashen Tang, Connor A. Hart, Kevin S. Olsson, Matthew J. Turner,
Jennifer M. Schloss, and Ronald L. Walsworth
- Phase transition of potassium atoms on silicene-(3×3)/Ag(111) (*10 pages*) 054111
Cong Wang, Huimin Wang, Wenda Yao, Sheng Meng, Jinglan Qiu, and Ying Liu



Exceptional strain strengthening and tuning of mechanical properties of TiN (<i>12 pages</i>)	054112
Chang Liu, Xinxin Gao, Kan Zhang, Weitao Zheng, and Changfeng Chen	
Long-wavelength phonon dynamics in incommensurate $\text{Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ crystals by Brillouin light scattering spectroscopy (<i>8 pages</i>)	054113
B. D. E. McNiven, J. P. F. LeBlanc, and G. T. Andrews	
Humble planar defects in SiGe nanopillars (<i>5 pages</i>)	054114
Hongbin Yang, Shang Ren, Sobhit Singh, Emily M. Turner, Kevin S. Jones, Philip E. Batson, David Vanderbilt, and Eric Garfunkel	
Inhomogeneous, disordered, and partially ordered systems	
Multipartite entanglement in the random Ising chain (<i>7 pages</i>)	054201
Jay S. Zou, Helen S. Ansell, and István A. Kovács	
Structural properties of local integrals of motion across the many-body localization transition via a fast and efficient method for their construction (<i>9 pages</i>)	054202
Safa Adami, Mohsen Amini, and Morteza Soltani	
Scaling of the Fock-space propagator and multifractality across the many-body localization transition (<i>10 pages</i>)	054203
Jagannath Sutradhar, Soumi Ghosh, Sthitadhi Roy, David E. Logan, Subroto Mukerjee, and Sumilan Banerjee	
Rational approximations of quasiperiodicity via projected Green's functions (<i>18 pages</i>)	054204
Dan S. Borgnia, Ashvin Vishwanath, and Robert-Jan Slager	
☞ Capacitive probing of electronic phase separation in an oxide two-dimensional electron system (<i>12 pages</i>)	054205
Sander Smink, Hans Boschker, Alexander Brinkman, Jochen Mannhart, and Hans Hilgenkamp	
Short-range order in the quasiliquid phases of alkane substructures within aperiodic urea inclusion crystals (<i>8 pages</i>)	054206
A. Simonov, P. Rabiller, C. Mariette, L. Guérin, A. Bosak, A. Popov, and B. Toudic	
Driving a pure spin current from nuclear-polarization gradients (<i>5 pages</i>)	054207
N. J. Harmon and M. E. Flatté	
Sensitivity of (multi)fractal eigenstates to a perturbation of the Hamiltonian (<i>15 pages</i>)	054208
M. A. Skvortsov, M. Amini, and V. E. Kravtsov	
Interplay between edge states and charge density wave order in the Falicov-Kimball model on a Haldane ribbon (<i>9 pages</i>)	054209
Jan Skolimowski	
Persistent homology analysis of a generalized Aubry-André-Harper model (<i>9 pages</i>)	054210
Yu He, Shiqi Xia, Dimitris G. Angelakis, Daohong Song, Zhigang Chen, and Daniel Leykam	
Dynamics, dynamical systems, lattice effects:	
Left-handed optical torque on dipolar plasmonic nanoparticles induced by Fano-like resonance (<i>11 pages</i>)	054301
Huajin Chen, Lv Feng, Jiangnan Ma, Chenghua Liang, Zhifang Lin, and Hongxia Zheng	
Extreme in-plane phonon blocking in simple chainlike crystals (<i>7 pages</i>)	054302
Zezhu Zeng, Cunzhi Zhang, Niuchang Ouyang, and Yue Chen	

(Continued)

Topological edge-state contributions to high-order harmonic generation in finite flakes (<i>8 pages</i>)	054303
Christoph Jürß and Dieter Bauer	
<i>Ab initio</i> study of shock-compressed copper (<i>12 pages</i>)	054304
Maximilian Schörner, Bastian B. L. Witte, Andrew D. Baczewski, Attila Cangi, and Ronald Redmer	
Coexistence of charge-2 Dirac and Weyl phonons in chiral space groups (<i>6 pages</i>)	054306
Guang Liu, Zhenqiao Huang, Zhongjia Chen, Yuanjun Jin, Changchun He, and Hu Xu	
Driving-induced multiple $\mathcal{PT}$ -symmetry breaking transitions and reentrant localization transitions in non-Hermitian Floquet quasicrystals (<i>12 pages</i>)	054307
Longwen Zhou and Wenqian Han	
Anomaly in the dynamical quantum phase transition in a non-Hermitian system with extended gapless phases (<i>11 pages</i>)	054308
Debashish Mondal and Tanay Nag	
Resonant energy scales and local observables in the many-body localized phase (<i>10 pages</i>)	054309
Samuel J. Garratt and Sthitadhi Roy	
Bosonic fractional quantum Hall conductance in shaken honeycomb optical lattices without flat bands (<i>12 pages</i>)	054310
Shiwan Miao, Zhongchi Zhang, Yajuan Zhao, Zihan Zhao, Huaichuan Wang, and Jiazhong Hu	
Coherent charge carrier dynamics in the presence of thermal lattice vibrations (<i>25 pages</i>)	054311
Donghwan Kim, Alhun Aydin, Alvar Daza, Kobra N. Avanaki, Joonas Keski-Rahkonen, and Eric J. Heller	
Localization, multifractality, and many-body localization in periodically kicked quasiperiodic lattices (<i>11 pages</i>)	054312
Yu Zhang, Bozhen Zhou, Haiping Hu, and Shu Chen	
Theoretical analysis of FMR-driven spin pumping current and its properties via the self-consistent harmonic approximation (<i>11 pages</i>)	054313
A. R. Moura	
Absence of thermalization of free systems coupled to gapped interacting reservoirs (<i>8 pages</i>)	054314
Marko Ljubotina, Dibyendu Roy, and Tomaž Prosen	
Magnetism	
Origin of noncollinear magnetization coupling across RuX layers (<i>7 pages</i>)	054401
Claas Abert, Sabri Koraltan, Florian Bruckner, Florian Slanovc, Juliana Besler, Pavlo Omelchenko, Erol Girt, and Dieter Suess	
Lee-Yang theory of the two-dimensional quantum Ising model (<i>10 pages</i>)	054402
Pascal M. Vecsei, Jose L. Lado, and Christian Flindt	
Higher-order topological phases of magnons protected by magnetic crystalline symmetries (<i>6 pages</i>)	054403
Yun-Mei Li, Ya-Jie Wu, Xi-Wang Luo, Yongwei Huang, and Kai Chang	
Control and tunability of magnetic bubble states in multilayers with strong perpendicular magnetic anisotropy at ambient conditions (<i>10 pages</i>)	054404
Ruslan Salikhov, Fabian Samad, Sri Sai Phani Kanth Arekapudi, Rico Ehrler, Jürgen Lindner, Nikolai S. Kiselev, and Olav Hellwig	

(Continued)

Damping in yttrium iron garnet films with interface (7 pages)	054405
Ravinder Kumar, B. Samantaray, Shubhankar Das, Kishori Lal, D. Samal, and Z. Hossain	
Anisotropy of magnetoelastic properties in epitaxial $\text{Co}_2\text{Fe}_x\text{Mn}_{1-x}\text{Si}$ Heusler alloy thin films (11 pages)	054406
A. Nabiałek, O. Chumak, A. Lynnyk, J. Z. Domagała, A. Pacewicz, B. Salski, J. Krupka, T. Yamamoto, T. Seki, K. Takanashi, L. T. Baczewski, and H. Szymczak	
Observation of topological $\mathbb{Z}_2$ vortex fluctuations in the frustrated Heisenberg magnet NaCrO_2 (8 pages)	054407
K. Tomiyasu, Y. P. Mizuta, M. Matsuura, K. Aoyama, and H. Kawamura	
First- and second-order magneto-optical effects and intrinsically anomalous transport in the two-dimensional van der Waals layered magnets CrXY ($X = \text{S, Se, Te}$; $Y = \text{Cl, Br, I}$) (18 pages)	054408
Xiuxian Yang, Ping Yang, Xiaodong Zhou, Wanxiang Feng, and Yugui Yao	
Suppression of ferromagnetism and influence of disorder in silicon-substituted CeRh_6Ge_4 (7 pages)	054409
Y. J. Zhang, Z. Y. Nie, R. Li, Y. C. Li, D. L. Yang, B. Shen, Y. Chen, F. Du, S. S. Luo, H. Su, R. Shi, S. Y. Wang, M. Nicklas, F. Steglich, M. Smidman, and H. Q. Yuan	
Spin correlations in the frustrated ferro-antiferromagnet $\text{SrZnVO}(\text{PO}_4)_2$ near saturation (8 pages)	054410
F. Landolt, K. Povarov, Z. Yan, S. Gvasaliya, E. Ressouche, S. Raymond, V. O. Garlea, and A. Zheludev	
Magnetization tunable Weyl states in EuB_6 (11 pages)	054411
Jian Yuan, Xianbiao Shi, Hao Su, Xin Zhang, Xia Wang, Na Yu, Zhiqiang Zou, Weiwei Zhao, Jianpeng Liu, and Yanfeng Guo	
Dzyaloshinskii-Moriya interaction induced magnetoelectric coupling in a tetrahedral molecular spin-frustrated system (8 pages)	054412
Jie-Xiang Yu, Jia Chen, Neil Sullivan, and Hai-Ping Cheng	
 Weakly pinned skyrmion liquid in a magnetic heterostructure (11 pages)	054413
Rhodri Mansell, Yifan Zhou, Kassius Kohvakka, See-Chen Ying, Ken R. Elder, Enzo Granato, Tapio Ala-Nissila, and Sebastiaan van Dijken	
Nonlinear dynamics of the topological helicity wave in a frustrated skyrmion string (8 pages)	054414
Jing Xia, Xichao Zhang, Xiaoxi Liu, Yan Zhou, and Motohiko Ezawa	
Deformation of the triangular spin- $\frac{1}{2}$ lattice in $\text{Na}_2\text{SrCo}(\text{PO}_4)_2$ (12 pages)	054415
Vera P. Bader, Jan Langmann, Philipp Gegenwart, and Alexander A. Tsirlin	
Temperature dependence of the local electromagnetic field at the Fe site in multiferroic bismuth ferrite (15 pages)	054416
T. T. Dang, J. Schell, A. G. Boa, D. Lewin, G. Marschick, A. Dubey, M. Escobar-Castillo, C. Noll, R. Beck, Dmitry V. Zyabkin, K. Glukhov, I. C. J. Yap, A. Mokhles Gerami, and D. C. Lupascu	
Theory of ultrasound propagation in LuCo_3 near the low-spin-high-spin crossover (12 pages)	054417
A. A. Tereshchenko, A. S. Ovchinnikov, D. I. Gorbunov, and D. S. Neznakhin	
Voltage-driven exchange resonance achieving 100% mechanical efficiency (11 pages)	054418
Jun-Yu Tang and Ran Cheng	
Controllable quantum phase transition in a double-cavity magnonic system (10 pages)	054419
Yan Qin, Sheng-Chang Li, Ke Li, and Juan-Juan Song	
A-type antiferromagnetic order in the Zintl-phase insulator EuZn_2P_2 (12 pages)	054420
Tanya Berry, Veronica J. Stewart, Benjamin W. Y. Redemann, Chris Lygouras, Nicodemos Varnava, David Vanderbilt, and Tyrel M. McQueen	

(Continued)

Influence of finite-size effects on the Curie temperature of $L1_0$ -FePt (8 pages)	054421
Nguyen Thanh Binh, Sergiu Ruta, Ondrej Hovorka, Richard F. L. Evans, and Roy W. Chantrell	
Microscopic origin of coercivity enhancement by dysprosium substitution into neodymium permanent magnets (10 pages)	054422
Masamichi Nishino, Hiroshi Hayasaka, and Seiji Miyashita	
Geometric integration of classical spin dynamics via a mean-field Schrödinger equation (11 pages)	054423
David Dahlbom, Hao Zhang, Cole Miles, Xiaojian Bai, Cristian D. Batista, and Kipton Barros	
Temperature-dependent spin-resolved electronic structure of EuO thin films (9 pages)	054424
Tristan Heider, Timm Gerber, Okan Köksal, Markus Eschbach, Ewa Młyńczak, Patrick Lömker, Pika Gospodaric, Mathias Gehlmann, Moritz Plötzing, Rossitza Pentcheva, Lukasz Plucinski, Claus M. Schneider, and Martina Müller	
Bistability in dissipatively coupled cavity magnonics (11 pages)	054425
H. Pan, Y. Yang, Z. H. An, and C.-M. Hu	
Dzyaloshinskii-Moriya interaction and magnetic skyrmions induced by curvature (8 pages)	054426
Yonglong Ga, Qirui Cui, Jinghua Liang, Dongxing Yu, Yingmei Zhu, Liming Wang, and Hongxin Yang	
Anomalous spin dynamics in a two-dimensional magnet induced by anisotropic critical fluctuations (7 pages)	054427
Zefang Li, Dong-Hong Xu, Xue Li, Hai-Jun Liao, Xuekui Xi, Yi-Cong Yu, and Wenhong Wang	
Theory of inertial spin dynamics in anisotropic ferromagnets (10 pages)	054428
Mikhail Cherkasskii, Igor Barsukov, Ritwik Mondal, Michael Farle, and Anna Semisalova	
Spin nematic ordering in the spin-1 chain system (10 pages)	054429
A. A. Zvyagin and V. V. Slavin	
Optically excited spin dynamics of thermally metastable skyrmions in $\text{Fe}_{0.75}\text{Co}_{0.25}\text{Si}$ (7 pages)	054430
J. Kalin, S. Sievers, H. Füser, H. W. Schumacher, M. Bieler, F. García-Sánchez, A. Bauer, and C. Pfleiderer	
Excitonic transverse and amplitude fluctuations in noncollinear and charge-ordered $\text{RbFe}^{2+}\text{Fe}^{3+}\text{F}_6$ (15 pages)	054431
H. Lane, M. Songvilay, R. A. Ewings, and C. Stock	
Domain-wall dynamics driven by thermal and electrical spin-transfer torque (11 pages)	054432
Ya-Ru Wang, Chao Yang, Zheng-Chuan Wang, and Gang Su	
Micromagnetics of magnetic chemical modulations in soft-magnetic cylindrical nanowires (11 pages)	054433
L. Álvaro-Gómez, S. Ruiz-Gómez, C. Fernández-González, M. Schöbitz, N. Mille, J. Hurst, D. Tiwari, A. De Riz, I. M. Andersen, J. Bachmann, L. Cagnon, M. Foerster, L. Aballe, R. Belkhou, J.-C. Toussaint, C. Thirion, A. Masseboeuf, D. Gusakova, L. Pérez, and O. Fruchart	
Interplay of itinerant electrons and Ising moments in a hybrid honeycomb quantum magnet TmNi_3Al_9 (8 pages)	054434
H. Ge, C. J. Huang, Q. Zhang, N. Zhao, J. Yang, L. Wang, Y. Fu, L. Zhang, Z. M. Song, T. T. Li, F. Ding, J. B. Xu, Y. F. Zhang, X. Tong, S. M. Wang, J. W. Mei, A. Podlesnyak, L. S. Wu, Gang Chen, and J. M. Sheng	
Tailoring optical excitation to control magnetic skyrmion nucleation (10 pages)	054435
L.-M. Kern, B. Pfau, M. Schneider, K. Gerlinger, V. Deinhart, S. Wittrock, T. Sidiropoulos, D. Engel, I. Will, C. M. Günther, K. Litzius, S. Wintz, M. Weigand, F. Büttner, and S. Eisebitt	

(Continued)

Metamagnetism and tricritical behavior in the Kondo lattice model (7 pages)	054436
B. H. Bernhard	
Spin ice in a general applied magnetic field: Kasteleyn transition, magnetic torque, and rotational magnetocaloric effect (16 pages)	054437
Mark Potts and Owen Benton	
Quantum dimer model on fullerenes: Resonance, scarring, and confinement (9 pages)	054438
R. Krishna Prahladh and R. Ganesh	
Superfluidity and superconductivity	
Boiling and cavitation caused by transient heat transfer in superfluid helium-4 (8 pages)	054501
Hamid Sanavandi, Mikai Hulse, Shiran Bao, Yuan Tang, and Wei Guo	
Theory of superconductivity mediated by topological phonons (6 pages)	054502
Daniele Di Miceli, Chandan Setty, and Alessio Zaccone	
Full superconducting gap in the candidate topological superconductor $\text{In}_{1-x}\text{Pb}_x\text{Te}$ for $x = 0.2$ (7 pages)	054503
M. P. Smylie, Kaya Kobayashi, J. Z. Dans, H. Hebbeker, R. Chapai, W.-K. Kwok, and U. Welp	
Quantum fluctuations in electrical multiport linear systems (10 pages)	054504
A. Parra-Rodriguez and I. L. Egusquiza	
Critical fields of superconductors with magnetic impurities (6 pages)	054505
V. G. Kogan and R. Prozorov	
Critical current density and vortex phase diagram in the superconductor $\text{Sn}_{0.55}\text{In}_{0.45}\text{Te}$ (9 pages)	054506
Yiming Wang, Mingtao Li, Cuiying Pei, Lingling Gao, Kejun Bu, Dong Wang, Xuqiang Liu, Limin Yan, Jia Qu, Nana Li, Bihan Wang, Yifei Fang, Yanpeng Qi, and Wenge Yang	
Probing emergent QED in quantum spin ice via Raman scattering of phonons: Shallow inelastic scattering and pair production (27 pages)	054507
Arnab Seth, Subhro Bhattacharjee, and Roderich Moessner	
Absence of nematic instability in LiFeAs (5 pages)	054508
Michael Wissmann, Federico Caglieris, Xiaochen Hong, Saicharan Aswartham, Anna Vorobyova, Igor Morozov, Bernd Büchner, and Christian Hess	
Enhanced pairing mechanism in cuprate-type crystals (12 pages)	054509
Maximilian Duell, Christian Hainzl, and Eman Hamza	
Doping-driven antiferromagnetic insulator-superconductor transition: A quantum Monte Carlo study (8 pages)	054510
Tianxing Ma, Da Wang, and Congjun Wu	
Topological superconductivity in a two-dimensional Weyl SSH model (7 pages)	054511
Peter Rosenberg and Efstratios Manousakis	
Influence of impurities on the electronic structure in cuprate superconductors (16 pages)	054512
Minghuan Zeng, Xiang Li, Yongjun Wang, and Shiping Feng	
Interference phenomena in Josephson junctions with ferromagnetic bilayers: Spin-triplet correlations and resonances (8 pages)	054513
Danilo Nikolić, Mihajlo Vanević, Alexander I. Buzdin, and Zoran Radović	

(Continued)

Topological superconductivity in Sn/Si(111) driven by nonlocal Coulomb interactions (<i>11 pages</i>)	054514
Mehdi Biderang, Mohammad-Hossein Zare, and Jesko Sirker	
Strange metal electrodynamics across the phase diagram of $\text{Bi}_{2-x}\text{Pb}_x\text{Sr}_{2-y}\text{La}_y\text{CuO}_{6+\delta}$ cuprates (<i>19 pages</i>)	054515
Erik van Heumen, Xuanbo Feng (馮翹博), Silvia Cassanelli, Linda Neubrand, Lennart de Jager, Maarten Berben, Yingkai Huang, Takeshi Kondo, Tsunehiro Takeuchi, and Jan Zaanen	
Multipole-fluctuation pairing mechanism of $d_{x^2-y^2} + ig$ superconductivity in Sr_2RuO_4 (<i>15 pages</i>)	054516
Yutao Sheng, Yu Li, and Yi-feng Yang	
Magneto-topological transitions in multicomponent superconductors (<i>10 pages</i>)	054517
Yuriy Yerin, Stefan-Ludwig Drechsler, Mario Cuoco, and Caterina Petrillo	
☞ Breakdown of the Migdal-Eliashberg theory and a theory of lattice-fermionic superfluidity (<i>22 pages</i>)	054518
Emil A. Yuzbashyan and Boris L. Altshuler	
Pressure-stabilized superconducting electride Li_5C (<i>7 pages</i>)	054519
Qinfang Wang, Wenwen Cui, Kun Gao, Ju Chen, Tingting Gu, Meixu Liu, Jian Hao, Jingming Shi, and Yinwei Li	
☞ Local imaging of diamagnetism in proximity-coupled niobium nanoisland arrays on gold thin films (<i>8 pages</i>)	054521
Logan Bishop-Van Horn, Irene P. Zhang, Emily N. Waite, Ian Mondragon-Shem, Scott Jensen, Junseok Oh, Tom Lippman, Malcolm Durkin, Taylor L. Hughes, Nadya Mason, Kathryn A. Moler, and Ilya Sochnikov	
☞ Competition between spin ordering and superconductivity near the pseudogap boundary in $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$: Insights from NMR (<i>20 pages</i>)	054522
I. Vinograd, R. Zhou, H. Mayaffre, S. Krämer, S. K. Ramakrishna, A. P. Reyes, T. Kurosawa, N. Momono, M. Oda, S. Komiya, S. Ono, M. Horio, J. Chang, and M.-H. Julien	