

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Stabilization of metallic, excitonic-insulator, and superionic phases in helium–rare-gas compounds at subterapascal pressures (*14 pages*) 054101
Cong Liu, Jordi Boronat, and Claudio Cazorla
- Bridging theory and experiment in materials discovery: Machine-learning-assisted prediction of synthesizable structures (*14 pages*) 054102
Yu Xin, Peng Liu, Zhuohang Xie, Wenhui Mi, Pengyue Gao, Hong Jian Zhao, Jian Lv, Yanchao Wang, and Yanming Ma
- Mechanism of the wurtzite to rocksalt phase transformation in cadmium sulfide single crystals shock compressed along the *c*-axis to elastic impact stresses of ~ 5 GPa (*11 pages*) 054103
M. D. Knudson, N. P. Brown, and J. M. D. Lane
- Synergistic electronic structure and lattice dynamics mechanisms for hydrogen diffusion in nickel oxide (*24 pages*) 054104
Jin-Tao Ye and Liang-Feng Huang
- Tetragonal Fe₂O: The stable iron oxide at Earth's core conditions (*8 pages*) 054107
Junjie Jiang, Zhen Zhang, Tongqi Wen, Renata M. Wentzcovitch, and Yang Sun
- Two-thirds rule of glass physics implies universalities in crystal melting (*7 pages*) 054108
Peter Lunkenheimer, Konrad Samwer, and Alois Loidl
- Controllable folding of graphene induced by localized tension (*9 pages*) 054109
Pan Shi, Yao Chen, Jingyi Zhang, Jian Feng, and Jie Yang
- First-principles calculations of relaxation volumes and stability of charged defects in magnesium oxide at high pressure (*14 pages*) 054110
Caroline Traisnel, Fabien Bruneval, Jean-Paul Crocombette, and Philippe Carrez
- Topological textures in Zr-substituted barium titanate (*12 pages*) 054111
Florian Mayer
- First-principles prediction of rare-earth and actinide aluminides with graphenelike aluminum layers at ambient pressure (*9 pages*) 054112
Xinyi Gu, Shicong Ding, Jian Hao, Jingming Shi, Wenwen Cui, and Yinwei Li
- Spin-triplet Ga-vacancy defects in two-dimensional GaN: A platform for solid-state qubits (*9 pages*) 054113
Manqi You, Chaoyu He, Gencai Guo, Chunxiao Zhang, and Jianxin Zhong



(Continued)



2469-9950(20260201)113:5;1-F

Anisotropy-induced acoustic unidirectional guided resonances (<i>9 pages</i>)	054114
Sheng Zhang, Xinwu Yu, Manzhu Ke, and Fengming Liu	
Impact of initial network topology on the pressure-induced structural evolution of lithium metasilicate Li_2SiO_3 (<i>10 pages</i>)	054115
Emmanuelle de Clermont Gallerande, Christoph J. Sahle, Huiyao Kuang, John S. Tse, and Gérald Lelong	
Inhomogeneous, disordered, and partially ordered systems	
Topological marker in three dimensions based on kernel polynomial method (<i>7 pages</i>)	054201
Ranadeep Roy and Wei Chen	
Interface and structural rearrangement during crystal growth from molecular dynamics simulations (<i>12 pages</i>) . . .	054202
Yajiao Zhang, Matthew E. McKenzie, Jingping Yan, Feimei Wang, Jiawei Liu, Boyuan Li, Fangling Jiang, Qi Zhang, Qiang Fu, Lu Deng, and Lili Hu	
Statistical study of atomic, electronic, and mechanical properties of amorphous graphene (<i>9 pages</i>)	054203
Jun Chai, Mingping He, Hangjia Shen, Pan Liu, Jia Zhang, and Yi-Yang Sun	
Dynamics, dynamical systems, lattice effects:	
Dissipation-induced Majarona 0- and π -modes in a driven Rashba nanowire (<i>13 pages</i>)	054301
Koustabh Gogoi, Tanay Nag, and Arnob Kumar Ghosh	
Revealing effects of the local dimension on a variable-range interacting model by connecting Lieb-Robinson bounds and multipartite entanglement (<i>16 pages</i>)	054302
Keshav Das Agarwal, Debkanta Ghosh, Pritam Halder, and Aditi Sen(De)	
 Information dynamics in decohered quantum memory with repeated syndrome measurements (<i>24 pages</i>)	054303
Jacob Hauser, Yimu Bao, Shengqi Sang, Ali Lavasani, Utkarsh Agrawal, and Matthew P. A. Fisher	
Destruction and recovery of the entanglement entropy of a many-body quantum system after a single measurement (<i>21 pages</i>)	054304
Bo Fan (范波), Can Yin (殷灿), and Antonio M. García-García	
Mixed-state learnability transitions in monitored noisy quantum dynamics (<i>6 pages</i>)	054305
Hansveer Singh, Romain Vasseur, Andrew C. Potter, and Sarang Gopalakrishnan	
Universal interaction-based manipulation of quantum synchronization in spin oscillator networks (<i>13 pages</i>)	054306
Shuo Dai, Zeqing Wang, Liang-Liang Wan, Weidong Li, Augusto Smerzi, Ran Qi, and Jianwen Jie	
Quantum dynamics in lattices in the presence of bulk dephasing and a localized source (<i>11 pages</i>)	054307
Tamoghna Ray, Katha Ganguly, Dario Poletti, Manas Kulkarni, and Bijay Kumar Agarwalla	
Eigenstate thermalization hypothesis for off-diagonal matrix elements in integrable spin chains (<i>15 pages</i>)	054308
Federico Rottoli and Vincenzo Alba	
 Investigating anharmonicities in polarization-orientation Raman spectra of acene crystals with machine learning (<i>16 pages</i>)	054309
Paolo Lazzaroni, Shubham Sharma, and Mariana Rossi	
Additional quantum many-body scars of the spin-1 XY model with Fock-space cages and commutant algebras (<i>29 pages</i>)	054310
Sashikanta Mohapatra, Sanjay Moudgalya, and Ajit C. Balram	

(Continued)

Magnetism

Alignment-dependent gapless chiral split magnons in altermagnetic domain walls (8 pages)	054401
Zhaozhuo Zeng, Zhejunyu Jin, and Peng Yan	
Scaling for the anomalous Hall effect: Opposite roles of Fermi sea and Fermi surface (6 pages)	054402
Xiaona Di and Weiwei Lin	
Phonon-enhanced optical spin conductivity and spin-splitter effect in altermagnets (7 pages)	054403
Erik Wegner Hodt, Alireza Qaiumzadeh, and Jacob Linder	
Magnetic phase diagram of magnetocaloric TmFeO_3 (9 pages)	054404
Kirill I. Tkachenko, Piotr Fabrykiewicz, Aleksandr K. Ovsianikov, Martin Meven, Oleg V. Usmanov, Igor A. Zobkalo, Kirill A. Shaykhutdinov, Konstantin Yu. Terentjev, Sergey V. Semenov, Eric Ressouche, and Ketty Beauvois	
Detecting underlying symmetry-protected topological phases via strange correlators and edge engineering (10 pages)	054405
Zhe Wang, Longye Lu, Shang-Qiang Ning, Zenan Liu, Yan-Cheng Wang, Zheng Yan, and Wenan Guo	
Giant nonrelativistic spin and charge Nernst effect in anisotropic ferromagnets (10 pages)	054406
Jianting Dong, Kun Wu, Meng Zhu, Xinlu Li, Fanxing Zheng, and Jia Zhang	
 Ultrafast switching of antiferromagnetic order by field-derivative torque (7 pages)	054407
Pratyay Mukherjee and Ritwik Mondal	
Observation of electron-magnon scattering contributions to incipient Anderson localization and dimensional crossover in antiferromagnetic γ -FeMn films (14 pages)	054408
Peng Chen, Jijun Yun, Ping Ma, Jiaqi Ran, Hang Li, Xu Liu, Long Cheng, Desheng Xue, and Cunxu Gao	
Spin-flux skyrmions: Anomalous electron dynamics and spin-Hall currents (14 pages)	054409
Sandip Bera and Sajeev John	
Specific heat of Gd^{3+} and Eu^{2+} based magnetic compounds (17 pages)	054410
D. J. García, J. G. Sereni, and A. A. Aligia	
Nonreciprocal spin-wave excitations in Rashba-Hubbard ferromagnets (10 pages)	054411
Aastha Jain and Dheeraj Kumar Singh	
Large anisotropic magnetoresistance in α -MnTe induced by strain (6 pages)	054412
Bao-Feng Chen, Jie-Xiang Yu, and Gen Yin	
First-principles investigation of anisotropic magnetic exchange interactions in altermagnetic rutile fluorides (10 pages)	054413
Surasree Sadhukhan and I. I. Mazin	
Possible coexistence of non-Fermi liquid behavior and incommensurate spin density wave in the triangular lattice compound TbAl_2Si_2 (9 pages)	054414
HengHeng Wu, Weijun Ren, Chin-Wei Wang, Mengru Cong, Han Ge, Liusuo Wu, Fei Gao, Meng An, Bing Li, and Zhidong Zhang	
Reversal of noncollinear antiferromagnets with an octupole moment by chirped spin-orbit torque (7 pages)	054415
M. T. Islam, Mohammad A. Jasem, YaDong Liu, X. S. Wang, X. R. Wang, and T. Min	

(Continued)

 The editors and referees of PRB find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. B 77, 130001 (2008).

Spin liquids on the tetratrillium lattice (<i>13 pages</i>)	054430
Matías G. Gonzalez and Johannes Reuther	
Large magnetoresistance and magnetocaloric effects in a magnetostrictive DyMn ₂ Ge ₂ single crystal (<i>10 pages</i>)	054431
Silu Zhang, Yaru Wang, Kunpeng Su, Haiou Wang, Lin Yang, and Shuai Huang	
Magnetic field tuned magnetic order and metamagnetic criticality in nonstoichiometric CeAuBi ₂ (<i>12 pages</i>)	054432
Halyna Hodovanets, Hyunsoo Kim, Tristin Metz, Yasuyuki Nakajima, Christopher J. Eckberg, Kefeng Wang, Jie Yong, Shanta R. Saha, David Graf, Nicholas P. Butch, Thomas Vojta, and Johnpierre Paglione	
Spin canting and ordered moments driven by tetragonal compression in ruthenates (<i>7 pages</i>)	054433
N. Budania, A. Jain, M. Madaan, I. da Silva, V. K. Malik, and S. M. Yusuf	
Attaining the ground state of kagome artificial spin ice via ultrafast site-specific laser annealing (<i>11 pages</i>)	054434
D. Pecchio, S. Sahoo, V. Scagnoli, and L. J. Heyderman	
Realistic modeling of transport properties at finite temperature in magnetic materials by local quantization of a Heisenberg model (<i>9 pages</i>)	054435
Fabian Engelke and Christian Heiliger	
Two-dimensional quasilayered hexagonal V ₂ N ₂ manipulated by temperature, strain, electric field, and magnetic field: Antiferromagnetic higher-order topological Mott state and in-plane valley polarization effect (<i>15 pages</i>)	054436
Zixuan Zhang, Xibin Liu, Lixiu Guan, Xiaobiao Liu, Xiangru Kong, and Linyang Li	
 Platform for zero-field isolated skyrmions: <i>4d</i> /Co atomic bilayers on Re(0001) (<i>15 pages</i>)	054437
Moinak Ghosh, Stefan Heinze, and Souvik Paul	
Confinement, deconfinement, and bound states in the spin-1 and spin- $\frac{3}{2}$ generalizations of the Majumdar-Ghosh chain (<i>19 pages</i>)	054438
Aman Sharma, Mithilesh Nayak, Natalia Chepiga, Henrik M. Rønnow, and Frédéric Mila	
 Spin- to charge-current conversion in altermagnetic candidate RuO ₂ probed by terahertz emission spectroscopy (<i>9 pages</i>)	054439
J. Jechumtál, O. Gueckstock, K. Jasenský, Z. Kašpar, K. Olejník, M. Gaerner, G. Reiss, S. Moser, P. Kessler, G. De Luca, S. Ganguly, J. Santiso, D. Scheffler, J. Zázvorka, P. Kubaščík, H. Reichlová, E. Schmoranzarová, P. Němec, T. Jungwirth, P. Kužel, T. Kampfrath, and L. Nádvořník	
Tunable interplay of strain and magnetism in Co/MoS ₂ heterostructures (<i>8 pages</i>)	054440
Qoimatul Mustaghfiroh, Su Jin Kim, Ikhwan Nur Rahman, Anabil Gayen, Fathiya Rahmani, Min Choi, Yeon Suk Choi, Seung-Young Park, Chuyang Liu, Yujing Zhang, Hyun Seok Lee, and Dong-Hyun Kim	
Sliding engineering spin-valley-layer coupling and altermagnetism in bilayer antiferromagnetic honeycomb lattices (<i>8 pages</i>)	054441
Wen-Xin Jiang, Zhen-Hao Gong, Yuantao Chen, Zhigang Gui, and Li Huang	
Orbital and magnetic ordering in the weak ferromagnet vanadium trifluoride VF ₃ (<i>10 pages</i>)	054442
Reinhard K. Kremer, Florian Kraus, Patrick Woidy, Gwilherm Nénert, Christina Drahten, and Bachir Ouladdiaf	
Pressure-induced enhancement of magnetism in Mn ₂ Bi ₂ Te ₅ (<i>8 pages</i>)	054443
Xiaoteng Huang, Wenfeng Wu, Xianlong Wang, Yonggang Li, Liangjian Zou, and Zhi Zeng	

(Continued)

Rapid shift of the peak of magnetic entropy change driven by strong intralayer ferromagnetic ordering in single crystal CrSBr (<i>15 pages</i>)	054444
Anirban Goswami, Gaihua Ye, Kalyan Jyoti Sarkar, Cynthia Nnokwe, Austin Alaspa, Zdenek Sofer, Rui He, and Samaresh Guchhait	
Magnetoelastic coupling at the field-induced transition in EuAl ₁₂ O ₁₉ (<i>8 pages</i>)	054445
T. Haidamak, G. Bastien, P. Proschek, A. Eliaš, R. H. Colman, D. Gorbunov, S. Zherlitsyn, A. A. Zvyagin, G. A. Zvyagina, J. Prokleška, V. Sechovský, and M. Vališka	
Towards quantum error correction with two-body gates for quantum registers based on nitrogen-vacancy centers in diamond (<i>10 pages</i>)	054446
Daniel L. Dulog and Martin B. Plenio	
Magnetization, excitations, and microwave power absorption in transition-metal/rare-earth ferrimagnets with disorder (<i>14 pages</i>)	054447
Dmitry A. Garanin and Eugene M. Chudnovsky	
Superfluidity and superconductivity	
Proximity-induced superconductivity in PbTe/Pb heterostructures from first principles (<i>11 pages</i>)	054501
R. Reho, A. R. Botello-Méndez, and Zeila Zanolli	
Inferring the pairing symmetry of the superconducting Sn/Si(111) via angle-resolved terahertz pump spectroscopy (<i>9 pages</i>)	054502
Mattia Iannetti, Tommaso Cea, Cesare Tresca, Lara Benfatto, and Gianni Profeta	
Field-induced superconductor-insulator transition in disordered two-dimensional electron systems: The case of amorphous indium-oxide thin films (<i>16 pages</i>)	054503
Tsofar Maniv and Vladimir Zhuravlev	
Effect of quasiparticles on the parameters of a gap-engineered transmon (<i>14 pages</i>)	054504
Daniil S. Antonenko, Pavel D. Kurilovich, Francisco J. Matute-Cañadas, and Leonid I. Glazman	
 Vortex motion induced losses in tantalum resonators (<i>14 pages</i>)	054505
Faranak Bahrami, Matthew P. Bland, Nana Shumiya, Ray D. Chang, Elizabeth Hedrick, Russell A. McLellan, Kevin D. Crowley, Aveek Dutta, Logan Bishop-Van Horn, Yusuke Iguchi, Aswin Kumar Anbalagan, Guangming Cheng, Chen Yang, Nan Yao, Andrew L. Walter, Andi M. Barbour, Sarang Gopalakrishnan, Robert J. Cava, Andrew A. Houck, and Nathalie P. de Leon	
Magnetic correlations and superconducting pairing near higher-order Van Hove singularities (<i>8 pages</i>)	054506
Zheng Wei, Yanmei Cai, Boyang Wen, and Tianxing Ma	
Two-dimensional flat band on the UTe ₂ (011) surface: Implication for STM measurements with a superconducting tip (<i>14 pages</i>)	054507
Jushin Tei, Takeshi Mizushima, and Satoshi Fujimoto	
Inverse proximity effect in thin-film superconductor/magnet heterostructures with metallic and insulating magnets (<i>13 pages</i>)	054508
V. A. Bobkov, G. A. Bobkov, and I. V. Bobkova	
Emergent boundary supersymmetry in a one-dimensional superconductor (<i>20 pages</i>)	054509
Parameshwar R. Pasnoori, Patrick Azaria, Colin Rylands, and Natan Andrei	

(Continued)

Theoretical prediction of structural stability and superconductivity in Janus Ti_2CSH MXene (<i>10 pages</i>)	054510
Jakkapat Seeyangnok and Udomsilp Pinsook	
Pressure-enhanced superconductivity in VN with coexistence of weakly interacting spin fluctuations (<i>10 pages</i>)	054511
Chenglu Huang, Jian Chen, Guozhu Song, Qinchuan Zhang, Yunxia Han, Chao Gu, Xiaohui Yu, Qiang Zhang, Luke L. Daemen, Liusuo Wu, Yusheng Zhao, and Shanmin Wang	
Mass-imbalance effect on the cluster formation in a one-dimensional Fermi gas with coexistent s - and p -wave interactions (<i>8 pages</i>)	054512
Yixin Guo (郭一昕)	
Utilizing discrete variable representations for decoherence-accurate numerical simulation of superconducting circuits (<i>24 pages</i>)	054513
Brittany Richman, C. J. Lobb, and Jacob M. Taylor	
Nuclear spin coherence and RKKY interaction in superconducting Nb_3Sn (<i>6 pages</i>)	054514
Gan Zhai, William P. Halperin, Arneil P. Reyes, Sam Posen, Chiara Tarantini, Manish Mandal, and David C. Larbalestier	
Magnetocaloric effect in type-II mesoscopic superconductors (<i>10 pages</i>)	054515
Isaías G. de Oliveira, D. André Orna T., A. Bustamante Dominguez, Luis De Los Santos Valladares, and Mauro M. Doria	
✂ Electronic reconstruction and interface engineering of emergent spin fluctuations in compressively strained $\text{La}_3\text{Ni}_2\text{O}_7$ on $\text{SrLaAlO}_4(001)$ (<i>9 pages</i>)	054516
Benjamin Geisler, James J. Hamlin, Gregory R. Stewart, Richard G. Hennig, and P. J. Hirschfeld	
Mapping ultrafast hot-carrier relaxation in high-pressure calcium hydrides via momentum-resolved quantum dynamics simulations (<i>10 pages</i>)	054517
Yuhang Wang, Wenhua Yang, Zhenfa Zheng, Lizhen Zhao, Huijuan Sun, and Jin Zhao	
Supercurrent tuning of the Josephson coupling energy (<i>6 pages</i>)	054518
Maxwell Wisne and Venkat Chandrasekhar	
Exceptionally large winding number of a finite-size topological superconductor (<i>11 pages</i>)	054519
Satoshi Ikegaya, Shingo Kobayashi, and Yasuhiro Asano	
Nonmonotonic dependence of T_c on the c -axis compression in the high-temperature superconducting cuprate $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$ (<i>18 pages</i>)	054520
I. A. Makarov and S. G. Ovchinnikov	
Machine learning accelerated search for superconductors in B-C-N based compounds and $\text{R}_3\text{Ni}_2\text{O}_7$ -type nickelates (<i>11 pages</i>)	054521
Xiaoying Li, Wenqian Tu, Run Lv, Li'e Liu, Dingfu Shao, Yuping Sun, and Wenjian Lu	
Intertwined charge and spin density waves in trilayer nickelate $\text{La}_4\text{Ni}_3\text{O}_{10}$ revealed by ^{139}La NQR (<i>8 pages</i>)	054522
Jie Dou, Feiyu Li, Mingxin Zhang, Jun Luo, Shuo Li, Aifang Fang, Jie Yang, Yanpeng Qi, Junjie Zhang, and Rui Zhou	
Higher-order topological superconductivity in type-II time-reversal symmetric Weyl semimetals with a hybrid pairing (<i>8 pages</i>)	054523
Junkang Huang, Z. D. Wang, and Tao Zhou	

(Continued)

Unveiling the superconducting scenario in multiphase superconductor CeRh_2As_2 based on space-group symmetry analysis and DFT calculations (<i>15 pages</i>)	054524
V. G. Yarzhemsky, E. A. Teplyakov, S. V. Ereameev, and E. V. Chulkov	
Revealing terahertz optical signatures of Shiba-state-induced gapped and gapless superconductivity (<i>16 pages</i>) . . .	054525
F. Yang, R. Y. Fang, S. L. Zhang, and L. Q. Chen	
Optimization of Floquet fluxonium qubits with commensurable two-tone drives (<i>9 pages</i>)	054526
Joachim Lauwens, Kristof Moors, and Bart Sorée	
Infinite magnetoresistance and vortex coupling in the $\text{Pb/Bi}_2\text{Sr}_2\text{CaCu}_2\text{O}_{8+\delta}$ heterostructure (<i>8 pages</i>)	054527
Weifan Zhu, Jiamin Yao, Shuntianjiao Ling, Shanyin Fu, Yifu Xu, Pengyue Xiong, Jiawen Zhang, Mengwei Xie, Yanan Zhang, Ye Chen, Huiqiu Yuan, Xin Lu, Qing-Hu Chen, and Yang Liu	
Optical probes of two-component pairing states in transition metal dichalcogenides (<i>9 pages</i>)	054528
Miguel-Ángel Sánchez-Martínez, Daniel Muñoz-Segovia, and Fernando de Juan	

ERRATA

Erratum: Quasiclassical theory of superconducting spin-splitter effects and spin-filtering via altermagnets [Phys. Rev. B 110 , L140506 (2024)] (<i>2 pages</i>)	059901(E)
Hans Gløckner Giil, Bjørnulf Brekke, Jacob Linder, and Arne Brataas	