

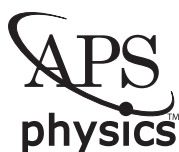
ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Strain-tuned properties of hybrid improper ferroelectric superlattices through first-principles calculations and machine learning (9 pages) 054101
Monirul Shaikh, Madhusudan Karmakar, and Saurabh Ghosh
- Lattice dynamics and structural transition of the hyperhoneycomb iridate β -Li₂IrO₃ investigated by high-pressure Raman scattering (10 pages) 054102
Sungkyun Choi, Heung-Sik Kim, Hun-Ho Kim, Aleksandra Krajewska, Gideok Kim, Matteo Minola, Tomohiro Takayama, Hidenori Takagi, Kristjan Haule, David Vanderbilt, and Bernhard Keimer
- Layer dependence of defect charge transition levels in two-dimensional materials (8 pages) 054103
Dan Wang and Ravishankar Sundararaman
- Scaling behavior of low-temperature orthorhombic domains in the prototypical high-temperature superconductor La_{1.875}Ba_{0.125}CuO₄ (7 pages) 054104
T. A. Assefa, Y. Cao, J. Diao, R. J. Harder, W. Cha, K. Kisslinger, G. D. Gu, J. M. Tranquada, M. P. M. Dean, and I. K. Robinson
- Elastic-frustration-driven unusual magnetoelastic properties in a switchable core-shell spin-crossover nanostructure (15 pages) 054105
Yogendra Singh, Hassane Oubouchou, Masamichi Nishino, Seiji Miyashita, and Kamel Boukheddaden
- Correlation between the composition-dependent properties and phase stability of Co₂YGa (Y = Cr, V) shape-memory alloys from first-principles study (11 pages) 054106
Chun-Mei Li, Yang Zhang, Wen-Jiang Feng, Ren-Zhong Huang, and Ming Gao
- Acoustic metamaterials with spinning components (12 pages) 054107
Degang Zhao, Yao-Ting Wang, Kin-Hung Fung, Zhao-Qing Zhang, and C. T. Chan
- Reducing lead toxicity in the methylammonium lead halide MAPbI₃: Why Sn substitution should be preferred to Pb vacancy for optimum solar cell efficiency (7 pages) 054108
Pooja Basera, Manish Kumar, Shikha Saini, and Saswata Bhattacharya
- Rotational stability of twisted bilayer graphene (8 pages) 054109
S. Bagchi, H. T. Johnson, and H. B. Chew

Inhomogeneous, disordered, and partially ordered systems

- Giant enhancement of solid solubility in monolayer alloys by selective orbital coupling (8 pages) 054201
Shiqiao Du, Jianfeng Wang, Lei Kang, Bing Huang, and Wenhui Duan



Energy velocity of multiply scattered waves in strongly scattering media (<i>13 pages</i>)	054202
Benoit Tallon, Thomas Brunet, Jacques Leng, and John H. Page	
Amplitude dynamics of the charge density wave in LaTe_3 : Theoretical description of pump-probe experiments (<i>19 pages</i>)	054203
Pavel E. Dolgirev, A. V. Rozhkov, Alfred Zong, Anshul Kogar, Nuh Gedik, and Boris V. Fine	
Atomic and electronic structures of a vacancy in amorphous silicon (<i>8 pages</i>)	054204
Andreas Pedersen, Laurent Pizzagalli, and Hannes Jónsson	
Dynamics, dynamical systems, lattice effects:	
Measurement of diamond nucleation rates from hydrocarbons at conditions comparable to the interiors of icy giant planets (<i>7 pages</i>)	054301
A. K. Schuster, N. J. Hartley, J. Vorberger, T. Döppner, T. van Driel, R. W. Falcone, L. B. Fletcher, S. Frydrych, E. Galtier, E. J. Gamboa, D. O. Gericke, S. H. Glenzer, E. Granados, M. J. MacDonald, A. J. MacKinnon, E. E. McBride, I. Nam, P. Neumayer, A. Pak, I. Prencipe, K. Voigt, A. M. Saunders, P. Sun, and D. Kraus	
Origin of the anomalous Pb-Br bond dynamics in formamidinium lead bromide perovskites (<i>5 pages</i>)	054302
Harishchandra Singh, Ruixiang Fei, Yevgeny Rakita, Michael Kulbak, David Cahen, Andrew M. Rappe, and Anatoly I. Frenkel	
Energy domain versus time domain precursor fluctuations above the Verwey transition in magnetite (<i>8 pages</i>)	054303
S. Borroni, G. S. Tucker, U. Stuhr, J. Lorenzana, H. M. Rønnow, and F. Carbone	
Emergence of large nonadiabatic effects induced by the electron-phonon interaction on the complex vibrational quasiparticle spectrum of doped monolayer MoS_2 (<i>13 pages</i>)	054304
Peio Garcia-Goiricelaya, Jon Lafuente-Bartolome, Idoia G. Gurtubay, and Asier Eiguren	
Time dynamics of Bethe ansatz solvable models (<i>8 pages</i>)	054305
Igor Ermakov and Tim Byrnes	
Shaping the terahertz sound propagation in water under highly directional confinement (<i>9 pages</i>)	054306
Alessio De Francesco, Luisa Scaccia, Ferdinando Formisano, Marco Maccarini, Francesco De Luca, Alexandra Parmentier, Ahmet Alatas, Alexey Suvorov, Yong Q. Cai, Ruipeng Li, and Alessandro Cunsolo	
Nature of topological protection in photonic spin and valley Hall insulators (<i>11 pages</i>)	054307
Matthias Saba, Stephan Wong, Mathew Elman, Sang Soon Oh, and Ortwin Hess	
Magnetism	
Nonreciprocal spin pumping damping in asymmetric magnetic trilayers (<i>9 pages</i>)	054401
Yevgen Pogoryelov, Manuel Pereiro, Somnath Jana, Ankit Kumar, Serkan Akansel, Mojtaba Ranjbar, Danny Thonig, Daniel Primetzhofer, Peter Svedlindh, Johan Åkerman, Olle Eriksson, Olof Karis, and Darío A. Arena	
Resources of nonlinear cavity magnonics for quantum information (<i>23 pages</i>)	054402
Mehrdad Elyasi, Yaroslav M. Blanter, and Gerrit E. W. Bauer	
Magnon profile on SrRuO_3 films studied by inelastic neutron scattering (<i>8 pages</i>)	054403
G. D. Dwivedi, C.-M. Wu, Bo-Yu Chen, S. T. Lin, W.-Z. Qiu, S. J. Sun, Guangyong Xu, J. W. Lynn, J. W. Chiou, C.-H Lee, W.-H. Li, S. Yano, and H. Chou	

(Continued)

Spin transport in thick insulating antiferromagnetic films (<i>13 pages</i>)	054404
Roberto E. Troncoso, Scott A. Bender, Arne Brataas, and Rembert A. Duine	
Stability and dynamics of in-plane skyrmions in collinear ferromagnets (<i>13 pages</i>)	054405
Ricardo Zarzuela, Venkata Krishna Bharadwaj, Kyoung-Whan Kim, Jairo Sinova, and Karin Everschor-Sitte	
Large nonlinear ferromagnetic resonance shift and strong magnon-magnon coupling in Ni ₈₀ Fe ₂₀ nanocross array (<i>6 pages</i>)	054406
Kartik Adhikari, Sourav Sahoo, Amrit Kumar Mondal, Yoshichika Otani, and Anjan Barman	
Electron-induced massive dynamics of magnetic domain walls (<i>13 pages</i>)	054407
Hilary M. Hurst, Victor Galitski, and Tero T. Heikkilä	
Classical and quantum order in hyperkagome antiferromagnets (<i>22 pages</i>)	054408
Hui-Ke Jin and Yi Zhou	
☞ Mapping skyrmion stability in uniaxial lacunar spinel magnets from first principles (<i>9 pages</i>)	054409
Daniil A. Kitchaev, Emily C. Schueller, and Anton Van der Ven	
Pressure-induced antiferromagnetic dome in the heavy-fermion Yb ₂ Pd ₂ In _{1-x} Sn _x system (<i>14 pages</i>)	054410
G. Lamura, I. J. Onuorah, P. Bonfà, S. Sanna, Z. Shermadini, R. Khasanov, J.-C. Orain, C. Baines, F. Gastaldo, M. Giovannini, I. Čurlík, A. Dzubinska, G. Pristas, M. Reiffers, A. Martinelli, C. Ritter, B. Joseph, E. Bauer, R. De Renzi, and T. Shiroka	
Modeling the spin-Peierls transition of spin- $\frac{1}{2}$ chains with correlated states: J_1 - J_2 model, CuGeO ₃ , and TTF-CuS ₄ C ₄ (CF ₃) ₄ (<i>9 pages</i>)	054411
Sudip Kumar Saha, Monalisa Singh Roy, Manoranjan Kumar, and Zoltán G. Soos	
Spherical optomagnonic microresonators: Triple-resonant photon transitions between Zeeman-split Mie modes (<i>8 pages</i>)	054412
E. Almpanis, G. P. Zouros, P. A. Pantazopoulos, K. L. Tsakmakidis, N. Papanikolaou, and N. Stefanou	
Hydrostatic pressure influence on T_C in (Ga,Mn)As (<i>10 pages</i>)	054413
Marta Gryglas-Borysiewicz, Adam Kwiatkowski, Piotr Juszyński, Zuzanna Ogorzałek, Konrad Puźniak, Mateusz Tokarczyk, Grzegorz Kowalski, Michał Baj, Dariusz Wasik, Nevill Gonzalez Szwacki, Jacek Przybytek, Janusz Sadowski, Maciej Sawicki, Piotr Dziawa, and Jarosław Z. Domagala	
☞ Magnetic phase diagram enriched by chemical substitution in a noncentrosymmetric helimagnet (<i>6 pages</i>)	054414
Tatsuki Sato, Yusuke Araki, Atsushi Miyake, Akiko Nakao, Nobuyuki Abe, Masashi Tokunaga, Shojiro Kimura, Yusuke Tokunaga, and Taka-hisa Arima	
Field-induced magnetic incommensurability in multiferroic Ni ₃ TeO ₆ (<i>9 pages</i>)	054415
J. Lass, Ch. Røhl Andersen, H. K. Leerberg, S. Birkemose, S. Toth, U. Stuhr, M. Bartkowiak, Ch. Niedermayer, Zhilun Lu, R. Toft-Petersen, M. Retuerto, J. Okkels Birk, and K. Lefmann	
Magnetoplasmonic properties of perpendicularly magnetized [Co/Pt] _N nanodots (<i>9 pages</i>)	054416
Francisco Freire-Fernández, Rhodri Mansell, and Sebastiaan van Dijken	
☞ Magnetic structure of the square cupola compound Ba(TiO)Cu ₄ (PO ₄) ₄ (<i>10 pages</i>)	054417
Riho Rästa, Ivo Heinmaa, Kenta Kimura, Tsuyoshi Kimura, and Raivo Stern	
Tailoring dual reversal modes by helicity control in ferromagnetic nanotubes (<i>12 pages</i>)	054419
H. D. Salinas, J. Restrepo, and Òscar Iglesias	

(Continued)

Universal scaling of three-dimensional dimerized quantum antiferromagnets on bipartite lattices (9 pages)	054420
D.-R. Tan and F.-J. Jiang	
Variation of sign and magnitude of the Dzyaloshinskii-Moriya interaction of a ferromagnet with an oxide interface (7 pages)	054421
Monika Arora, Justin M. Shaw, and Hans T. Nembach	
Electric field control of magnetic susceptibility in laminate magnetostrictive/piezoelectric composites: Phase-field simulation and theoretical model (11 pages)	054422
Liwei D. Geng, Yongke Yan, Shashank Priya, and Yu U. Wang	
Shear banding, intermittency, jamming, and dynamic phases for skyrmions in inhomogeneous pinning arrays (18 pages)	054423
C. Reichhardt and C. J. O. Reichhardt	
Magnon damping in the zigzag phase of the Kitaev-Heisenberg- Γ model on a honeycomb lattice (37 pages)	054424
R. L. Smit, S. Keupert, O. Tsyplatyev, P. A. Maksimov, A. L. Chernyshev, and P. Kopietz	
Canted antiferromagnetic order in the kagome material Sr-vesignieite (8 pages)	054425
A. Verrier, F. Bert, J. M. Parent, M. El-Amine, J. C. Orain, D. Boldrin, A. S. Wills, P. Mendels, and J. A. Quilliam	
Quantum robustness of fracton phases (20 pages)	054426
M. Mühlhauser, M. R. Walther, D. A. Reiss, and K. P. Schmidt	
Exact magnetic properties for classical delta-chains with ferromagnetic and antiferromagnetic interactions in applied magnetic field (12 pages)	054427
D. V. Dmitriev, V. Ya. Krivnov, J. Schnack, and J. Richter	
Magnetic properties of Mn-doped Bi ₂ Se ₃ topological insulators: <i>Ab initio</i> calculations (12 pages)	054428
K. Carva, P. Baláž, J. Šebesta, I. Turek, J. Kudrnovský, F. Máca, V. Drchal, J. Chico, V. Sechovský, and J. Honolka	
Magnetic ground state in FeTe ₂ , VS ₂ , and NiTe ₂ monolayers: Antiparallel magnetic moments at chalcogen atoms (11 pages)	054429
Mehmet Aras, Çetin Kılıç, and S. Ciraci	
Wavelength scaling of ultrafast demagnetization in Co/Pt multilayers (6 pages)	054430
Vincent Cardin, Tadas Balciunas, Katherine Légaré, Andrius Baltuska, Heide Ibrahim, Emmanuelle Jal, Boris Vodungbo, Nicolas Jaouen, Charles Varin, Jan Lüning, and François Légaré	
Genuine multipartite correlations distribution in the criticality of the Lipkin-Meshkov-Glick model (6 pages)	054431
Antônio C. Lourenço, Susane Calegari, Thiago O. Maciel, Tiago Debarba, Gabriel T. Landi, and Eduardo I. Duzzioni	
Spin-lattice coupling in a ferrimagnetic spinel: Exotic <i>H-T</i> phase diagram of MnCr ₂ S ₄ up to 110 T (8 pages)	054432
A. Miyata, H. Suwa, T. Nomura, L. Prodan, V. Felea, Y. Skourski, J. Deisenhofer, H.-A. Krug von Nidda, O. Portugall, S. Zherlitsyn, V. Tsurkan, J. Wosnitzer, and A. Loidl	
Temperature dependence of the Dzyaloshinskii-Moriya interaction in ultrathin films (5 pages)	054433
Yifan Zhou, Rhodri Mansell, Sergio Valencia, Florian Kronast, and Sebastiaan van Dijken	
Magnetization process of the breathing pyrochlore magnet CuInCr ₄ S ₈ in ultrahigh magnetic fields up to 150 T (9 pages)	054434
Masaki Gen, Yoshihiko Okamoto, Masaki Mori, Koshi Takenaka, and Yoshimitsu Kohama	

(Continued)

Peculiarities of magnetic ordering in the $S = 5/2$ two-dimensional square-lattice antimonate NaMnSbO_4 (12 pages)	054435
Tatyana Vasilchikova, Vladimir Nalbandyan, Igor Shukaev, Hyun-Joo Koo, Myung-Hwan Whangbo, Andrey Lozitskiy, Alexander Bogaychuk, Vyacheslav Kuzmin, Murat Tagirov, Evgeniya Vavilova, Alexander Vasiliev, and Elena Zvereva	
Modulation of magnon spin transport in a magnetic gate transistor (5 pages)	054436
K. S. Das, F. Feringa, M. Middelkamp, B. J. van Wees, and I. J. Vera-Marun	
Large anomalous Hall angle in the $\text{Fe}_{60}\text{Al}_{40}$ alloy induced by substitutional atomic disorder (8 pages)	054437
J. Kudrnovský, V. Drchal, F. Máca, I. Turek, and S. Khmelevskiy	
Crystallization of optically thick films of $\text{Co}_x\text{Fe}_{80-x}\text{B}_{20}$: Evolution of optical, magneto-optical, and structural properties (10 pages)	054438
Apoorva Sharma, Maria A. Hoffmann, Patrick Matthes, Olav Hellwig, Cornelia Kowol, Stefan E. Schulz, Dietrich R. T. Zahn, and Georgeta Salvan	
Octupolar order in d -orbital Mott insulators (7 pages)	054439
A. Paramakanti, D. D. Maharaj, and B. D. Gaulin	
Spin glass behavior and colossal negative magnetoresistance of the $p\text{-Zn}_{1-x}\text{Mn}_x\text{Te}$ strongly doped with phosphorus (8 pages)	054440
Le Van Khoi, W. Dobrowolski, T. Kazimierczuk, A. Rodek, P. Kossacki, R. R. Galazka, and W. Zawadzki	
Electronic structure and x-ray magnetic circular dichroism in ferroelectric $\text{CaMnTi}_2\text{O}_6$ (10 pages)	054441
V. N. Antonov, D. A. Kukusta, S. V. Moklyak, D. V. Mazur, and L. V. Bekenov	
Origin of negative magnetization phenomena in $(\text{Tm}_{1-x}\text{Mn}_x)\text{MnO}_3$: A neutron diffraction study (16 pages)	054442
Andreas Dönni, Vladimir Y. Pomjakushin, Lei Zhang, Kazunari Yamaura, and Alexei A. Belik	
Superfluidity and superconductivity	
Relaxation dynamics and dissipative phase transition in quantum oscillators with period tripling (13 pages)	054501
Jennifer Gosner, Björn Kubala, and Joachim Ankerhold	
Nonlinear dynamics of driven superconductors with dissipation (11 pages)	054502
H. P. Ojeda Collado, Gonzalo Usaj, José Lorenzana, and C. A. Balseiro	
Superconducting proximity effect in a NbSe_2 /graphene van der Waals junction (9 pages)	054503
Rai Moriya, Naoto Yabuki, and Tomoki Machida	
Structural phases of elemental Ga: Universal relations in conventional superconductors (6 pages)	054504
Rustem Khasanov, Hubertus Luetkens, Alex Amato, and Elvezio Morenzoni	
Identifying possible pairing states in Sr_2RuO_4 by tunneling spectroscopy (9 pages)	054505
Shu-Ichiro Suzuki, Masatoshi Sato, and Yukio Tanaka	
Pair-density-wave superconductivity of faces, edges, and vertices in systems with imbalanced fermions (11 pages)	054506
Albert Samoilienka, Mats Barkman, Andrea Benfenati, and Egor Babaev	
Magnetic signatures of domain walls in $s + is$ and $s + id$ superconductors: Observability and what that can tell us about the superconducting order parameter (8 pages)	054507
Andrea Benfenati, Mats Barkman, Thomas Winyard, Alex Wormald, Martin Speight, and Egor Babaev	

(Continued)

Microwave-based arbitrary CPHASE gates for transmon qubits (<i>11 pages</i>)	054508
George S. Barron, F. A. Calderon-Vargas, Junling Long, David P. Pappas, and Sophia E. Economou	
Robustness of unconventional <i>s</i> -wave superconducting states against disorder (<i>7 pages</i>)	054509
D. C. Cavanagh and P. M. R. Brydon	
Transport studies in a gate-tunable three-terminal Josephson junction (<i>7 pages</i>)	054510
Gino V. Graziano, Joon Sue Lee, Mihir Pendharkar, Chris J. Palmstrøm, and Vlad S. Pribiag	
Controlling the energy gap of a tunable two-level system by ac drive (<i>10 pages</i>)	054511
G. Oelsner, U. Hübner, and E. Il'ichev	
Proximity effect in a heterostructure of a high- T_c superconductor with a topological insulator from dynamical mean field theory (<i>8 pages</i>)	054512
Xiancong Lu and D. Sénéchal	
Nonadiabatic single-qubit quantum Otto engine (<i>9 pages</i>)	054513
Andrea Solfanelli, Marco Falsetti, and Michele Campisi	
Nodeless superconductivity in β -PdBi ₂ (<i>6 pages</i>)	054514
Jian Chen, An Wang, Guiming Pang, Hang Su, Ye Chen, and Huiqiu Yuan	
Multiple topological transitions driven by the interplay of normal scattering and Andreev scattering (<i>9 pages</i>)	054515
A. A. Kopasov and A. S. Mel'nikov	
Structure, superconductivity, and magnetism in Rb _{1-x} Fe _{1.6} Se _{2-z} S _z (<i>18 pages</i>)	054516
D. Croitori, I. Filippova, V. Kravtsov, A. Günther, S. Widmann, D. Reuter, H.-A. Krug von Nidda, J. Deisenhofer, A. Loidl, and V. Tsurkan	
Electrical response of superconductor/ferromagnet/topological-insulator/superconductor junctions to magnetic texture dynamics (<i>10 pages</i>)	054517
D. S. Rabinovich, I. V. Bobkova, and A. M. Bobkov	
Prediction of quasi-one-dimensional superconductivity in metastable two-dimensional boron (<i>8 pages</i>)	054518
Tong Chen, Qinyan Gu, Qun Chen, Xiaomeng Wang, Chris J. Pickard, Richard J. Needs, Dingyu Xing, and Jian Sun	
Unified phase diagram of F-doped LaFeAsO by means of NMR and NQR parameters (<i>12 pages</i>)	054519
Hans-Joachim Grafe, Piotr Lepucki, Markus Witschel, Adam P. Dioguardi, Rhea Kappenberger, Saicharan Aswartham, Sabine Wurmehl, and Bernd Büchner	