

ARTICLES

Electronic structure and strongly correlated systems

- ☞ Interaction-induced spatial correlations in a disordered glass (*11 pages*) 235101
Z. Ovadyahu
- Hubbard model on the kagome lattice with time-reversal invariant flux and spin-orbit coupling (*15 pages*) 235102
Irakli Titvinidze, Julian Legendre, Karyn Le Hur, and Walter Hofstetter
- Fermi surface and mass enhancement in the topological nodal-line semimetal NaAlSi (*6 pages*) 235103
Shinya Uji, Takako Konoike, Yuya Hattori, Taichi Terashima, Tamio Oguchi, Takahiro Yamada, Daigorou Hirai, and Zenji Hiroi
- Quantum embedding methods for correlated excited states of point defects: Case studies and challenges (*19 pages*) 235104
Lukas Muechler, Danis I. Badrtdinov, Alexander Hampel, Jennifer Cano, Malte Rösner, and Cyrus E. Dreyer
- Acoustic plasmons and conducting carriers in hole-doped cuprate superconductors (*9 pages*) 235105
A. Singh, H. Y. Huang, Christopher Lane, J. H. Li, J. Okamoto, S. Komiyama, Robert S. Markiewicz, Arun Bansil, T. K. Lee, A. Fujimori, C. T. Chen, and D. J. Huang
- Effect of geometry on magnetism of Hund's metals: Case study of BaRuO₃ (*10 pages*) 235106
Hrishit Banerjee, Hermann Schnait, Markus Aichhorn, and Tanusri Saha-Dasgupta
- First-principles prediction of the Landau parameter for Fermi liquids near the unitarity limit (*5 pages*) 235107
Shashin Pavaskar and Ira Z. Rothstein
- Optical amplification in a charge density wave phase of a quasi-two-dimensional material (*16 pages*) 235108
Stephan Michael and Hans Christian Schneider
- Spin-Peierls transition of $J_1 - J_2$ and extended models with ferromagnetic J_1 : Sublattice dimerization and thermodynamics of zigzag chains in β -TeVO₄ (*11 pages*) 235109
Manodip Routh, Sudip Kumar Saha, Manoranjan Kumar, and Zoltán G. Soos
- Electronic structure of intrinsic defects in *c*-gallium nitride: Density functional theory study without the jellium approximation (*17 pages*) 235110
Arthur H. Edwards, Peter A. Schultz, and Richard M. Dobzynski
- ☞ Solvable theory of a strange metal at the breakdown of a heavy Fermi liquid (*23 pages*) 235111
Erik E. Aldape, Tessa Cookmeyer, Aavishkar A. Patel, and Ehud Altman



Isolated fourfold fermion in BiTeI (6 pages)	235112
A. Kuibarov, A. Fedorov, V. Bezguba, H. Berger, A. Yaresko, V. Voroshnin, A. Kordyuk, P. Baumgärtel, B. Büchner, and S. Borisenko	
Photoinduced insulator-to-metal transition and coherent acoustic phonon propagation in LaCoO ₃ thin films explored by femtosecond pump-probe ellipsometry (8 pages)	235113
M. Zahradník, M. Kiaba, S. Espinoza, M. Rebarz, J. Andreasson, O. Caha, F. Abadizaman, D. Munzar, and A. Dubroka	
Hybrid Kohn-Sham + Thomas-Fermi scheme for high-temperature density functional theory (7 pages)	235114
P. Hollebon and T. Sjöström	
Discrete Lehmann representation of imaginary time Green's functions (18 pages)	235115
Jason Kaye, Kun Chen, and Olivier Parcollet	
Magneto-Seebeck effect in bismuth (13 pages)	235116
Felix Spathelf, Benoît Fauqué, and Kamran Behnia	
Yb ³⁺ <i>f-f</i> excitations in NaYbSe ₂ : Benchmarking embedded-cluster quantum chemical schemes for 4 <i>f</i> insulators (4 pages)	235117
P. Bhattacharyya and L. Hozoi	
Theory of collective topologically protected Majorana fermion excitations of networks of localized Majorana modes (12 pages)	235118
Kedar Damle	
Large intrinsic spin Hall conductivity and spin Hall angle in the nodal-line semimetals ThAl ₂ and ThGa ₂ (6 pages)	235119
Ning-Ning Zhao, Kai Liu, and Zhong-Yi Lu	
Realization of fractonic quantum phases in the breathing pyrochlore lattice (20 pages)	235120
SangEun Han, Adarsh S. Patri, and Yong Baek Kim	
Excitonic fractional quantum Hall hierarchy in moiré heterostructures (6 pages)	235121
Yves H. Kwan, Yichen Hu, Steven H. Simon, and S. A. Parameswaran	
Curvature-induced quantum spin-Hall effect on a Möbius strip (9 pages)	235122
Kyriakos Flouris, Miller Mendoza Jimenez, and Hans J. Herrmann	
Introducing screening in one-body density matrix functionals: Impact on charged excitations of model systems via the extended Koopmans' theorem (11 pages)	235123
S. Di Sabatino, J. Koskelo, J. A. Berger, and P. Romaniello	
Out-of-equilibrium dynamics arising from slow round-trip variations of Hamiltonian parameters across quantum and classical critical points (23 pages)	235124
Francesco Tarantelli and Ettore Vicari	
Raman fingerprints of fractionalized Majorana excitations in the honeycomb iridate Ag ₃ LiIr ₂ O ₆ (7 pages)	235125
Srishti Pal, Vinod Kumar, Debendra Prasad Panda, A. Sundaresan, Avinash V. Mahajan, D. V. S. Muthu, and A. K. Sood	
Coupling of <i>k_z</i> -dispersing π bands with surface localized states in graphite (6 pages)	235126
Fumihiko Matsui (松井文彦) and Shigemasa Suga (菅滋正)	

(Continued)

Open Wilson chain numerical renormalization group approach to Green's functions (<i>14 pages</i>)	235127
Jan Böker and Frithjof B. Anders	
Engineering magnetic topological insulators in $\text{Eu}_5\text{M}_2\text{X}_6$ Zintl compounds (<i>8 pages</i>)	235128
Nicodemos Varnava, Tanya Berry, Tyrel M. McQueen, and David Vanderbilt	
Impurities and other defects in correlated lattice electrons: Friedel oscillations and interference patterns (<i>10 pages</i>)	235129
Banhi Chatterjee, Jan Skolimowski, and Krzysztof Byczuk	
Weak electronic correlations in the kagome superconductor AV_3Sb_5 ($A = \text{K, Rb, Cs}$) (<i>8 pages</i>)	235130
Min Liu, Zhiwei Wang, and Jin-Jian Zhou	
Near-equilibrium approach to transport in complex Sachdev-Ye-Kitaev models (<i>21 pages</i>)	235131
Cristian Zanoci and Brian Swingle	
Second harmonic helicity and Faraday rotation in gated single-layer $1T'$ - WTe_2 (<i>10 pages</i>)	235132
Pankaj Bhalla and Habib Rostami	
Disorder effects on hot spots in electron-doped cuprates (<i>11 pages</i>)	235133
C. Gauvin-Ndiaye, P.-A. Graham, and A.-M. S. Tremblay	
Dynamical study of the origin of the charge density wave in AV_3Sb_5 ($A = \text{K, Rb, Cs}$) compounds (<i>12 pages</i>)	235134
Andrzej Ptok, Aksel Kobiałka, Małgorzata Sternik, Jan Łazewski, Paweł T. Jochym, Andrzej M. Oleś, and Przemysław Piekarczyk	
Topological charge Fano effect in multi-Weyl semimetals (<i>8 pages</i>)	235135
W. C. Silva, W. N. Mizobata, J. E. Sanches, L. S. Ricco, I. A. Shelykh, M. de Souza, M. S. Figueira, E. Vernek, and A. C. Seridonio	
Unsupervised learning of interacting topological and symmetry-breaking phase transitions (<i>7 pages</i>)	235136
En-Jui Kuo and Hossein Dehghani	
Electronic band structure of Ti_2O_3 thin films studied by angle-resolved photoemission spectroscopy (<i>8 pages</i>)	235137
Naoto Hasegawa, Kohei Yoshimatsu, Daisuke Shiga, Tatsuhiko Kanda, Satoru Miyazaki, Miho Kitamura, Koji Horiba, and Hiroshi Kumigashira	
Topological classification and diagnosis in magnetically ordered electronic materials (<i>11 pages</i>)	235138
Bingrui Peng, Yi Jiang, Zhong Fang, Hongming Weng, and Chen Fang	
Topological states in a dimerized system with staggered magnetic fluxes (<i>6 pages</i>)	235139
Ai-Lei He, Wei-Wei Luo, Yuan Zhou, Yi-Fei Wang, and Hong Yao	
Integer quantum Hall effect of two-component hard-core bosons in a topological triangular lattice (<i>6 pages</i>)	235140
Tian-Sheng Zeng	
✂ Fluctuating spin-orbital texture of Rashba-split surface states in real and reciprocal space (<i>7 pages</i>)	235141
Takuto Nakamura, Yoshiyuki Ohtsubo, Ayumi Harasawa, Koichiro Yaji, Shik Shin, Fumio Komori, and Shin-ichi Kimura	
Orbital angular momentum driven anomalous Hall effect (<i>10 pages</i>)	235142
Oliver Dowinton and Mohammad Saeed Bahramy	
✂ Classification of (2+1)D invertible fermionic topological phases with symmetry (<i>60 pages</i>)	235143
Maissam Barkeshli, Yu-An Chen, Po-Shen Hsin, and Naren Manjunath	

(Continued)

Stochastic differential equation approach to understanding the population control bias in full configuration interaction quantum Monte Carlo (23 pages)	235144
Joachim Brand, Mingrui Yang, and Elke Pahl	
Crucial role of out-of-plane Sb p orbitals in Van Hove singularity formation and electronic correlations in the superconducting kagome metal CsV_3Sb_5 (9 pages)	235145
Min Yong Jeong, Hyeok-Jun Yang, Hee Seung Kim, Yong Baek Kim, SungBin Lee, and Myung Joon Han	
Semiconductors I: bulk	
Unique one-body position operator for periodic systems (4 pages)	235201
Stefano Evangelisti, Faten Abu-Shoga, Celestino Angeli, Gian Luigi Bendazzoli, and J. Arjan Berger	
Gate-controlled proximity magnetoresistance in $\text{In}_{1-x}\text{Ga}_x\text{As}/(\text{Ga},\text{Fe})\text{Sb}$ bilayer heterostructures (7 pages)	235202
Kosuke Takiguchi, Kyosuke Okamura, Le Duc Anh, and Masaaki Tanaka	
Spin splitting of the conduction band by exchange interaction in the valence band through a $\mathbf{k} \cdot \mathbf{p}$ interband process in ferromagnetic semiconductors (13 pages)	235203
Kenji Hayashida and Hiroshi Akera	
Chiral phonons entangled with multiple Hall effects and unified convention for pseudoangular momentum in two-dimensional materials (7 pages)	235204
Tiantian Zhang and Shuichi Murakami	
Semiconductors II: surfaces, interfaces, microstructures, and related topics	
Oxidation of two-dimensional electrides: Structural transition and the formation of half-metallic channels protected by oxide layers (11 pages)	235301
Pedro H. Souza, Danilo Kuritza, José E. Padilha, and Roberto H. Miwa	
Nonuniform heat redistribution among multiple channels in the integer quantum Hall regime (8 pages)	235302
Ryota Konuma, Chaojing Lin, Tokuro Hata, Taichi Hirasawa, Takafumi Akiho, Koji Muraki, and Toshimasa Fujisawa	
Mechanical and electronic properties of $\alpha\text{-M}_2\text{X}_3$ ($M=\text{Ga}, \text{In}; X=\text{S}, \text{Se}$) monolayers (7 pages)	235303
Guitao Zhang, Kangjun Lu, Yifan Wang, Haowei Wang, and Qian Chen	
Topological Lifshitz transition in Weyl semimetal NbP decorated with heavy elements (8 pages)	235304
Ashutosh S. Wadge, Bogdan J. Kowalski, Carmine Autieri, Przemysław Iwanowski, Andrzej Hruban, Natalia Olszowska, Marcin Rosmus, Jacek Kołodziej, and Andrzej Wiśniewski	
Statistical limits for entanglement swapping with semiconductor entangled photon sources (9 pages)	235305
Jingzhong Yang, Michael Zopf, Pengji Li, Nand Lal Sharma, Weijie Nie, Frederik Benthin, Tom Fandrich, Eddy P. Rugeramigabo, Caspar Hopfmann, Robert Keil, Oliver G. Schmidt, and Fei Ding	
Zeeman and hyperfine interactions of a single $^{167}\text{Er}^{3+}$ ion in Si (9 pages)	235306
Jiliang Yang, Wenda Fan, Yangbo Zhang, Changkui Duan, Gabriele G. de Boo, Rose L. Ahlefeldt, Jevon J. Longdell, Brett C. Johnson, Jeffrey C. McCallum, Matthew J. Sellars, Sven Rogge, Chunming Yin, and Jiangfeng Du	
Van Hove singularity and Lifshitz transition in thickness-controlled Li-intercalated graphene (6 pages)	235307
S. Ichinokura, M. Toyoda, M. Hashizume, K. Horii, S. Kusaka, S. Ideta, K. Tanaka, R. Shimizu, T. Hitosugi, S. Saito, and T. Hirahara	

(Continued)

Surface physics, nanoscale physics, low-dimensional systems

First-principles calculations of double resonance Raman spectra for monolayer MoTe ₂ (8 pages)	235401
Jianqi Huang, Huaihong Guo, Lin Zhou, Shishu Zhang, Lianming Tong, Riichiro Saito, Teng Yang, and Zhidong Zhang	
Nonlocal thermal transport modeling using the thermal distributor (9 pages)	235402
Ali Kefayati, Philip B. Allen, and Vasili Perebeinos	
Circular dichroism as a probe for topology in three-dimensional semimetals (11 pages)	235403
Sajid Sekh and Ipsita Mandal	
Robustness of Aharonov-Bohm cages in quantum walks (18 pages)	235404
Hugo Perrin, Jean-Noël Fuchs, and Rémy Mosseri	
In-plane optical phonon modes of current-carrying graphene (19 pages)	235405
Mohsen Sabbaghi, Tobias Stauber, Hyun-Woo Lee, J. Sebastian Gomez-Diaz, and George W. Hanson	
Quantum Yu-Shiba-Rusinov dimers (16 pages)	235406
Harald Schmid, Jacob F. Steiner, Katharina J. Franke, and Felix von Oppen	
Electronic phase transitions in quasi-one-dimensional atomic chains: Au wires on Si(553) (9 pages)	235407
Priyanka Yogi, Julian Koch, Simone Sanna, and Herbert Pfnür	
Nonlinear magnetoconductivity in Weyl and multi-Weyl semimetals in quantizing magnetic field (10 pages)	235408
Sunit Das, Kamal Das, and Amit Agarwal	
Vanishing of the quantum spin Hall phase in a semi-Dirac Kane-Mele model (8 pages)	235409
Sayan Mondal and Saurabh Basu	
Phase transition of layer-stacked borophene under pressure (6 pages)	235410
Xiao-Ji Weng, QuanSheng Wu, Xi Shao, Oleg V. Yazyev, Xin-Ling He, Xiao Dong, Hui-Tian Wang, Xiang-Feng Zhou, and Yongjun Tian	
Anomalous bulk-edge correspondence and dual-band topologically protected edge states in magnetized plasma (10 pages)	235411
Ning Han, Jianlong Liu, Yang Gao, Keya Zhou, and Shutian Liu	
Towards quantum thermal multi-transistor systems: Energy divider formalism (27 pages)	235412
Ravi T. Wijesekara, Sarath D. Gunapala, and Malin Premaratne	
Surface plasmon polariton phase retrieval via nanoscale surface roughness induced cross-polarization scattering (7 pages)	235413
É. McClean-Iltén, J. Gordon, and D. Zerulla	
Inclusion of the sample-tip interaction term in the theory of tip-enhanced Raman spectroscopy (9 pages)	235414
Bruno C. Publio, Bruno S. Oliveira, Cassiano Rabelo, Hudson Miranda, Thiago L. Vasconcelos, Ado Jorio, and Luiz Gustavo Cançado	
Magic radius of an AA-stacked bilayer graphene quantum dot (8 pages)	235415
A. L. Rakhmanov, A. V. Rozhkov, and A. O. Sboyshakov	
Reversible switching of anomalous valley Hall effect in ferrovalley Janus 1T-CrOX (X = F, Cl, Br, I) and the multiferroic heterostructure CrOX/In ₂ Se ₃ (9 pages)	235416
R. J. Sun, R. Liu, J. J. Lu, X. W. Zhao, G. C. Hu, X. B. Yuan, and J. F. Ren	

(Continued)

Transmission line approach to transport of heat in chiral systems with dissipation (<i>7 pages</i>)	235417
Florian Stäbler and Eugene Sukhorukov	
Generalized Peierls substitution for the tight-binding model of twisted graphene systems in a magnetic field (<i>17 pages</i>)	235418
Thi-Nga Do, Po-Hsin Shih, Hsin Lin, Danhong Huang, Godfrey Gumbs, and Tay-Rong Chang	
Three-dimensional <i>ab initio</i> description of vibration-assisted electron knock-on displacements in graphene (<i>6 pages</i>)	235419
Alexandru Chirita, Alexander Markevich, Mukesh Tripathi, Nicholas A. Pike, Matthieu J. Verstraete, Jani Kotakoski, and Toma Susi	
Anomalous Hall and Nernst effects in Kane fermions (<i>8 pages</i>)	235420
Karun Gadge, Sumanta Tewari, and Girish Sharma	
Moiré band structures of twisted phosphorene bilayers (<i>18 pages</i>)	235421
Isaac Soltero, Jonathan Guerrero-Sánchez, Francisco Mireles, and David A. Ruiz-Tijerina	
Magnetic proximity induced valley-contrasting quantum anomalous Hall effect in a graphene-CrBr ₃ van der Waals heterostructure (<i>8 pages</i>)	235422
Mayuri Bora, Sushant Kumar Behera, Prasanjit Samal, and Pritam Deb	
Quantum transport in chaotic cavities with tunnel barriers (<i>12 pages</i>)	235423
Lucas H. Oliveira, Pedro H. S. Bento, and Marcel Novaes	
Magnetic domain wall dynamics under external electric field in bilayer CrI ₃ (<i>13 pages</i>)	235424
Sahar Izadi Vishkayi and Reza Asgari	
Thermoelectric phenomena in a one-dimensional diffusive quantum medium (<i>5 pages</i>)	235425
I. N. Volovichev and D. V. Kadygrob	
Exceptional mode topological surface laser (<i>12 pages</i>)	235426
Kazuki Sone, Yuto Ashida, and Takahiro Sagawa	
Friction and chaos: Influence of the damping coefficient on atomic-scale stick-slip on hexagonal crystal lattices (<i>7 pages</i>)	235427
Enrico Gnecco, Liron Agmon, and Ronen Berkovich	
Surface charge-transfer doping a quantum-confined silver monolayer beneath epitaxial graphene (<i>12 pages</i>)	235428
Philipp Rosenzweig, Hrag Karakachian, Dmitry Marchenko, and Ulrich Starke	
Room-temperature surface multiferroicity in Y ₂ NiMnO ₆ nanorods (<i>9 pages</i>)	235429
Shubhankar Mishra, Amritendu Roy, Aditi Sahoo, Biswarup Satpati, Anirban Roychowdhury, P. K. Mohanty, Chandan Kumar Ghosh, and Dipten Bhattacharya	
Unveiling the spin-singlet states of two electron-hole pair complexes using two-photon excitation in a GaAs/AlAs quantum dot (<i>9 pages</i>)	235430
S. Germanis, P. Atkinson, A. Bach, R. Hostein, R. Braive, M. Vabre, F. Margailan, M. Bernard, V. Voliotis, and B. Eble	
Photothermal behavior for two-dimensional nanoparticle ensembles: Multiple scattering and thermal accumulation effects (<i>11 pages</i>)	235431
Minggang Luo, Junming Zhao, Linhua Liu, and Mauro Antezza	

(Continued)

Second-harmonic generation from singular metasurfaces (<i>11 pages</i>)	235432
Fan Yang and Cristian Ciraci	
Dimensional crossover in self-intercalated antiferromagnetic V ₅ S ₈ nanoflakes (<i>6 pages</i>)	235433
Zhang Zhou, Xiaoxu Zhao, Liangmei Wu, Hongtao Liu, Jiancui Chen, Chuanyin Xi, Zhaosheng Wang, Enke Liu, Wu Zhou, Stephen J. Pennycook, Sokrates T. Pantelides, Xiao-Guang Zhang, Lihong Bao, and Hong-Jun Gao	
Magnetoplasmonic coupling in graphene nanodisk dimers: An extended coupled-dipole model for circularly polarized states (<i>12 pages</i>)	235435
Ningning Wang, Linhui Ding, and Weihua Wang	
Structural and magnetic investigation of the interfaces of Fe ₃ O ₄ /MgO(001) with and without NiO interlayer (<i>9 pages</i>)	235436
Tobias Pohlmann, Florian Bertram, Jannis Thien, Jari Rodewald, Kevin Ruwisch, Timo Kuschel, Eugen Weschke, Karsten Küpper, and Joachim Wollschläger	
Holonomic quantum manipulation in the Weyl disk (<i>13 pages</i>)	235437
Victor Boogers, Janis Erdmanis, and Yuli Nazarov	
Tunnel current noise spectra of spins in individual dimers of molecular radicals (<i>9 pages</i>)	235438
Yishay Manassen, Moamen Jbara, Michael Averbukh, Zion Hazan, Carsten Henkel, and Baruch Horovitz	
Qubit-photon bound states in superconducting metamaterials (<i>14 pages</i>)	235439
M. Pejić, Ž. Pržulj, D. Chevizovich, N. Lazarides, G. P. Tsironis, and Z. Ivić	
Renormalization group analysis of the finite two-dimensional XY model with fourfold anisotropy: Application to the magnetic susceptibility of a ferromagnetic ultrathin film (<i>20 pages</i>)	235440
D. Venus	
Topological phases of a semi-Dirac Chern insulator in the presence of extended range hopping (<i>9 pages</i>)	235441
Sayan Mondal and Saurabh Basu	
Microscopic mechanism of hydrogen intercalation: On the conversion of the buffer layer on SiC to graphene (<i>8 pages</i>)	235442
Ryotaro Sakakibara and Wataru Norimatsu	
Atomic-scale visualization of the <i>p-d</i> hybridization in III-V semiconductor surfaces doped with transition metal impurities (<i>6 pages</i>)	235443
K. Badiane, G. Rodary, M. Amato, A. Gloter, C. David, H. Aubin, and J.-C. Girard	
Covalent and van der Waals interactions in a vertical heterostructure composed of boron and carbon (<i>9 pages</i>)	235444
A. Kochaev, K. Katin, M. Maslov, and S. Singh	
Theory of polar domains in moiré heterostructures (<i>14 pages</i>)	235445
Daniel Bennett	

ERRATA

Erratum: Channel-selective non-Fermi liquid behavior in the two-channel Kondo lattice model under a magnetic field [Phys. Rev. B 102 , 155126 (2020)] (<i>1 page</i>)	239901(E)
Koji Inui and Yukitoshi Motome	

(Continued)

Erratum: Nonlinear spectroscopy of excitonic states in transition metal dichalcogenides [Phys. Rev. B 105 , 115436 (2022)] (<i>3 pages</i>).....	239902(E)
Yaroslav V. Zhumagulov, Vyacheslav D. Neverov, Alexander E. Lukyanov, Dmitry R. Gulevich, Andrey V. Krasavin, Alexei Vagov, and Vasili Perebeinos	
Erratum: Extrinsic thermoelectric response of coherent conductors [Phys. Rev. B 104 , 115430 (2021)] (<i>2 pages</i>).....	239903(E)
Rafael Sánchez, Cosimo Gorini, and Geneviève Fleury	