

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 109, NUMBER 6

FEBRUARY 2024-1(II)

Secondary proximity effect in a side-coupled double quantum dot structure (<i>6 pages</i>)	064518
Jia-Ning Wang, Yong-Chen Xiong, Wang-Huai Zhou, Tan Peng, and Ziyu Wang	
Signatures of triplet superconductivity in $\nu = 2$ chiral Andreev states (<i>9 pages</i>)	064519
Liliana Arrachea, Alfredo Levy Yeyati, and C. A. Balseiro	

Topological phases of strongly interacting time-reversal invariant topological superconducting chains under a magnetic field (9 pages)	064503
Leandro M. Chinellato, Claudio J. Gazza, Alejandro M. Lobos, and Armando A. Aligia	
Kitaev ring threaded by a magnetic flux: Topological gap, Anderson localization of quasiparticles, and divergence of supercurrent derivative (15 pages)	064504
Martina Minutillo, Procolo Lucignano, Gabriele Campagnano, and Angelo Russomanno	
Observation of quantum oscillations in the extreme weak anharmonic limit (7 pages)	064505
A. Th��ry, B. Neukelmance, B. Hue, W. Legrand, L. Jarjat, J. Craquelin, M. Villiers, A. Cottet, M. R. Delbecq, and T. Kontos	
Interplay of disorder and interactions in the bilayer band insulator: A determinant quantum Monte Carlo study (7 pages)	064506
Yogeshwar Prasad and Hunpyo Lee	
Structural and electric transport properties of gray arsenic under high pressure (6 pages)	064507
Wenjing Cheng, Xiaodong Yao, Lingxiao Zhao, Chenkai Li, Qunfei Zheng, Jun Han, Shanmin Wang, Ying Liu, and Jinlong Zhu	
Diamagnetic property and optical absorption of conventional superconductors with magnetic impurities in linear response (15 pages)	064508
F. Yang and M. W. Wu	
Identifying Majorana zero modes in vortex lattices using Fano factor tomography (13 pages)	064509
Jiong Mei, Kun Jiang, and Jiangping Hu	
Pressure-induced surface superconductivity in the noncentrosymmetric superconductor PbTaSe ₂ : Pressure-dependent point-contact Andreev spectroscopy (7 pages)	064510
Hai Zi, Yu-qing Zhao, Ming-chong He, Yu-jia Long, Lin-xiao Zhao, Xing-yuan Hou, Huan-xing Yang, Yi-feng Yang, Lei Shan, Zhi-an Ren, Jian-qi Li, Jiang-ping Hu, Geng-fu Chen, Peng Xiong, and Cong Ren	
Intrinsic superconducting diode effects in tilted Weyl and Dirac semimetals (10 pages)	064511
Kai Chen, Bishnu Karki, and Pavan Hosur	
Atomically thin superfluid and solid phases for atoms on strained graphene (12 pages)	064512
Sang Wook Kim, Mohamed Marwan Elsayed, Nathan S. Nichols, Taras Lakoba, Juan Vanegas, Carlos Wexler, Valeri N. Kotov, and Adrian Del Maestro	
Prominent stress-driven anomalies in superconductivity of yttrium hexahydride (8 pages)	064513
Han Liu, Chang Liu, Yanming Ma, and Changfeng Chen	
Emergent Chern-Simons interactions in 3+1 dimensions (14 pages)	064514
M. St��lhammar, D. Rudneva, T. H. Hansson, and F. Wilczek	
Multigap superconductivity in lithium intercalated bilayer Mo ₂ C (8 pages)	064515
Can Hong, Danhong Wu, Xi-Bo Li, and Feipeng Zheng	
Pairing symmetries of multiple superconducting phases in UTe ₂ : Competition between ferromagnetic and antiferromagnetic fluctuations (9 pages)	064516
Jushin Tei, Takeshi Mizushima, and Satoshi Fujimoto	
Simple solvable model for heavy-fermion superconductivity from the two-fluid normal state (10 pages)	064517
Jiangfan Wang, Yu Li, and Yi-feng Yang	

(Continued)

Tuning magnetic interactions of Co and 4d transition-metal atomic bilayers on Re(0001) via interface engineering (15 pages)	064417
Souvik Paul and Stefan Heinze	
Martensitic and room-temperature magnetocaloric properties of Mn-rich Mn-Ni-Sn Heusler alloys: Experiment and theory (9 pages)	064418
Jyoti Sharma, A. A. Coelho, K. G. Suresh, and Aftab Alam	
Ultrafast spin transfer and spin logic gates in linear Ni substituted polyacene structures (12 pages)	064419
Xiufang Liang, Shangjie Ma, Bo Ma, Yiming Zhang, Jing Liu, Chun Li, Georgios Lefkidis, Wolfgang Hübner, and Wei Jin	
Absence of induced ferromagnetism in epitaxial uranium dioxide thin films (6 pages)	064420
W. Thomas, F. Wilhelm, S. Langridge, L. M. Harding, C. Bell, R. Springell, S. Friedemann, R. Caciuffo, and G. H. Lander	
☞ Three-dimensional checkerboard spin structure on a breathing pyrochlore lattice (16 pages)	064421
Margarita G. Dronova, Václav Petříček, Zachary Morgan, Feng Ye, Daniel M. Silevitch, and Yejun Feng	
Frustrated Ising model with competing interactions on a square lattice (6 pages)	064422
Jae Hwan Lee, Seung-Yeon Kim, and Jin Min Kim	
Disorder effects in spiral spin liquids: Long-range spin textures, Friedel-like oscillations, and spiral spin glasses (25 pages)	064423
Pedro M. Cónsoli and Matthias Vojta	
Tracing Dirac points of topological surface states by ferromagnetic resonance (9 pages)	064424
Laura Pietanesi, Magdalena Marganska, Thomas Mayer, Michael Barth, Lin Chen, Ji Zou, Adrian Weindl, Alexander Liebig, Rebeca Díaz-Pardo, Dhavala Suri, Florian Schmid, Franz J. Gießibl, Klaus Richter, Yaroslav Tserkovnyak, Matthias Kronseder, and Christian H. Back	
Strong magnetic anisotropy and magnetoelastic coupling in chromium chalcogenide monolayers (7 pages)	064425
Hong-yao Liu (刘洪瑶), Huan Yang (杨欢), and Yujun Zheng (郑雨军)	
From chiral spin liquids to skyrmion fluids and crystals, and their interplay with itinerant electrons (18 pages)	064426
F. A. Gómez Albarracín, H. Diego Rosales, Masafumi Udagawa, P. Pujol, and Ludovic D. C. Jaubert	
Measurement of third harmonic voltage in ferromagnet-heavy metal heterostructures (9 pages)	064427
Quanzhi Zhang, Ze Yan, Aohua Ying, Jianrong Zhang, Bo Zhang, Jiangwei Cao, Mingsu Si, Li Xi, Desheng Xue, and Dezheng Yang	
Scalar spin chirality induced by a circularly polarized electric field in a classical kagome magnet (9 pages)	064428
Ryota Yambe and Satoru Hayami	
Superfluidity and superconductivity	
Biased dynamics of the miscible-immiscible quantum phase transition in a binary Bose-Einstein condensate (11 pages)	064501
Francis A. Bayocboc, Jr., Jacek Dziarmaga, and Wojciech H. Zurek	
First-principles study of the superconductivity of MoB ₂ under low pressure and its evolution under high pressure (7 pages)	064502
Chao Zhou, Hongyu Yu, Zihan Zhang, Zekun Yu, Jinming Zhu, Kuo Bao, and Tian Cui	

(Continued)

Real-space imaging of magnetization reversal in deformed kagome artificial spin ices (<i>9 pages</i>)	064402
Dong Shi, Haoran Chen, Jia Xu, Shilei Zhang, and Yizheng Wu	
Er-driven incommensurate to commensurate magnetic phase transition of Fe in the spin-chain compound BaErFeO ₄ (<i>12 pages</i>)	064403
Andreas Dönni, Vladimir Y. Pomjakushin, and Alexei A. Belik	
 Einstein-de Haas torque as a discrete spectroscopic probe allows nanomechanical measurement of a magnetic resonance (<i>10 pages</i>)	064404
K. R. Fast, J. E. Losby, G. Hajisalem, P. E. Barclay, and M. R. Freeman	
Impact of a ferromagnetic insulating barrier in perovskite-based magnetic tunnel junctions (<i>7 pages</i>)	064405
M. Abbasi Eskandari, S. Ghotb, and P. Fournier	
Dynamics of bistable Néel domain walls under spin-orbit torque (<i>10 pages</i>)	064406
Eloi Haltz, Kévin J. A. Franke, and Christopher H. Marrows	
Bulk photovoltaic effect in antiferromagnet: Role of collective spin dynamics (<i>17 pages</i>)	064407
Junta Iguchi, Hikaru Watanabe, Yuta Murakami, Takuya Nomoto, and Ryotaro Arita	
Phase control of spin waves in the van der Waals antiferromagnet NiPS ₃ (<i>7 pages</i>)	064408
Shingo Toyoda, Jonathon Kruppe, Kohtaro Yamakawa, James Analytis, and Joseph Orenstein	
Stability of a quantum skyrmion: Projective measurements and the quantum Zeno effect (<i>10 pages</i>)	064409
Fabio Salvati, Mikhail I. Katsnelson, Andrey A. Bagrov, and Tom Westerhout	
Discrete Abelian lattice gauge theories on a ladder and their dualities with quantum clock models (<i>11 pages</i>)	064410
S. Pradhan, A. Maroncelli, and E. Ercolessi	
Relevance of thermal disorder in the electronic and spin ultrafast dynamics of iron in the low-perturbation regime (<i>6 pages</i>)	064411
G. M. Pierantozzi, A. De Vita, R. Cucini, A. M. Finardi, T. Pincelli, F. Sirotti, J. Fujii, C. Dri, G. Brajnik, R. Sergo, G. Cautero, G. Panaccione, and G. Rossi	
Vector photon-magnon-phonon coherence in a polarized microwave driven cavity magnomechanical system (<i>16 pages</i>)	064412
Jia-Xin Peng, Akash Kundu, Zeng-Xing Liu, Atta ur Rahman, Naeem Akhtar, and M. Asjad	
Influence of alkali-fluoride insertion layers on the perpendicular magnetic anisotropy at the Fe/MgO interface (<i>5 pages</i>)	064413
Jieyi Chen, Shoya Sakamoto, and Shinji Miwa	
High pressure studies of the <i>T</i> - <i>P</i> phase diagrams of erbium and thulium up to 30 GPa by using ac magnetization experiments (<i>9 pages</i>)	064414
Masaki Mito, Yuta Kimura, and Javier Campo	
Pressure control of magnetic order and excitations in the pyrochlore antiferromagnet MgCr ₂ O ₄ (<i>12 pages</i>)	064415
L. S. Nassar, H. Lane, B. Haberl, M. Graves-Brook, B. Winn, S. M. Koohpayeh, and M. Mourigal	
Stray magnetic field imaging of thin exfoliated iron halides flakes (<i>15 pages</i>)	064416
Fernando Meneses, Rongrong Qi, Alexander J. Healey, Yi You, Islay O. Robertson, Sam C. Scholten, Ashok Keerthi, Gary Harrison, Achintya Bera, Hiran Jyothilal, Lloyd C. L. Hollenberg, Boya Radha, and Jean-Philippe Tetienne	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW B

THIRD SERIES, VOLUME 109, NUMBER 6

FEBRUARY 2024-1(II)

Robust nonergodicity of the ground states in the β ensemble (10 pages)	064206
Adway Kumar Das, Anandamohan Ghosh, and Ivan M. Khaymovich	
Designed metal-insulator transition in low-symmetry magnetic intermetallics (9 pages)	064207
Prashant Singh, Tyler Del Rose, Yaroslav Mudryk, Vitalij K. Pecharsky, and Duane D. Johnson	
Extended critical phase in quasiperiodic quantum Hall systems (9 pages)	064208
Jonas F. Karcher, Romain Vasseur, and Sarang Gopalakrishnan	
Dynamics, dynamical systems, lattice effects:	
Nonadiabatic effect in topological and interacting charge pumping (5 pages)	064301
Fan Yang, Xingyu Li, and Hui Zhai	
Probing Hilbert space fragmentation and the block inverse participation ratio (13 pages)	064302
Philipp Frey, David Mikhail, Stephan Rachel, and Lucas Hackl	
Emergent strong zero mode through local Floquet engineering (23 pages)	064303
Bhaskar Mukherjee, Ronald Melendrez, Marcin Szyniszewski, Hitesh J. Changlani, and Arijeet Pal	
Light bipolarons in a system of electrons coupled to dispersive optical phonons (8 pages)	064304
K. Kovač and J. Bonča	
Prethermalization in aperiodically kicked many-body dynamics (14 pages)	064305
Jin Yan, Roderich Moessner, and Hongzheng Zhao	
Engineering subharmonic responses beyond prethermalization via Floquet scar states (9 pages)	064306
Ke Huang and Xiao Li	
Ultrafast carrier and phonon dynamics in Bi_2Se_3 under high pressure (8 pages)	064307
Y. Yang, Y. H. Meng, B. R. Lu, F. Jin, Y. G. Shi, F. Hong, S. S. Zhang, X. H. Yu, X. B. Wang, and J. L. Luo	
Radiation-based wave-packet generator in one-dimensional lattices (9 pages)	064308
Bastían Real, Diego Guzmán-Silva, and Rodrigo A. Vicencio	
Mean-field dynamics of an infinite-range interacting quantum system: Chaos, dynamical phase transition, and localization (13 pages)	064309
Bojan Žunkovič and Antonio Zagarra	
Field theory for the dynamics of the open $O(N)$ model (23 pages)	064310
J. Lang, M. Buchhold, and S. Diehl	
Liouvillian-gap analysis of open quantum many-body systems in the weak dissipation limit (10 pages)	064311
Takashi Mori	
Signature of quantum phase transition manifested in quantum fidelity at finite temperature (17 pages)	064312
Protyush Nandi, Sirshendu Bhattacharyya, and Subinay Dasgupta	
Magnetism	
Inelastic neutron scattering and muon spin relaxation investigations of the deuterated Kondo lattices CeNiSnD_x (8 pages)	064401
X. Y. Zheng, D. T. Adroja, B. Chevalier, Z. Y. Shan, A. D. Hillier, H. Q. Yuan, and M. Smidman	

(Continued)

ARTICLES

Structure, structural phase transitions, mechanical properties, defects

- Melting of the two-dimensional solid phase in the Gaussian core model (*13 pages*) 064101
Alejandro Mendoza-Coto, Valéria Mattiello, Rômulo Cenci, Nicolás Defenu, and Lucas Nicolao
- Evidence for dissociation in shock-compressed methane (*9 pages*) 064102
G. Tabak, J. R. Rygg, M. Millot, Y.-J. Kim, S. Hamel, P. M. Celliers, D. E. Fratanduono, S. Ali, D. Erskine, T. R. Boehly, T.-A. Suer, N. Dasenbrock-Gammon, R. Dias, S. Zhang, S. X. Hu, L. E. Hansen, B. J. Henderson, M. Zaghoo, T. Ogawa, D. Murayama, K. Miyanishi, N. Ozaki, T. Sano, R. Jeanloz, D. G. Hicks, J. H. Eggert, and G. W. Collins
- Direct ultrasonic evidence for heterophase oscillations near the 186 K transition in KMnF_3 (*6 pages*) 064103
Jean Toulouse
- Temperature dependence of electric-field gradient in Zn and Cd: Replacing the $T^{3/2}$ law (*10 pages*) 064104
H. Haas
- Dirac hierarchy in confined Mie resonance photonic crystals (*7 pages*) 064105
Yuxin Zhang, Xiaoyu Dai, and Yuanjiang Xiang
- Manipulating the electrical properties of conductive substoichiometric titanium oxides (*11 pages*) 064106
Mehmet Gokhan Sensoy, Robert W. Carpick, David J. Srolovitz, and Andrew M. Rappe
- Generalizing odd elasticity theory to odd thermoelasticity for planar materials (*6 pages*) 064107
Martin Ostoja-Starzewski and Piotr Surówka
- Sampling-free computation of finite temperature material properties in isochoric and isobaric ensembles using the mean-field anharmonic bond model (*10 pages*) 064108
Raynol Dsouza, Marvin Poul, Liam Huber, Thomas D. Swinburne, and Jörg Neugebauer
- Structural diversity of molecular nitrogen on approach to polymeric states (*6 pages*) 064109
Alexander F. Goncharov, Iskander G. Batyrev, Elena Bykova, Lukas Brüning, Huawei Chen, Mohammad F. Mahmood, Andrew Steele, Nico Giordano, Timofey Fedotenko, and Maxim Bykov

Inhomogeneous, disordered, and partially ordered systems

- Scattering expansion for localization in one dimension: From disordered wires to quantum walks (*36 pages*) 064201
Adrian B. Culver, Pratik Sathe, and Rahul Roy
- Multifractality in the interacting disordered Tavis-Cummings model (*7 pages*) 064202
F. Mattiotti, J. Dubail, D. Hagenmüller, J. Schachenmayer, J.-P. Brantut, and G. Pupillo
- Engineering a non-Hermitian second-order topological insulator state in quasicrystals (*7 pages*) 064203
Chakradhar Rangi, Ka-Ming Tam, and Juana Moreno
- Front dynamics in the Harper model (*9 pages*) 064204
Gergő Roósz
-  Dynamic heterogeneity at the experimental glass transition predicted by transferable machine learning (*14 pages*) 064205
Gerhard Jung, Giulio Biroli, and Ludovic Berthier

(Continued)

Electrically controllable topological magnetism in multiferroic antiferromagnetic PbVO_3 (9 pages)	L060402
Yonglong Ga, Dongxing Yu, Yong Li, Jiawei Jiang, Liming Wang, Peng Li, Jinghua Liang, Hai Feng, Youguo Shi, and Hongxin Yang	
Composition dependence of bulk properties in the Co-intercalated transition metal dichalcogenide $\text{Co}_{1/3}\text{TaS}_2$ (7 pages)	L060403
Pyeongjae Park, Woonghee Cho, Chaebin Kim, Yechan An, Maxim Avdeev, Kazuki Iida, Ryoichi Kajimoto, and Je-Geun Park	
Anomalous temperature dependence of uniaxial magnetocrystalline anisotropy in the van der Waals ferromagnet Fe_3GeTe_2 (7 pages)	L060404
Jiawei Liu, Liang Zhou, Shuilin Li, Enyue Zhao, and Nujiang Tang	
Generation of out-of-plane polarized spin current in (permalloy, Cu)/EuS interfaces (7 pages)	L060405
Pankhuri Gupta, Niru Chowdhury, Mingran Xu, Prasanta Kumar Muduli, Akash Kumar, Kouta Kondou, Yoshichika Otani, and Pranaba Kishor Muduli	
Repulsive Tomonaga-Luttinger liquid in the quasi-one-dimensional alternating spin- $\frac{1}{2}$ antiferromagnet NaVOPO_4 (6 pages)	L060406
S. S. Islam, Prashanta K. Mukharjee, P. K. Biswas, Mark Telling, Y. Skourski, K. M. Ranjith, M. Baenitz, Y. Inagaki, Y. Furukawa, A. A. Tsirlin, and R. Nath	
Anomalous Hall effect by chiral spin textures in the two-dimensional Luttinger model (7 pages)	L060407
Ryunosuke Terasawa and Hiroaki Ishizuka	
 Reorientation of magnetic stripe domains by mid-infrared pulses (6 pages)	L060408
Maxime Gidding, Carl S. Davies, and Andrei Kirilyuk	
Unconventional metallic ferromagnetism: Nonanalyticity and sign-changing behavior of orbital magnetization in rhombohedral trilayer graphene (6 pages)	L060409
Mainak Das and Chunli Huang	
In-plane multi-q magnetic ground state of $\text{Na}_3\text{Co}_2\text{SbO}_6$ (7 pages)	L060410
Yuchen Gu, Xintong Li, Yue Chen, Kazuki Iida, Akiko Nakao, Koji Munakata, V. Ovidiu Garlea, Yangmu Li, Guochu Deng, I. A. Zaliznyak, J. M. Tranquada, and Yuan Li	
Superfluidity and superconductivity	
Theory of non-Hermitian fermionic superfluidity on a honeycomb lattice: Interplay between exceptional manifolds and Van Hove singularity (7 pages)	L060501
Soma Takemori, Kazuki Yamamoto, and Akihisa Koga	
Breakdown of sound in superfluid helium (7 pages)	L060502
Marc D. Nichitiu, Craig Brown, and Igor A. Zaliznyak	
Spontaneous voltage peaks in superconducting Nb channels without engineered asymmetry (6 pages)	L060503
Shamashis Sengupta, Miguel Monteverde, Sara Loucif, Florian Pallier, Louis Dumoulin, and Claire Marrache-Kikuchi	
Unconventional periodicities of the Little-Parks effect observed in a topological superconductor (7 pages)	L060504
Yufan Li, Xiaoying Xu, Shu-Ping Lee, and C. L. Chien	

(Continued)

LETTERS

Structure, structural phase transitions, mechanical properties, defects

- Multipole higher-order topological semimetals (6 pages) L060101
Yajuan Qi, Zhaojian He, Ke Deng, Jing Li, and Yuhua Wang
- Melting anisotropy in crystalline solids (7 pages) L060102
P. Renganathan and Y. M. Gupta
- Internal structure of metal vacancies in cubic carbides (6 pages) L060103
Ekaterina Smirnova, Mehdi Nourazar, and Pavel A. Korzhavii
- Spin-phonon coupling suppressing the structural transition in perovskite-like oxide (7 pages) L060104
Shalini Badola, Supratik Mukherjee, Greeshma Sunil, B. Ghosh, Devesh Negi, G. Vaitheeswaran,
A. C. Garcia-Castro, and Surajit Saha

Inhomogeneous, disordered, and partially ordered systems

- Scattering expansion for localization in one dimension (7 pages) L060201
Adrian B. Culver, Pratik Sathe, and Rahul Roy

Dynamics, dynamical systems, lattice effects:

- Electric analog of magnons in order-disorder ferroelectrics (6 pages) L060301
Ping Tang and Gerrit E. W. Bauer
- Interactions and integrability in weakly monitored Hamiltonian systems (6 pages) L060302
Bo Xing, Xhek Turkeshi, Marco Schiró, Rosario Fazio, and Dario Poletti
- Nonreciprocal coherent all-optical switching between magnetic multistates (6 pages) L060303
T. Zalewski, V. A. Ozerov, A. Maziewski, I. Razdolski, and A. Stupakiewicz
- Huge anharmonic effects in delta plutonium (7 pages) L060304
François Bottin, Romuald Béjaud, Bernard Amadon, Lucas Baguet, Marc Torrent,
Aloïs Castellano, and Johann Bouchet
- Disorder-free localization as a purely classical effect (7 pages) L060305
Pablo Sala, Giuliano Giudici, and Jad C. Halimeh

Magnetism

- Spin splitting tunable optical band gap in polycrystalline GdN thin films for spin filtering (7 pages) L060401
G. L. S. Vilela, G. M. Stephen, X. Gratens, G. D. Galgano, Yasen Hou, Y. Takamura, D. Heiman,
A. B. Henriques, G. Berera, and J. S. Moodera



(Continued)



2469-9950(20240201)109:6;1-D