

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages L020201–022624, and Part B pages 022801–029901(E).

PART A

LETTERS

Fundamental concepts

Spatiotemporal entanglement of the vacuum (6 pages) L020201
Pravin Kumar Dahal and Kieran Hymas

Normal-mode-splitting-induced synchronization blockade in coupled quantum van der Pol
oscillators (7 pages) L020202
Nissi Thomas and M. Senthilvelan

Quantum information science

Towards gravimetry enhancement with squeezed states (7 pages) L020401
Oziel R. de Araujo, Lucas S. Marinho, Jonas F. G. Santos, and Carlos H. S. Vieira

Atomic and molecular structure and dynamics; high-precision experiments; chemical physics

Comprehensive assessment of Th³⁺ properties for nuclear clock and fundamental physics
applications (7 pages) L020801
A. Chakraborty and B. K. Sahoo

Light-induced processes in atomic-scale systems

General approximator for strong-field ionization rates (7 pages) L021101
Manoram Agarwal, Armin Scrinzi, and Vladislav S. Yakovlev

Ultracold systems and matter waves

Resonant light scattering by a slab of ultracold atoms (6 pages) L021301
R. Vatr , R. Lopes, J. Beugnon, and F. Gerbier

Universal analytic solution for the quantum transport of structured matter waves in magnetic optics (6 pages) L021302
N. V. Filina and S. S. Baturin

Photonics, nonlinear optics, and optomechanics

Broadband quantum terahertz wave generation in laser-induced plasmas (7 pages) L021501
Yi-Ben Wang, Zhuang-Wei Ding, Marcelo F. Ciappina, and Xue-Bin Bian



(Continued)



2469-9926(202602)113:2:A;1-Y

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Quantum optics

- Unveiling the self-orthogonality at exceptional points in driven $\mathcal{PT}$ -symmetric systems (*6 pages*) L021701
Alexander Fritzsche, Riccardo Sorbello, Ronny Thomale, and Alexander Szameit

ARTICLES

Fundamental concepts

- Recognizing critical lines via entanglement in non-Hermitian systems (*14 pages*) 022201
Keshav Das Agarwal, Tanoy Kanti Konar, Leela Ganesh Chandra Lakkaraju, and Aditi Sen(De)
- Forward-time equivalent of a retrocausal diffusion hidden-variable model for quantum mechanics (*7 pages*) 022202
William S. DeWitt and Benjamin H. Feintzeig
- Control of memory effects in a spin-boson system by periodic driving (*11 pages*) 022203
Pietro Marco Follia, Bassano Vacchini, and Heinz-Peter Breuer
- Geometry-controlled freezing and revival of Bell nonlocality through environmental memory (*7 pages*) 022204
Mohamed Hatifi
- Conclusive exclusion of quantum states with group action (*7 pages*) 022205
Hongshun Yao and Xin Wang
- Nonequilibrium steady states in multibath quantum collision models (*12 pages*) 022206
Ronan McElvogue, Andrew K. Mitchell, Gabriel T. Landi, and Steve Campbell
- Tracking adiabaticity in nonequilibrium many-body systems using x-ray photoemission from metals as a stringent test (*22 pages*) 022207
Gustavo Diniz, Felipe D. Picoli, Luiz N. Oliveira, and Irene D'Amico
- Dimensional control of the coherence time of scattered light in cold atom clouds (*9 pages*) 022208
Ana Cipris, Mateus A. F. Biscassi, J. C. C. Capella, Martial Morisse, Hani Naim, Hugo Sedlacek, Apoorav Singh Deo, Stephan Asselie, Robin Kaiser, Raul Celistrino Teixeira, Romain Bachelard, and Mathilde Hugbart
- Quantum steering as a probe of energy transfer in quantum batteries (*8 pages*) 022209
Meng-Long Song, Zan Cao, Xue-Ke Song, Liu Ye, and Dong Wang
- Work extraction from a quantum battery charged through an array of coupled cavities (*9 pages*) 022210
I. Beder, D. Ferraro, and P. A. Brandão
- Mpemba effect in self-contained quantum refrigerators: Accelerated cooling (*12 pages*) 022211
Sayan Mondal and Ujjwal Sen
- General framework for estimating the ultimate precision limit in Bayesian quantum metrology (*9 pages*) 022212
B. M. Escher
- Synchronization effects in a periodically driven two-level system (*9 pages*) 022213
Federico Settimo and Bassano Vacchini
- Lower bounds to variational problems with guarantees (*6 pages*) 022214
J. Eisert

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Optimal min-entropy uncertainty relation (<i>10 pages</i>)	022215
Alexandra Muşat, Andrei Tănăsescu, and Pantelimon George Popescu	
Contextuality-enhanced quantum state discrimination under fixed failure probability (<i>11 pages</i>)	022216
Min Namkung and Hyang-Tag Lim	
Fluctuation theorems for multipartite quantum coherence and correlation dynamics (<i>11 pages</i>)	022217
Kun Zhang, Mo-Yang Ni, Hai-Long Shi, Xiao-Hui Wang, and Jin Wang	
Single-shot antidistinguishability of unitary operations (<i>7 pages</i>)	022218
Satyaki Manna and Anandamay Das Bhowmik	
Fringe visibility and which-way information in Young's double-slit experiments with light scattered from single atoms (<i>5 pages</i>)	022219
Hanzhen Lin, Yu-Kun Lu, Vitaly Fedoseev, Yoo Kyung Lee, Jiahao Lyu, and Wolfgang Ketterle	
Quantum information science	
Better bounds on finite-order Grothendieck constants with applications to Bell nonlocality (<i>11 pages</i>)	022401
Sébastien Designolle, Tamás Vértesi, and Sebastian Pokutta	
Improving quantum walk metrology with split-step quantum walk (<i>10 pages</i>)	022402
Majid Moradi and Mostafa Annabestani	
Metrological approach to the emergence of classical objectivity (<i>9 pages</i>)	022403
Anthony Kiely, Diana A. Chisholm, Akram Touil, Sebastian Deffner, Gabriel Landi, and Steve Campbell	
Transfer of arbitrary quantum states from one input cavity to multiple output cavities via a superconducting-qubit switch (<i>12 pages</i>)	022404
Qi Zhang, Liang Bin, Yu Zhang, Wen-Hao Kong, Jia-Heng Ni, Li Yu, Yi-Hao Kang, Qi-Ping Su, and Chui-Ping Yang	
Entanglement and distillation from symmetric positive maps (<i>11 pages</i>)	022405
Albert Rico	
Entanglement-cost hierarchies in quantum fragmented mixed states (<i>8 pages</i>)	022406
Subhayan Sahu, Yahui Li, and Pablo Sala	
Information recycling in coherent-state discrimination (<i>11 pages</i>)	022407
L. F. Melo, János A. Bergou, and Alexandre B. Tacla	
Protecting fidelity of quantum teleportation by quantum interferences (<i>10 pages</i>)	022408
Ashish Anil and R. Arun	
Realization of classification tasks via complex graph neural networks based on the continuous-time quantum walk (<i>10 pages</i>)	022409
Jiaqi Sun and Zhihao Bian	
Enhanced spreading in continuous-time quantum walks using aperiodic temporal modulation of defects (<i>9 pages</i>)	022410
Jefferson J. Ximenes, Marcelo A. Pires, and José M. Villas-Bôas	
Role of quantum state texture in probing resource theories and quantum phase transitions (<i>12 pages</i>)	022411
Ayan Patra, Tanoy Kanti Konar, Pritam Halder, and Aditi Sen(De)	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Characterization and generation of a standard-quantum-limit-beating catlike state through repetitive measurements (<i>15 pages</i>)	022412
Mamiko Tatsuta, Yuichiro Matsuzaki, Hiroki Kuji, Ryusuke Hamazaki, and Akira Shimizu	
Bosonic error correction codes based on states generated via particle-number-resolving measurements (<i>16 pages</i>)	022413
S. B. Korolev and T. Yu. Golubeva	
Quantum state tomography for tensor networks in two dimensions (<i>16 pages</i>)	022414
Zhen Qin and Zhihui Zhu	
Rank-based entanglement detection for bound entangled states (<i>12 pages</i>)	022415
Aabhas Gulati	
Nonexistence of maximally entangled mixed states for a fixed spectrum (<i>10 pages</i>)	022416
Gonzalo Camacho and Julio I. de Vicente	
Non-Abelian interference of topological edge states (<i>10 pages</i>)	022417
Shi Hu, Meiqing Hu, and Zhoutao Lei	
Quantum metrology in the presence of correlated noise via Markovian embedding (<i>11 pages</i>)	022418
Arpan Das and Rafał Demkowicz-Dobrzański	
Multiresonator quantum memory with atomic ensembles (<i>22 pages</i>)	022419
S. A. Moiseev	
Efficient nonclassical state preparation via generalized parity measurement (<i>11 pages</i>)	022420
Chen-yi Zhang and Jun Jing	
Flexible fault-tolerant gate gadgets (<i>6 pages</i>)	022421
Eric Kubischta and Ian Teixeira	
Ability of entanglement and purity to help to detect systematic experimental errors (<i>19 pages</i>)	022422
Julia Freund, Francesco Basso Basset, Tobias M. Krieger, Alessandro Laneve, Mattia Beccaceci, Michele B. Rota, Quirin Buchinger, Saimon F. Covre da Silva, Sandra Stroj, Sven Höfling, Tobias Huber-Loyola, Richard Kueng, Armando Rastelli, Rinaldo Trotta, and Otfried Gühne	
Expressivity limits in quantum walk-based optimization (<i>12 pages</i>)	022423
Guilherme Adamatti Bridi, Debbie Lim, Lirandë Pira, Raqueline Azevedo Medeiros Santos, Franklin de Lima Marquezino, and Soumik Adhikary	
Generalization bounds in hybrid quantum-classical machine learning models (<i>11 pages</i>)	022425
Tongyan Wu, Amine Bentellis, Alona Sakhnenko, and Jeanette Miriam Lorenz	
Expediting quantum state transfer through the long-range extended XY model (<i>12 pages</i>)	022426
Sejal Ahuja, Tanoy Kanti Konar, Leela Ganesh Chandra Lakkaraju, and Aditi Sen(De)	
Noise-resilient negative quantum states (<i>12 pages</i>)	022427
Jai Lalita, Pavithran Iyer, and Subhashish Banerjee	
Resources for bosonic metrology: Quantum-enhanced precision from a superselection rule perspective (<i>19 pages</i>)	022428
Astghik Saharyan, Eloi Descamps, Arne Keller, and Pérola Milman	
Efficient certification of high-dimensional entanglement (<i>24 pages</i>)	022429
Yiwen Wu, Zihao Li, and Huangjun Zhu	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Censorship of quantum resources against quantum catalysis (<i>11 pages</i>)	022430
Julien Pinske and Klaus Mølmer	
Fundamental trade-off relation in probabilistic entanglement generation (<i>19 pages</i>)	022431
Yuanbo Chen and Yoshihiko Hasegawa	
Optimal birobust quantum control by inverse optimization (<i>15 pages</i>)	022432
Ghaïeth Hezzi, Meri Harutyunyan, Ghassen Dridi, Mohamed Mejatty, and Stéphane Guérin	
Improving the efficiency of quantum annealing with controlled diagonal catalysts (<i>13 pages</i>)	022433
Tomohiro Hattori and Shu Tanaka	
Algorithm for estimating α -stabilizer Rényi entropies via purity (<i>11 pages</i>)	022434
Benjamin Stratton	
All-versus-nothing nonlocality for multiple observers in quantum networks (<i>8 pages</i>)	022435
Qing Zhou, Xin-Yu Xu, Shu-Ming Hu, Jun-Hao Wei, Nuo-Ya Yang, Dong-Fen Li, Li Li, Nai-Le Liu, and Kai Chen	
Maxwell's demon for quantum transport (<i>16 pages</i>)	022436
Kangqiao Liu, Masaya Nakagawa, and Masahito Ueda	
Efficient quantum access model for sparse structured matrices using linear combination of “things” (<i>17 pages</i>)	022437
Abeynaya Gnanasekaran and Amit Surana	
Unified framework for quantum code embedding (<i>23 pages</i>)	022438
Andrew C. Yuan	
Two-dimensional quantum central limit theorem by quantum walks (<i>23 pages</i>)	022439
Keisuke Asahara, Daiju Funakawa, Motoki Seki, and Akito Suzuki	
Quantifying high-dimensional entanglement via classes of symmetric measurements (<i>11 pages</i>)	022440
Fan Wu and Liang Tang	
Classifying locally distinguishable sets: No activation across bipartitions (<i>9 pages</i>)	022441
Atanu Bhunia, Saronath Halder, and Ritabrata Sengupta	
Continuous quantum correction on Markovian and non-Markovian models (<i>19 pages</i>)	022442
Juan Garcia Nila and Todd A. Brun	
Unified fidelity-based framework for quantum speed limits in open quantum systems (<i>17 pages</i>)	022443
Tristán M. Osán, Yanet Alvarez, Mariela Portesi, and Pedro W. Lambert	
Maximum residual strong monogamy inequality for multiqubit entanglement (<i>8 pages</i>)	022444
Dong-Dong Dong, Xue-Ke Song, Liu Ye, Dong Wang, and Gerardo Adesso	
Finite-size secret-key rates of discrete modulation continuous-variable quantum key distribution under Gaussian attacks (<i>22 pages</i>)	022445
Gabriele Staffieri, Giovanni Scala, and Cosmo Lupo	
Generating large-scale Greenberger-Horne-Zeilinger-like states in lattice spin systems (<i>15 pages</i>)	022446
Xuanchen Zhang, Yaofeng Chen, and Yong-Chun Liu	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Heisenberg-limited quantum algorithms for multiple observables estimation (<i>41 pages</i>)	022447
Yuki Koizumi, Kaito Wada, Wataru Mizukami, and Nobuyuki Yoshioka	
Efficient prime-field framework for the construction and characterization of high-dimensional entangled states (<i>12 pages</i>)	022448
Suchandan Ghosh and Avishek Adhikari	
Entropic uncertainty under indefinite causal order and input-output direction (<i>15 pages</i>)	022449
Göktuğ Karpat	
Resilience of the surface code to error bursts (<i>11 pages</i>)	022450
Shi Jie Samuel Tan, Christopher A. Pattison, Matt McEwen, and John Preskill	
Iterative algorithm for minimum-error quantum state discrimination: Convergence for pure-state ensembles (<i>9 pages</i>)	022451
Xin Lü and Shi-Hai Dong	
Hybrid analog teleportation-direct transmission in noisy bosonic channels (<i>8 pages</i>)	022452
Uesli Alushi, Simone Felicetti, and Roberto Di Candia	
Factorizability of optimal quantum sequence discrimination under maximum-confidence measurements (<i>12 pages</i>)	022453
Donghoon Ha and Jeong San Kim	
Generalized symplectic representation of local Clifford operators (<i>12 pages</i>)	022454
Cai-Hong Wang, Jiang-Tao Yuan, Zhi-Hao Ma, Shao-Ming Fei, and Shang-Quan Bu	
Clifford transformations for fermionic quantum systems: From Pauli and Majorana operators to Dirac fermions (<i>18 pages</i>)	022455
I. Magoulas and F. A. Evangelista	
Expanding the class of free fermions via twin-collapse methods (<i>26 pages</i>)	022456
Jannis Ruh and Samuel J. Elman	
Quantum technologies	
Enhanced sensing of a weak Stark field under the influence of Aubry-André-Harper criticality (<i>11 pages</i>)	022601
Ayan Sahoo and Debraj Rakshit	
Discretely modulated continuous-variable quantum key distribution without phase compensation (<i>8 pages</i>)	022602
Mingze Wu, Xuesong Xu, Song Yu, Bingjie Xu, and Yichen Zhang	
Coherence buffering via multiple excitations: Duty-cycle engineering and Dick-noise suppression in optical lattice clocks (<i>13 pages</i>)	022603
Jin Cao, Benquan Lu, Xiaotong Lu, and Hong Chang	
Scalable native multiqubit gates via engineered noncomputational-state interactions in superconducting fluxonium qubits (<i>12 pages</i>)	022604
Peng Zhao, Peng Xu, and Zheng-Yuan Xue	
Quantifying the upper limit of backflash attack in quantum key distribution (<i>10 pages</i>)	022605
Jialei Su, Junxuan Liu, Zihao Chen, Mingyang Zhong, Qingquan Peng, Jiangfang Ding, Yijun Wang, Anqi Huang, and Ying Guo	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Complexity in multiqubit and many-body systems (<i>12 pages</i>)	022606
Imre Varga	
Scalable simulation of fermionic encoding performance on noisy quantum computers (<i>23 pages</i>)	022607
Emiliia Dyrenkova, Raymond Laflamme, and Michael Vasmer	
Robustness enhancement of universal noncyclic geometric gates via evolution optimization (<i>12 pages</i>)	022608
Zi-Hao Qin, Yi-Han Yuan, Yan Liang, Zheng-Yuan Xue, and Tao Chen	
Understanding qubit trajectories in parametrized quantum circuits (<i>10 pages</i>)	022609
Seungcheol Oh, Chaemoon Im, Soohyun Park, and Joongheon Kim	
Quantum Slater-exponent optimization for electronic-structure calculations on simulated noisy intermediate-scale quantum computers (<i>14 pages</i>)	022610
Difa Farhani Hakim, Teguh Budi Prayitno, Pak Shen Choong, Yanoar Pribadi Sarwono, and Leong-Chuan Kwek	
Robust certification of quantum instruments through a sequential communication game (<i>12 pages</i>)	022611
Pritam Roy, Subhankar Bera, A. S. Majumdar, and Shiladitya Mal	
Ultrafast switching of telecom photon-number states (<i>13 pages</i>)	022612
Kate L. Fenwick, Frédéric Bouchard, Alicia Sit, Timothy Lee, Andrew H. Proppe, Guillaume Thekkadath, Duncan England, Philip J. Bustard, Jeff S. Lundeen, and Benjamin J. Sussman	
Optimal control of geometric phase in pairs of interacting atoms traveling along two-dimensional closed paths (<i>13 pages</i>)	022613
Omar Morandi	
Global-scale quantum networking using hybrid-channel quantum repeaters with relays based on a chain of balloons (<i>17 pages</i>)	022614
Pei-Xi Liu, Yu-Ping Lin, Zong-Quan Zhou, Chuan-Feng Li, and Guang-Can Guo	
Efficient charging of quantum batteries via non-Markovian squeezed reservoirs (<i>12 pages</i>)	022615
Kai Xu, Jin-Huan Zhang, Han-Jie Zhu, Hong-Guo Li, Wei Qin, and Wu-Ming Liu	
Fidelity relations in an array of neutral atom qubits: Experimental validation of control noise (<i>12 pages</i>)	022616
D. A. Janse van Rensburg, R. J. P. T. de Keijzer, R. C. Venderbosch, Y. van der Werf, J. J. del Pozo Mellado, R. S. Lous, E. J. D. Vredenbregt, and S. J. J. M. F. Kokkelmans	
Leveraging analog neutral-atom quantum computers for diversified pricing in hybrid column-generation frameworks (<i>19 pages</i>)	022617
Cédric Perron, Yves Bérubé-Lauzière, and Victor Drouin-Touchette	
Quantum router of silicon-vacancy centers via a diamond waveguide (<i>9 pages</i>)	022618
Wen-Jie Zhang, Xi Yan, and Jun-Hong An	
Experimental single-query discrimination of entangling unitaries using local operations and classical communication on a programmable silicon photonic chip (<i>18 pages</i>)	022619
Xiaoqian Zhang (张晓倩), Weiqi Luo (罗伟其), Lvzhou Li (李绿周), Zhihao Li (李志浩), and Maolin Luo (罗茂林)	
Exact analysis of ac sensors based on Floquet time crystals (<i>18 pages</i>)	022620
Andrei Tsypilnikov, Matheus Fibger, and Fernando Iemini	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Replacement-type quantum gates (21 pages)	022621
Florian Ginzl, Javad Kazemi, Valentin Torggler, and Wolfgang Lechner	
Resource estimation for entanglement routing in quantum networks (14 pages)	022622
Manik Dawar, Ralf Riedinger, Nilesh Vyas, and Paulo Mendes	
Ensemble propagators for quantum systems (15 pages)	022623
Vishesh Kaushik and Navin Khaneja	
Quantum keyless private communication under intense background noise (11 pages)	022624
Pedro Neto Mendes, Davide Rusca, Hugo Zbinden, and Emmanuel Zambrini Cruzeiro	

PART B

Atomic and molecular structure and dynamics; high-precision experiments; chemical physics

Chiral asymmetry in elastic scattering of vortex electrons by molecules (14 pages)	022801
Valentina Kolovertnova, Kirill V. Bazarov, and Oleg I. Tolstikhin	
Atomic polarizabilities for excited states of the $2s^2 2p^2$ ($3s$, $3p$) configurations of atomic nitrogen determined from the static Stark-effect shifts at high electric fields (10 pages)	022802
Slawomir Werbowy	
Nonlocal spatial correlations in an interacting atomic gas (6 pages)	022803
C. Wang, A. Li, Y. Lu, S. K. Kanungo, S. Yoshida, F. B. Dunning, and T. C. Killian	
Quantum friction on a rotating pair of atomic oscillators at all temperatures and all distances (22 pages)	022804
Michael Vaz, Stefan Yoshi Buhmann, and Hervé Bercegol	
Complete range of van der Waals attraction mediated by the quantum vacuum at all temperatures (13 pages)	022805
Michael Vaz, Stefan Yoshi Buhmann, and Hervé Bercegol	
All-order Wichmann-Kroll contribution in heavy electronic and exotic atoms (8 pages)	022806
Jonas Sommerfeldt and Paul Indelicato	
Electrostatic potentials and electron densities of atoms of transuranic elements ($Z = 93-120$) (5 pages)	022807
I. I. Tupitsyn, Inga Yu. Tolstikhina, and V. P. Shevelko	
Transfer excitation of He^+ in collisions of C^{4+} , N^{5+} , and O^{6+} with He (11 pages)	022808
Yuki Nishimura, Kento Shimada, Ling Liu, Jianguo Wang, and Hajime Tanuma	
<i>Ab initio</i> calculations of the static and dynamic polarizability of BaOH (11 pages)	022809
Eifion H. Prinsen, Anastasia Borschevsky, Steven Hoekstra, Achintya K. Dutta, Sudipta Chakraborty, Bart J. Schellenberg, Lukáš F. Pašteka, and I. Agustín Aucar	
Magic wavelengths and triple magic trapping conditions for $5s^2 \ ^1S_0$ and $5s5p \ ^3P_{0,2}$ states of Sr atoms (14 pages)	022810
Yan-Min Wang, Qing-Yi Liu, Yong-Bo Tang, Lei Wu, Deng-Hong Zhang, Chen-Zhong Dong, and Jun Jiang	
Parts-per-million-accurate determination of the $K\alpha$ photoionization resonance of Be-like oxygen with resolution of its $^{16}\text{O} - ^{18}\text{O}$ isotopic shift (10 pages)	022811
Jonas Danisch, Marc Botz, Chintan Shah, Moto Togawa, Joschka Goes, Dominic Hache, Filipe Grilo, Pedro Amaro, Vladimir A. Yerokhin, Steffen Kühn, Awad Mohamed, Roberta Totani, Monica de Simone, Stefano Orlando, Thomas Pfeifer, Fabrizio Nicastro, Marcello Coreno, and José R. Crespo López-Urrutia	

(Continued)

Determination of nuclear quadrupole moments of ^{25}Mg , ^{78}Sr , and $^{135,137}\text{Ba}$ via configuration-interaction combined with a coupled-cluster approach (10 pages)	022812
Yong-Bo Tang	
Relativistic calculations of energy levels, field shift factors, and polarizabilities of mercury and copernicium (12 pages)	022813
Hongxu Liu, Jize Han, Yanmei Yu, Yanfeng Ge, Yong Liu, and Zhiguo Huang	
Effect of correlation on the elastic scattering of slow positrons from molecules (18 pages)	022814
Snigdha Sharma and Dhanoj Gupta	
Precision test of bound-state QED at intermediate Z with kaonic neon (8 pages)	022815
Manti S., F. Sgaramella, L. Abbene, C. Amsler, F. Artibani, M. Bazzi, G. Borghi, D. Bosnar, M. Bragadireanu, A. Buttacavoli, M. Carminati, A. Clozza, F. Clozza, L. De Paolis, R. Del Grande, K. Dulski, C. Fiorini, I. Frišćić, C. Guaraldo, M. A. Iliescu, P. Indelicato, M. Iwasaki, A. Khreptak, J. Marton, P. Moskal, H. Ohnishi, K. Piscicchia, F. Principato, A. Scordo, M. Silarski, D. Sirghi, F. Sirghi, M. Skurzok, J. Sommerfeldt, A. Spallone, K. Toho, L. Toscano, O. Vazquez Doce, J. Zmeskal, and C. Curceanu (SIDDHARTA-2 Collaboration)	
Retrieval of missing small-angle scattering data in gas-phase diffraction experiments (11 pages)	022816
Yanwei Xiong, Nikhil Kumar Pachisia, and Martin Centurion	
Relativistic coupled-cluster treatment of magnetic hyperfine structure of the $X^2\Pi$ and $A^2\Sigma^+$ states of OH isotopologues (8 pages)	022817
D. P. Usov, Y. S. Kozhedub, A. V. Stolyarov, L. V. Skripnikov, V. M. Shabaev, and I. I. Tupitsyn	
Positron-molecule annihilation resonances beyond the fundamental vibrations (14 pages)	022818
A. Mundaplackal, S. Ghosh, J. R. Danielson, E. Arthur-Baidoo, and C. M. Surko	
Internal-energy-driven H_3^+ destruction in the isomerization of a methanol dication (8 pages)	022819
Sanbiao Qu, Enliang Wang, Tuo Liu, Xingyu Guo, Wenguang Wu, Zhaopeng Xing, Chunkai Xu, Xu Shan, Jing Chen, and Xiangjun Chen	
Light-induced processes in atomic-scale systems	
Molecular high-harmonic generation under the influence of a significant dipole moment (12 pages)	023101
Xi Chu	
Shaping cold-atom clouds with a vortex beam (15 pages)	023102
Arianna Bertoluzza, Sonja Lorenz, Paul Hampp, Moriz Härle, Daniel Braun, David Petrosyan, József Fortágh, and Andreas Günther	
Photoionization time delay of open-shell atoms: Na $3s$ near the Cooper minimum (6 pages)	023103
T. W. Gorczyca and S. T. Manson	
XUV transient absorption study of coherent hole oscillation in Ar^+ (15 pages)	023104
Nisnat Chakraborty, Miguel A. Alarcón, Michael P. McDonnell, Karl Hauser, Islam Shalaby, Dipayan Biswas, James K. Wood, Nikolay V. Golubev, and Arvinder Sandhu	
Maintaining ultralong-lived charge migration in ionized iodoacetylene with a laser pulse train (7 pages)	023105
Yijin Zhou, Dongming Jia, Xinran Ren, Huihui Wang, and Yonggang Yang	
Magneto-optical-trap loading in a large optical-access experiment (16 pages)	023106
M. Gaudesius, J. M. Lee, L. A. Kraft, J. C. Gordon, and G. W. Biedermann	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Dynamical confinement and magnetic traps for charges and spins (<i>6 pages</i>)	023107
Afshin Besharat and Alexander A. Penin	
Modulating the high-order harmonic generation in solids by controlling the tunneling window in ω - 3ω laser fields (<i>9 pages</i>)	023108
Yu Zhao, Shuang Wang, Hui-Rong Wang, and Jun Zhang	
Phase-matched generation of spatially resolved, elliptically polarized, high-order harmonics during macroscopic propagation in an atomic gas medium (<i>17 pages</i>)	023109
Bin Lu, Xiangyu Tang, Chi Zhang, Zhiming Yin, Jiahao You, Ziyang Guo, Shengfei Wu, Zengqiang Yang, Bincheng Wang, and Cheng Jin	
Unveiling subcycle excitation dynamics of electrons in strong laser fields (<i>11 pages</i>)	023110
Mingqing Liu and Xiaoyun Zhao	
Light-induced, fictitious magnetic trapping of cold alkali-metal atoms using an optical-tweezer–nanofiber hybrid platform (<i>13 pages</i>)	023111
Alexey Vylegzhanin, Dylan J. Brown, Sergei Abdrakhmanov, and Síle Nic Chormaic	
Laser-induced Coulomb explosion of the LiI molecule and its dimer (<i>12 pages</i>)	023112
Henrik H. Kristensen, Emil Hansen, Jeppe K. Christensen, Simon H. Albrechtsen, Frank Jensen, and Henrik Stapelfeldt	
Nonadiabatic effect in high-order harmonic generation revealed by a fully analytical method (<i>15 pages</i>)	023113
Fengjian Sun, Pei Huang, Alexandra S. Landsman, Yanpeng Zhang, Liang-Wen Pi, and Yuxi Fu	
Two-dimensional electron dynamics reconstructed by polarization-resolved high harmonic spectroscopy (<i>8 pages</i>)	023114
Sen Qiao, Bao Wang, Jiapeng Li, and Liang Li	
Forward- and backward-scattering photoelectron holography controlled by the amplitude ratio in parallel linearly polarized laser pulses (<i>8 pages</i>)	023115
Ying Guo, Shu-Juan Yan, Yi-Xuan Chen, Zi-Jian Xiang, Xue-Shen Liu, and Jing Guo	
Floquet-generalized light-induced-phase model: From diabatic dynamics to complete line-shape control (<i>9 pages</i>)	023116
Di Zhao, Xuhan Wang, Chen-Wei Jiang, Shao-Yan Gao, Peng-Bo Li, and Fu-li Li	
 Spatially localized optical excitations in a doped solid using robust broadband composite pulses (<i>11 pages</i>)	023117
Niels Joseph, Nikolay V. Vitanov, and Thomas Halfmann	
Electronic bridge processes in ^{229}Th -doped LiCaAlF_6 and LiSrAlF_6 (<i>15 pages</i>)	023118
Tobias Kirschbaum, Martin Pimon, Andreas Grüneis, Thorsten Schumm, and Adriana Pálffy	
Quantum feedback cooling of a trapped nanoparticle by using a low-pass filter (<i>13 pages</i>)	023119
Shuma Sugiura and Masahito Ueda	
Ultracold systems and matter waves	
Orbital optical Raman lattice (<i>13 pages</i>)	023301
Zhi-Hao Huang, Kou-Han Ma, Bao-Zong Wang, W. Vincent Liu, and Xiong-Jun Liu	
Three-boson scattering hypervolume for a nonzero orbital angular momentum (<i>18 pages</i>)	023302
Pui In Ip and Shina Tan	

(Continued)

Quantum time crystals and interacting chiral gauge theories in atomic Bose-Einstein condensates: Role of the Page-Wootters mechanism (8 pages)	023304
P. Öhberg and E. M. Wright	
☞ Vortex comb: Eliminating vortices from Bose-Einstein condensates using optical lattices (16 pages)	023305
Shrohan Mohapatra, Andrew J. Schaffer, P. G. Kevrekidis, R. Carretero-González, and B. P. Anderson	
Experimental study of magnetically insensitive transitions in an ultracold Fermi gas of ^{40}K (8 pages)	023306
Biao Shan, Lianghui Huang, Yajing Yang, Yuhang Zhao, Jiahui Shen, Zhuxiong Ye, Liangchao Chen, Zengming Meng, Pengjun Wang, Wei Han, and Jing Zhang	
Coordinate-space representation of a one dimensional odd-parity pseudopotential (8 pages)	023307
Marc Camus-Sais, Abel Rojo-Francàs, Grigori E. Astrakharchik, and Bruno Juliá-Díaz	
Atomtronic routing of dipolar bosons in a four-well star potential (14 pages)	023308
Karin Wittmann W., Leandro H. Ymai, Genessi Sá Neto, and Angela Foerster	
Optimized slice-phase control of mirror pulse in cold-atom interferometry with finite response time (8 pages)	023309
Xueting Fang, Doudou Wang, Kun Yuan, Jie Deng, Qin Luo, Xiaochun Duan, Minkang Zhou, Lushuai Cao, and Zhongkun Hu	
Exact kinetic propagators for coherent state complex Langevin simulations (10 pages)	023310
Thomas G. Kiely, Ethan C. McGarrigle, and Glenn H. Fredrickson	
Emergence of spin-mixed superstripe phases in spin-orbit-coupled spin-1 condensates (19 pages)	023311
Sanu Kumar Gangwar, Rajamanickam Ravisankar, Paulsamy Muruganandam, and Pankaj Kumar Mishra	
Phase diagram and dynamical phases of self-organization of a Bose-Einstein condensate in a transversely pumped red-detuned cavity (19 pages)	023312
Julian Mayr, Maria Laura Staffini, Simon B. Jäger, Corinna Kollath, and Jonathan Keeling	
Ferrodark soliton collisions: Breather formation, pair reproduction, and spin-mass separation (9 pages)	023313
Yixiu Bai, Jiangnan Biguo, and Xiaoquan Yu	
Effects of intertube dipole-dipole interactions in nearly integrable one-dimensional ^{162}Dy gases (11 pages)	023314
Yicheng Zhang, Kangning Yang, Benjamin L. Lev, and Marcos Rigol	
Stable quantum vortices in Lee-Huang-Yang dipolar superfluids (14 pages)	023315
S. Sabari, R. Radha, Lauro Tomio, and B. A. Malomed	
Impact of rotation on a cold-atom interferometer and compensation strategy (16 pages)	023316
Noémie Marquet, Yannick Bidet, Malo Cadoret, Alexis Bonnin, Sylvain Schwartz, Phuong-Anh Huynh, Alexandre Bresson, Antoine Godard, Franck Pereira Dos Santos, Olivier Carraz, and Nassim Zahzam	
Exploring magnetic phases in dual-species Mott insulating spinor lattice gases (8 pages)	023317
Rui-Shan Li, Zong-Zhen Pan, Shi-Jie Yang, and Yi Zheng	
Two-dimensional discrete solitons in the lattice of parallel strings with dipole-dipole interactions (10 pages)	023318
Tianmiao Zhang, Guilong Li, Huan-Bo Luo, Bin Liu, Xunda Jiang, Boris A. Malomed, and Yongyao Li	
Atomic-superfluid heat engines controlled by twisted light (11 pages)	023319
Aritra Ghosh, Nilamoni Daloi, and M. Bhattacharya	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Characterizing superfluid fraction and topological property of supersolids via nonequilibrium dynamics (<i>11 pages</i>)	023320
Biao Dong, Xiao-Fei Zhang, Lin Zhuang, Wei Han, Renyuan Liao, Xue-Ying Yang, Wu-Ming Liu, and Yong-Chang Zhang	
Quenching dynamics of vortices in spin-orbit-coupled Bose-Einstein condensates under a detuning gradient (<i>9 pages</i>)	023321
Juan Wang, Zhenze Fan, and Yan Li	
Anomalous wave transport through correlated disorder (<i>6 pages</i>)	023322
Shubham Dawda, Ernesto Jimenez-Villar, and Aristide Dogariu	
Exploring vibronic dynamics near a sloped conical intersection with trapped Rydberg ions (<i>10 pages</i>)	023323
Abdessamad Belfakir and Weibin Li	
Dynamics of interacting bosons in a two-leg ring ladder with artificial magnetic flux and ac-driven modulations (<i>8 pages</i>)	023324
L. Q. Lai	
Photonics, nonlinear optics, and optomechanics	
Fiber-integrated generation of optical-bottle beams using microcavity-cascade optical tweezers for particle manipulation (<i>12 pages</i>)	023501
Dingxuan Wang, Zhaoqi Ji, Chunlei Jiang, Peng Chen, Xu Liu, Wanjun Chen, Yuxin Zhu, Cun Zhao, Xiufang Wang, Yu Sun, Taiji Dong, Siying Song, and Heyuan Wang	
Topological localization of biphoton states in arrays of nonlinear photonic waveguides (<i>11 pages</i>)	023502
Donghao Wang, Qinglong Qiu, Yu Zhao, Xu Jing, Xiaodong Zheng, Siran Zhao, Yongchun Tao, Guanghui Liu, Chong Sheng, and Liangliang Lu	
Quantum synchronization in a four-node optomechanical system via modulation asymmetry and nonlinear asymmetry (<i>10 pages</i>)	023503
W. D. Yang, J. T. Sun, and H. D. Liu	
Optomechanical systems with linear and quadratic position couplings: Dynamics and optimal estimation (<i>15 pages</i>)	023504
Yaqing Xy Wang, Claudio Sanavio, and Jozsef Zsolt Bernád	
Ultrahigh- Q and near-unity circular dichroism via symmetry-protected bound states in the continuum (<i>9 pages</i>)	023505
Shiyu Yang, Jin Lv, Honghao Zhou, Yandong Zhang, Hao Wang, Hanshao Luo, Xuhao Liang, Ning Zhu, Shirong Lin, and Fengchun Zhang	
Non-Hermitian second-order topological phases and bipolar skin effect in photonic kagome crystals (<i>8 pages</i>)	023506
Xiaosen Yang, Yaru Feng, Abdul Wahab, and Hao Geng	
Quantitative spherometry through all-optical differentiation with a computing metasurface (<i>7 pages</i>)	023507
Yawei Wang, Yunxia Wang, Qibo Xu, and Hua Yang	
Two mechanisms of backward optical forces on Rayleigh particles in structured paraxial light (<i>9 pages</i>)	023508
Tomasz Radożycki	
Correlated quantum Airy photons: An analytical approach (<i>13 pages</i>)	023509
V. Sau, R. Giustozzi, P. Piergentili, D. Vitali, G. Di Giuseppe, S. Ghosh, and U. Roy	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Trap-to-trap free falls with an optically levitated nanoparticle (<i>10 pages</i>)	023510
M. Luisa Mattana, Nicola Carlon Zambon, Massimiliano Rossi, Eric Bonvin, Louisiane Devaud, Martin Frimmer, and Lukas Novotny	
Fast compression of pure-quartic solitons in nonlinear optical fibers via shortcuts to adiabaticity (<i>9 pages</i>)	023511
Chengyu Han, Qian Kong, Ming Shen, and Xi Chen	
Raman amplification of surface plasmon-polaritons: Nonlinear theory (<i>8 pages</i>)	023512
Vasily G. Arkhipkin, Denis A. Ikonnikov, and Sergey A. Myslivets	
Theoretical analysis of optical feedback-controlled emission of dual-wavelength lasers (<i>11 pages</i>)	023513
Mathieu Ladouce, Pablo Marin-Palomo, and Martin Virte	
Products of displaced Laguerre-Gaussian beams (<i>7 pages</i>)	023514
G. Mellado-Villaseñor and B. M. Rodríguez-Lara	
Reducing disorder-induced backscattering in photonic crystal waveguides through inverse design (<i>10 pages</i>)	023515
Dominic Thompson, Antonia Neill, Nir Rotenberg, and Stephen Hughes	
Quasireciprocal Goos-Hänchen shift enhanced by Fano resonance in $\mathcal{PT}$ -symmetric photonic crystals with Weyl semimetal defects (<i>13 pages</i>)	023516
Hao Ni, Dong Zhong, Siliu Xu, Dong Zhao, Xiaoling Chen, Miaomiao Zhao, and Quankun Zhang	
Continuously and reversibly tunable mode-locked fiber laser induced by pump power (<i>6 pages</i>)	023517
Luyao Zhou, Lie Liu, Qiong Wu, Honglin Wen, Qi Li, Yingying Li, Bing Wu, Ting Xu, Ge Wu, and Bo Gao	
Propagation of partially spatially coherent laser beams in instantaneous Kerr media (<i>14 pages</i>)	023518
Bahman Hafizi, Joshua J. Isaacs, Daniel Younis, Luke A. Johnson, Dmitri Kaganovich, and John P. Palastro	
Many-body effects in the higher-order harmonic generation in bulk crystals (<i>10 pages</i>)	023519
A. M. Parks and M. Kolesik	
Simplified vector-beam tomography from intensity measurements (<i>8 pages</i>)	023520
D. G. Braga, M. Gil de Oliveira, G. T. C. Cruz, B. Pinheiro da Silva, W. F. Balthazar, A. Z. Khoury, and J. A. O. Huguenin	
Theory of generalized virtual critical coupling to resonator chains (<i>8 pages</i>)	023521
Luis Cortes-Herrera and Junchi Zhang	
Petahertz-bandwidth spectral combs from the amplified spontaneous emission of a collisional plasma-based x-ray laser (<i>14 pages</i>)	023522
I. R. Khairulin, V. A. Antonov, I. D. Morskoy, and M. Yu. Ryabikin	
Weak-coupling bound states in semi-infinite topological waveguide QED (<i>23 pages</i>)	023523
Savannah Garmon, Gonzalo Ordonez, and Kenichi Noba	
Photon triplets from integrated microrings: A path towards deterministic non-Gaussianity on a chip (<i>11 pages</i>)	023524
Samuel E. Fontaine, J. E. Sipe, Marco Liscidini, and Milica Banić	
Cascaded nonlinear dynamics of dual-frequency-driven soliton molecules in an ultrafast fiber laser (<i>9 pages</i>)	023525
Defeng Zou, Penglai Guo, Yihong Xiao, Minghui Niu, Qiuying Ma, Hong Dang, Xiaohui Li, and Perry Ping Shum	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Autofocusing plasmon along a curved trajectory with Fourier-space modulation (<i>9 pages</i>)	023526
Shibin Wen, Zhang Ruan, Junxi Zhang, Weiqing Lin, Zien Feng, Xiaoke Pan, Baihao Zhang, and Dongmei Deng	
Observable near-axis momentum superkicks in cold atoms under tightly focused vortex illumination (<i>6 pages</i>) . . .	023527
Wiam Al-Drees, Omar M. Aldossary, and Vasileios E. Lembessis	
Quantum optics	
Theory framework of multiplexed photon-number-resolving detectors (<i>19 pages</i>)	023701
Xiaobin Zhao, Hezheng Qin, Hong X. Tang, Linran Fan, and Quntao Zhuang	
Macroscopic Schrödinger-cat states of nonequilibrium electrons induced by cat-state optical driving and projective measurements on the light field (<i>17 pages</i>)	023702
Shohei Imai	
Non-Markovian nonreciprocal interactions in waveguide-based systems (<i>12 pages</i>)	023703
Jun-Cong Zheng, Guoqing Cai, Peng-Bo Li, and Yong Li	
Qubit-assisted enhancement of force sensitivity in an optomechanical system with a Kerr medium (<i>13 pages</i>) . . .	023704
Ying-Jian Zhu, Xue Han, Hong-Fu Wang, and Shou Zhang	
Sensing weak anharmonicities with a passive-active anti-PT-symmetric system (<i>9 pages</i>)	023705
Ya-Wei Zeng, Wei-Xin Chen, Tian-Le Yang, Wan-Jun Su, and Huaizhi Wu	
Time-domain nonlinear quantum interferometry (<i>17 pages</i>)	023706
C. Fruy, A. Théry, B. Hue, W. Legrand, L. Jarjat, J. Craquelin, M. R. Delbecq, A. Cottet, and T. Kontos	
Non-Gaussian states via pump-depleted spontaneous parametric downconversion (<i>21 pages</i>)	023707
Colin Vendromin, Samuel E. Fontaine, and J. E. Sipe	
Controllable superradiance scaling in a photonic waveguide (<i>13 pages</i>)	023708
Xiang Guo and Zhihai Wang	
☞ Persistent subradiant correlations in a disordered ensemble of collectively driven quantum emitters (<i>8 pages</i>) . . .	023709
Nikita Leppenen and Alexander N. Poddubny	
Nonreciprocal light-matter interaction in a plasmonic-photonic cavity with chiral exceptional points (<i>13 pages</i>)	023710
Jing-Feng Liu, Rongbin Su, Yanhui Zhao, and Yu-Wei Lu	
Auxiliary-state-facilitated phase synchronization phenomena in isolated spin systems (<i>17 pages</i>)	023711
Xylo Molenda, S. Zhong, B. Viswanathan, Xingli Li, Y. Yan, A. M. Marino, and D. Blume	
Remotely preparing Schrödinger cat states via non-Gaussian quantum steering in cascaded second-order spontaneous downconversion (<i>11 pages</i>)	023712
Miaomiao Wei, Cui Yang, and Huatang Tan	
Controllable superatom quantum nodes for photon routing in waveguide-based quantum networks (<i>13 pages</i>) . . .	023713
Xiao-Xuan Li, Dong-Xiao Li, Yue-Zhi Zhang, and Wei Nie	
Superradiance lattices under magnetic-sublevel effects (<i>12 pages</i>)	023714
Ruosong Mao and Han Cai	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW A

THIRD SERIES, VOLUME 113, NUMBER 2

FEBRUARY 2026

Enhanced entanglement via phase-controlled dark states in giant atom-waveguide QED (<i>10 pages</i>)	023715
Huiping Zhan, Deyi Kong, and Fei Wang	
Complementary collective spin descriptions of superradiant Ramsey spectroscopy (<i>11 pages</i>)	023716
Ke-Xin Gao, Shi-Lei Su, Gang Chen, Chongxin Shan, Klaus Mølmer, and Yuan Zhang	
Tricritical phenomena induced by higher-order Fermi-surface nesting in a self-organized Fermi gas (<i>16 pages</i>) . . .	023717
Yilun Xu, Feng-Xiao Sun, and Qiongyi He	
Two-photon interference between mutually detuned resonance-fluorescence signals scattered off a semiconductor quantum dot (<i>12 pages</i>)	023718
Guoqi Huang, Jian Wang, Ziqi Zeng, Hanqing Liu, Li Liu, Weijie Ji, Bang Wu, Haiqiao Ni, Zhichuan Niu, Rongzhen Jiao, Davide G. Marangon, and Zhiliang Yuan	
Long-distance cascaded fluorescence of cold cesium atoms coupled to an optical nanofiber (<i>8 pages</i>)	023719
M. Sadeghi, W. Crump, S. Parkins, and M. D. Hoogerland	
Modified Langevin noise formalism for multiple quantum emitters in dispersive electromagnetic environments out of equilibrium (<i>20 pages</i>)	023720
Giovanni Miano, Loris Maria Cangemi, and Carlo Forestiere	
Enhancement of quantum sensing in a dissipatively coupled two-mode system (<i>11 pages</i>)	023721
Hao-Wen Zhang, Dong-Yang Wang, Cheng-Hua Bai, Tian-Xiang Lu, and Shi-Lei Su	
Entanglement between two remote macroscopic magnon spheres induced by atomic coherence (<i>9 pages</i>)	023722
Ye-Ting Yan and Ling Zhou	
Nonlinear dynamics of a Dicke model for V-type atoms (<i>20 pages</i>)	023723
Ofri Adiv, Bernd Krauskopf, and Scott Parkins	
Gaussian approximation and its corrections for the driven-dissipative Kerr model (<i>13 pages</i>)	023724
K. Sh. Meretukov and A. E. Teretenkov	
Spontaneous emission in dipole approximation revisited (<i>23 pages</i>)	023725
P. R. Berman and P. W. Milonni	

ERRATA

Erratum: Relativistic corrections of order $m\alpha^6$: Singular operators and regularization [Phys. Rev. A 112 , 022813 (2025)] (<i>1 page</i>)	029901(E)
V. I. Korobov	