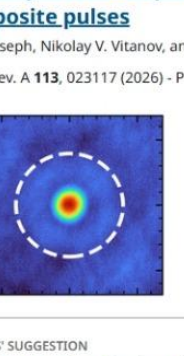
Volume 113, Issue 2
February 2026

HIGHLIGHTED ARTICLES

EDITORS' SUGGESTION
Spatially localized optical excitations in a doped solid using robust broadband composite pulses
Niels Joseph, Nikolay V. Vitanov, and Thomas Halfmann
Phys. Rev. A **113**, 023117 (2026) - Published 23 February, 2026



The authors experimentally demonstrate strong spatial confinement of optical excitations by broadband composite pulse sequences in a rare-earth-ion–doped crystal, which provides significant improvements in localization and robustness against disorder compared to previous experiments.

EDITORS' SUGGESTION
Vortex comb: Eliminating vortices from Bose-Einstein condensates using optical lattices
Shrohan Mohapatra, Andrew J. Schaffer, P. G. Kevrekidis, R. Carretero-González, and B. P. Anderson
Phys. Rev. A **113**, 023305 (2026) - Published 4 February, 2026

The authors report on a combing technique to remove vortices from a quasi-two-dimensional Bose-Einstein condensate through the application and subsequent removal of a one-dimensional optical lattice. The study includes experimental results on a rubidium BEC and numerical simulations based on the Gross-Pitaevskii equation.

EDITORS' SUGGESTION
Persistent subradiant correlations in a disordered ensemble of collectively driven quantum emitters
Nikita Leppenen and Alexander N. Poddubny
Phys. Rev. A **113**, 023709 (2026) - Published 12 February, 2026

The authors explore a strongly driven disordered ensemble of emitters coupled to a single photonic mode. They find that long-lived subradiant correlations persist even in the presence of inhomogeneous broadening, which generally destroys correlations.

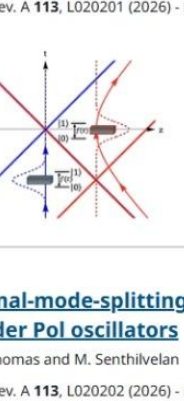
LETTERS

Fundamental concepts

LETTER
Spatiotemporal entanglement of the vacuum
Pravin Kumar Dahal and Kieran Hymas
Phys. Rev. A **113**, L020201 (2026) - Published 9 February, 2026

The authors study how the quantum vacuum links different regions of spacetime through entanglement, thereby finding a surprising asymmetry: past–right (future–left) pairing share full, wedge-wide entanglement, while past–left (future–right) pairing show only limited mode-to-mode correlations. Entanglement of the quantum vacuum in these sectors can be harvested and transferred to spatially separated detectors facilitating vacuum-assisted quantum teleportation.

LETTER
Normal-mode-splitting-induced synchronization blockade in coupled quantum van der Pol oscillators
Nissi Thomas and M. Senthilvelan
Phys. Rev. A **113**, L020202 (2026) - Published 25 February, 2026



The authors discuss a synchronization blockade in a coupled quantum van der Pol oscillator under the influence of an external drive induced by normal mode splitting. They show that the blockade can be controlled by tuning the coupling strength, enabling control of quantum synchronization through collective mode dynamics.

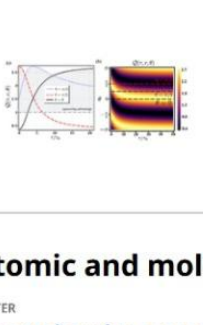
Quantum information science

LETTER
Towards gravimetry enhancement with squeezed states
Oziel R. de Araujo, Lucas S. Marinho, Jonas F. G. Santos, and Carlos H. S. Vieira
Phys. Rev. A **113**, L020401 (2026) - Published 25 February, 2026

This Letter investigates quantum gravimetry with squeezed probe states, emphasizing how the orientation of squeezing in phase space affects estimation precision. The analysis clarifies the conditions under which correlated probes and appropriate measurement choices improve sensitivity across different interaction times.

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

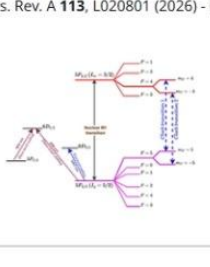
LETTER
Comprehensive assessment of properties for nuclear clock and fundamental physics applications
A. Chakraborty and B. K. Sahoo
Phys. Rev. A **113**, L020801 (2026) - Published 17 February, 2026



The authors utilize relativistic coupled-cluster theory to accurately determine the isotope shifts, differential nuclear charge radii, electric dipole polarizabilities, and quadrupole moments of Th. Additionally, the study comprehensively characterizes the nuclear moments for both the ground and isomeric states of Th, delivering high-precision data essential for assessing systematic uncertainties in upcoming nuclear clock applications.

Light-induced processes in atomic-scale systems

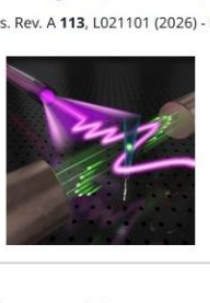
LETTER
General approximator for strong-field ionization rates
Manoram Agarwal, Armin Scrinzi, and Vladislav S. Yakovlev
Phys. Rev. A **113**, L021101 (2026) - Published 20 February, 2026



Sub-optical-cycle dynamics of strong-field ionization can be accurately retrieved from ionization probabilities obtained for a set of few-cycle laser pulses. A general model with a few adjustable parameters reconciles analytical and ab initio approaches.

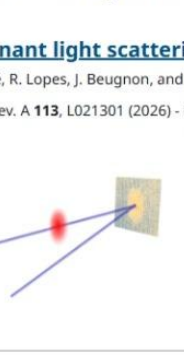
Ultracold systems and matter waves

LETTER
Resonant light scattering by a slab of ultracold atoms
R. Vatré, R. Lopes, J. Beugnon, and F. Gerbier
Phys. Rev. A **113**, L021301 (2026) - Published 2 February, 2026



The authors introduce an interferometric technique that measures the phase shift imprinted on a near-resonant laser beam transmitted through a thin slab of ytterbium atoms. This approach provides a sensitive and unambiguous probe of light-matter interactions in quantitative agreement with theoretical predictions, resolving a previously reported experimental discrepancy.

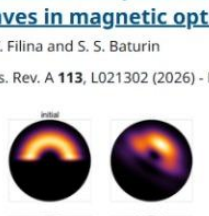
LETTER
Universal analytic solution for the quantum transport of structured matter waves in magnetic optics
N. V. Filina and S. S. Baturin
Phys. Rev. A **113**, L021302 (2026) - Published 10 February, 2026



The authors develop an exact analytic framework for the propagation of structured charged matter waves in nonuniform magnetic fields, linking their quantum evolution directly to classical magnetic-optics parameters.

Photonics, nonlinear optics, and optomechanics

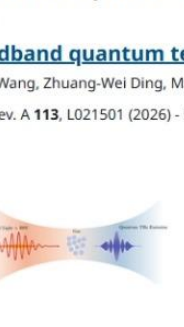
LETTER
Broadband quantum terahertz wave generation in laser-induced plasmas
Yi-Ben Wang, Zhuang-Wei Ding, Marcelo F. Ciappina, and Xue-Bin Bian
Phys. Rev. A **113**, L021501 (2026) - Published 10 February, 2026



A scheme for the generation of broadband quantum terahertz waves is presented. The inherent quantum characteristics of these waves are envisioned to unlock possibilities for harnessing THz pulses in fields such as sensing, imaging, and communication technologies.

Quantum optics

LETTER
Unveiling the self-orthogonality at exceptional points in driven -symmetric systems
Alexander Fritzsche, Riccardo Sorbello, Ronny Thomale, and Alexander Szameit
Phys. Rev. A **113**, L021701 (2026) - Published 24 February, 2026



The authors study Rabi oscillations in a non-Hermitian, periodically driven lattice and show how the self-orthogonality of the eigenstates results in a divergence of the Rabi frequency. Using its PT-symmetric nature, they propose the total power of the system as a global observable, thus offering a framework for the detection of self-orthogonality.

ARTICLES

Fundamental concepts

Recognizing critical lines via entanglement in non-Hermitian systems
Keshav Das Agarwal, Tanoy Kanti Konar, Leela Ganesh Chandra Lakkaraju, and Aditi Sen(De)
Phys. Rev. A **113**, 022201 (2026) - Published 2 February, 2026

Forward-time equivalent of a retrocausal diffusion hidden-variable model for quantum mechanics
William S. DeWitt and Benjamin H. Feintzeig
Phys. Rev. A **113**, 022202 (2026) - Published 2 February, 2026

Control of memory effects in a spin-boson system by periodic driving
Pietro Marco Follia, Bassano Vacchini, and Heinz-Peter Breuer
Phys. Rev. A **113**, 022203 (2026) - Published 3 February, 2026

Geometry-controlled freezing and revival of Bell nonlocality through environmental memory
Mohamed Hatifi
Phys. Rev. A **113**, 022204 (2026) - Published 4 February, 2026

Conclusive exclusion of quantum states with group action
Hongshun Yao and Xin Wang
Phys. Rev. A **113**, 022205 (2026) - Published 6 February, 2026

Nonequilibrium steady states in multibath quantum collision models
Ronan McElvogue, Andrew K. Mitchell, Gabriel T. Landi, and Steve Campbell
Phys. Rev. A **113**, 022206 (2026) - Published 5 February, 2026

Tracking adiabaticity in nonequilibrium many-body systems using x-ray photoemission from metals as a stringent test
Gustavo Diniz, Felipe D. Picoli, Luiz N. Oliveira, and Irene D'Amico
Phys. Rev. A **113**, 022207 (2026) - Published 6 February, 2026

Dimensional control of the coherence time of scattered light in cold atom clouds
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
Phys. Rev. A **113**, 022208 (2026) - Published 10 February, 2026

Quantum steering as a probe of energy transfer in quantum batteries
Meng-Long Song, Zan Cao, Xue-Ke Song, Liu Ye, and Dong Wang
Phys. Rev. A **113**, 022209 (2026) - Published 11 February, 2026

Work extraction from a quantum battery charged through an array of coupled cavities
I. Beder, D. Ferraro, and P. A. Brandão
Phys. Rev. A **113**, 022210 (2026) - Published 13 February, 2026

Mpemba effect in self-contained quantum refrigerators: Accelerated cooling
Sayan Mondal and Ujjwal Sen
Phys. Rev. A **113**, 022211 (2026) - Published 17 February, 2026

General framework for estimating the ultimate precision limit in Bayesian quantum metrology
B. M. Escher
Phys. Rev. A **113**, 022212 (2026) - Published 17 February, 2026

Synchronization effects in a periodically driven two-level system
Federico Settimo and Bassano Vacchini
Phys. Rev. A **113**, 022213 (2026) - Published 17 February, 2026

Lower bounds to variational problems with guarantees
J. Eisert
Phys. Rev. A **113**, 022214 (2026) - Published 17 February, 2026

Optimal min-entropy uncertainty relation
Alexandra Mușat, Andrei Tănăsescu, and Pantelimon George Popescu
Phys. Rev. A **113**, 022215 (2026) - Published 18 February, 2026

Contextuality-enhanced quantum state discrimination under fixed failure probability
Min Namkung and Hyang-Tag Lim
Phys. Rev. A **113**, 022216 (2026) - Published 20 February, 2026

Fluctuation theorems for multipartite quantum coherence and correlation dynamics
Kun Zhang, Mo-Yang Ni, Hai-Long Shi, Xiao-Hui Wang, and Jin Wang
Phys. Rev. A **113**, 022217 (2026) - Published 23 February, 2026

Single-shot antidistinguishability of unitary operations
Satyaki Manna and Anandamay Das Bhowmik
Phys. Rev. A **113**, 022218 (2026) - Published 23 February, 2026

Fringe visibility and which-way information in Young's double-slit experiments with light scattered from single atoms
Hanzhen Lin, Yu-Kun Lu, Vitaly Fedoseev, Yoo Kyung Lee, Jiahao Lyu, and Wolfgang Ketterle
Phys. Rev. A **113**, 022219 (2026) - Published 24 February, 2026

Quantum information science

Better bounds on finite-order Grothendieck constants with applications to Bell nonlocality
Sébastien Designolle, Tamás Vértesi, and Sebastian Pokutta
Phys. Rev. A **113**, 022401 (2026) - Published 2 February, 2026

Improving quantum walk metrology with split-step quantum walk
Majid Moradi and Mostafa Annabestani
Phys. Rev. A **113**, 022402 (2026) - Published 3 February, 2026

Metrological approach to the emergence of classical objectivity
Anthony Kiely, Diana A. Chisholm, Akram Touil, Sebastian Deffner, Gabriel Landi, and Steve Campbell
Phys. Rev. A **113**, 022403 (2026) - Published 3 February, 2026

Transfer of arbitrary quantum states from one input cavity to multiple output cavities via a superconducting-qudit switch
Qi Zhang, Liang Bin, Yu Zhang, Wen-Hao Kong, Jia-Heng Ni, Li Yu, Yi-Hao Kang, Qi-Ping Su, and Chui-Ping Yang
Phys. Rev. A **113**, 022404 (2026) - Published 5 February, 2026

Entanglement and distillation from symmetric positive maps
Albert Rico
Phys. Rev. A **113**, 022405 (2026) - Published 5 February, 2026

Entanglement-cost hierarchies in quantum fragmented mixed states
Subhayan Sahu, Yahui Li, and Pablo Sala
Phys. Rev. A **113**, 022406 (2026) - Published 6 February, 2026

Information recycling in coherent-state discrimination
L. F. Melo, János A. Bergou, and Alexandre B. Tacla
Phys. Rev. A **113**, 022407 (2026) - Published 6 February, 2026

Protecting fidelity of quantum teleportation by quantum interferences
Ashish Anil and R. Arun
Phys. Rev. A **113**, 022408 (2026) - Published 9 February, 2026

Realization of classification tasks via complex graph neural networks based on the continuous-time quantum walk
Jiaqi Sun and Zhihao Bian
Phys. Rev. A **113**, 022409 (2026) - Published 9 February, 2026

Enhanced spreading in continuous-time quantum walks using aperiodic temporal modulation of defects
Jefferson J. Ximenes, Marcelo A. Pires, and José M. Villas-Bôas
Phys. Rev. A **113**, 022410 (2026) - Published 10 February, 2026

Role of quantum state texture in probing resource theories and quantum phase transitions
Ayan Patra, Tanoy Kanti Konar, Pritam Halder, and Aditi Sen(De)
Phys. Rev. A **113**, 022411 (2026) - Published 10 February, 2026

Characterization and generation of a standard-quantum-limit–beating catlike state through repetitive measurements
Mamiko Tatsuta, Yuichiro Matsuzaki, Hiroki Kuji, Ryusuke Hamazaki, and Akira Shimizu
Phys. Rev. A **113**, 022412 (2026) - Published 10 February, 2026

Bosonic error correction codes based on states generated via particle-number-resolving measurements
S. B. Korolev and T. Yu. Golubeva
Phys. Rev. A **113**, 022413 (2026) - Published 10 February, 2026

Quantum state tomography for tensor networks in two dimensions
Zhen Qin and Zhihui Zhu
Phys. Rev. A **113**, 022414 (2026) - Published 10 February, 2026

Rank-based entanglement detection for bound entangled states
Aabhas Gulati
Phys. Rev. A **113**, 022415 (2026) - Published 10 February, 2026

Nonexistence of maximally entangled mixed states for a fixed spectrum
Gonzalo Camacho and Julio I. de Vicente
Phys. Rev. A **113**, 022416 (2026) - Published 10 February, 2026

Non-Abelian interference of topological edge states
Shi Hu, Meiqing Hu, and Zhoutao Lei
Phys. Rev. A **113**, 022417 (2026) - Published 12 February, 2026

Quantum metrology in the presence of correlated noise via Markovian embedding
Arpan Das and Rafał Demkowicz-Dobrzański
Phys. Rev. A **113**, 022418 (2026) - Published 12 February, 2026

Multiresonator quantum memory with atomic ensembles
S. A. Moiseev
Phys. Rev. A **113**, 022419 (2026) - Published 13 February, 2026

Efficient nonclassical state preparation via generalized parity measurement
Chen-yi Zhang and Jun Jing
Phys. Rev. A **113**, 022420 (2026) - Published 13 February, 2026

Flexible fault-tolerant gate gadgets
Eric Kubischta and Ian Teixeira
Phys. Rev. A **113**, 022421 (2026) - Published 17 February, 2026

Ability of entanglement and purity to help to detect systematic experimental errors
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
Phys. Rev. A **113**, 022422 (2026) - Published 17 February, 2026

Expressivity limits in quantum walk-based optimization
Guilherme Adamatti Bridi, Debbie Lim, Lirandë Pira, Raqueline Azevedo Medeiros Santos, Franklin de Lima Marquezino, and Soumik Adhikary
Phys. Rev. A **113**, 022423 (2026) - Published 17 February, 2026

Generalization bounds in hybrid quantum-classical machine learning models
Tongyan Wu, Amine Bentellis, Alona Sakhnenko, and Jeanette Miriam Lorenz
Phys. Rev. A **113**, 022425 (2026) - Published 17 February, 2026

Expediting quantum state transfer through the long-range extended model
Sejal Ahuja, Tanoy Kanti Konar, Leela Ganesh Chandra Lakkaraju, and Aditi Sen(De)
Phys. Rev. A **113**, 022426 (2026) - Published 17 February, 2026

Noise-resilient negative quantum states
Jai Lalita, Pavithran Iyer, and Subhashish Banerjee
Phys. Rev. A **113**, 022427 (2026) - Published 18 February, 2026

Resources for bosonic metrology: Quantum-enhanced precision from a superselection rule perspective
Astghik Saharyan, Eloi Descamps, Arne Keller, and Pérola Milman
Phys. Rev. A **113**, 022428 (2026) - Published 18 February, 2026

Efficient certification of high-dimensional entanglement
Yiwen Wu, Zihao Li, and Huangjun Zhu
Phys. Rev. A **113**, 022429 (2026) - Published 18 February, 2026

Censorship of quantum resources against quantum catalysis
Julien Pinske and Klaus Mølmer
Phys. Rev. A **113**, 022430 (2026) - Published 19 February, 2026

Fundamental trade-off relation in probabilistic entanglement generation
Yuanbo Chen and Yoshihiko Hasegawa
Phys. Rev. A **113**, 022431 (2026) - Published 19 February, 2026

Optimal birobust quantum control by inverse optimization
Ghaieth Hezzi, Meri Harutyunyan, Ghassen Dridi, Mohamed Mejatty, and Stéphane Guérin
Phys. Rev. A **113**, 022432 (2026) - Published 19 February, 2026

Improving the efficiency of quantum annealing with controlled diagonal catalysts
Tomohiro Hattori and Shu Tanaka
Phys. Rev. A **113**, 022433 (2026) - Published 20 February, 2026

Algorithm for estimating -stabilizer Rényi entropies via purity
Benjamin Stratton
Phys. Rev. A **113**, 022434 (2026) - Published 20 February, 2026

All-versus-nothing nonlocality for multiple observers in quantum networks
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
Phys. Rev. A **113**, 022435 (2026) - Published 20 February, 2026

Maxwell's demon for quantum transport
Kangqiao Liu, Masaya Nakagawa, and Masahito Ueda
Phys. Rev. A **113**, 022436 (2026) - Published 23 February, 2026

Efficient quantum access model for sparse structured matrices using linear combination of "things"
Abeynaya Gnanasekaran and Amit Surana
Phys. Rev. A **113**, 022437 (2026) - Published 23 February, 2026

Unified framework for quantum code embedding
Andrew C. Yuan
Phys. Rev. A **113**, 022438 (2026) - Published 23 February, 2026

Two-dimensional quantum central limit theorem by quantum walks
Keisuke Asahara, Daiju Funakawa, Motoki Seki, and Akito Suzuki
Phys. Rev. A **113**, 022439 (2026) - Published 23 February, 2026

Quantifying high-dimensional entanglement via classes of symmetric measurements
Fan Wu and Liang Tang
Phys. Rev. A **113**, 022440 (2026) - Published 23 February, 2026

Classifying locally distinguishable sets: No activation across bipartitions
Atanu Bhunia, Saronath Halder, and Ritabrata Sengupta
Phys. Rev. A **113**, 022441 (2026) - Published 24 February, 2026

Continuous quantum correction on Markovian and non-Markovian models
Juan Garcia Nila and Todd A. Brun
Phys. Rev. A **113**, 022442 (2026) - Published 24 February, 2026

Unified fidelity-based framework for quantum speed limits in open quantum systems
Tristán M. Osán, Yanet Alvarez, Mariela Portesi, and Pedro W. Lamberti
Phys. Rev. A **113**, 022443 (2026) - Published 24 February, 2026

Maximum residual strong monogamy inequality for multiqubit entanglement
Dong-Dong Dong, Xue-Ke Song, Liu Ye, Dong Wang, and Gerardo Adesso
Phys. Rev. A **113**, 022444 (2026) - Published 24 February, 2026

Finite-size secret-key rates of discrete modulation continuous-variable quantum key distribution under Gaussian attacks
Gabriele Staffieri, Giovanni Scala, and Cosmo Lupo
Phys. Rev. A **113**, 022445 (2026) - Published 24 February, 2026

Generating large-scale Greenberger-Horne-Zeilinger–like states in lattice spin systems
Xuanchen Zhang, Yaofeng Chen, and Yong-Chun Liu
Phys. Rev. A **113**, 022446 (2026) - Published 24 February, 2026

Heisenberg-limited quantum algorithms for multiple observables estimation
Yuki Koizumi, Kaito Wada, Wataru Mizukami, and Nobuyuki Yoshioka
Phys. Rev. A **113**, 022447 (2026) - Published 24 February, 2026

Efficient prime-field framework for the construction and characterization of high-dimensional entangled states
Suchandan Ghosh and Avishek Adhikari
Phys. Rev. A **113**, 022448 (2026) - Published 25 February, 2026

Entropic uncertainty under indefinite causal order and input-output direction
Göktuğ Karpat
Phys. Rev. A **113**, 022449 (2026) - Published 25 February, 2026

Resilience of the surface code to error bursts
Shi Jie Samuel Tan, Christopher A. Pattison, Matt McEwen, and John Preskill
Phys. Rev. A **113**, 022450 (2026) - Published 26 February, 2026

Iterative algorithm for minimum-error quantum state discrimination: Convergence for pure-state ensembles
Xin Lü and Shi-Hai Dong
Phys. Rev. A **113**, 022451 (2026) - Published 26 February, 2026

Hybrid analog teleportation-direct transmission in noisy bosonic channels
Uesli Alushi, Simone Felicetti, and Roberto Di Candia
Phys. Rev. A **113**, 022452 (2026) - Published 26 February, 2026

Factorizability of optimal quantum sequence discrimination under maximum-confidence measurements
Donghoon Ha and Jeong San Kim
Phys. Rev. A **113**, 022453 (2026) - Published 26 February, 2026

Generalized symplectic representation of local Clifford operators
Cai-Hong Wang, Jiang-Tao Yuan, Zhi-Hao Ma, Shao-Ming Fei, and Shang-Quan Bu
Phys. Rev. A **113**, 022454 (2026) - Published 27 February, 2026

Clifford transformations for fermionic quantum systems: From Pauli and Majorana operators to Dirac fermions
I. Magoulas and F. A. Evangelista
Phys. Rev. A **113**, 022455 (2026) - Published 27 February, 2026

Expanding the class of free fermions via twin-collapse methods
Jannis Ruh and Samuel J. Elman
Phys. Rev. A **113**, 022456 (2026) - Published 27 February, 2026

Quantum technologies

Enhanced sensing of a weak Stark field under the influence of Aubry-André-Harper criticality
Ayan Sahoo and Debraj Rakshit
Phys. Rev. A **113**, 022601 (2026) - Published 2 February, 2026

Discretely modulated continuous-variable quantum key distribution without phase compensation
Mingze Wu, Xuesong Xu, Song Yu, Bingjie Xu, and Yichen Zhang
Phys. Rev. A **113**, 022602 (2026) - Published 3 February, 2026

Coherence buffering via multiple excitations: Duty-cycle engineering and Dick-noise suppression in optical lattice clocks
Jin Cao, Benquan Lu, Xiaotong Lu, and Hong Chang
Phys. Rev. A **113**, 022603 (2026) - Published 6 February, 2026

Scalable native multiqubit gates via engineered noncomputational-state interactions in superconducting fluxonium qubits
Peng Zhao, Peng Xu, and Zheng-Yuan Xue
Phys. Rev. A **113**, 022604 (2026) - Published 6 February, 2026

Quantifying the upper limit of backflash attack in quantum key distribution
Jialei Su, Junxuan Liu, Zihao Chen, Mingyang Zhong, Qingquan Peng, Jiangfang Ding, Yijun Wang, Anqi Huang, and Ying Guo
Phys. Rev. A **113**, 022605 (2026) - Published 9 February, 2026

Complexity in multiqubit and many-body systems
Imre Varga
Phys. Rev. A **113**, 022606 (2026) - Published 9 February, 2026

Scalable simulation of fermionic encoding performance on noisy quantum computers
Emiliia Dyrenkova, Raymond Laflamme, and Michael Vasmer
Phys. Rev. A **113**, 022607 (2026) - Published 9 February, 2026

Robustness enhancement of universal noncyclic geometric gates via evolution optimization
Zi-Hao Qin, Yi-Han Yuan, Yan Liang, Zheng-Yuan Xue, and Tao Chen
Phys. Rev. A **113**, 022608 (2026) - Published 10 February, 2026

Understanding qubit trajectories in parametrized quantum circuits
Seungcheol Oh, Chaemoon Im, Soohyun Park, and Joongheon Kim
Phys. Rev. A **113**, 022609 (2026) - Published 12 February, 2026

Quantum Slater-exponent optimization for electronic-structure calculations on simulated noisy intermediate-scale quantum computers
Difa Farhani Hakim, Teguh Budi Prayitno, Pak Shen Choong, Yanoar Pribadi Sarwono, and Leong-Chuan Kwek
Phys. Rev. A **113**, 022610 (2026) - Published 12 February, 2026

Robust certification of quantum instruments through a sequential communication game
Pritam Roy, Subhankar Bera, A. S. Majumdar, and Shiladitya Mal
Phys. Rev. A **113**, 022611 (2026) - Published 13 February, 2026

Ultrafast switching of telecom photon-number states
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
Phys. Rev. A **113**, 022612 (2026) - Published 13 February, 2026

Optimal control of geometric phase in pairs of interacting atoms traveling along two-dimensional closed paths
Omar Morandi
Phys. Rev. A **113**, 022613 (2026) - Published 17 February, 2026

Global-scale quantum networking using hybrid-channel quantum repeaters with relays based on a chain of balloons
Pei-Xi Liu, Yu-Ping Lin, Zong-Quan Zhou, Chuan-Feng Li, and Guang-Can Guo
Phys. Rev. A **113**, 022614 (2026) - Published 18 February, 2026

Efficient charging of quantum batteries via non-Markovian squeezed reservoirs
Kai Xu, Jin-Huan Zhang, Han-Jie Zhu, Hong-Guo Li, Wei Qin, and Wu-Ming Liu
Phys. Rev. A **113**, 022615 (2026) - Published 19 February, 2026

Fidelity relations in an array of neutral atom qubits: Experimental validation of control noise
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
Phys. Rev. A **113**, 022616 (2026) - Published 19 February, 2026

Leveraging analog neutral-atom quantum computers for diversified pricing in hybrid column-generation frameworks
Cédrick Perron, Yves Bérubé-Lauzière, and Victor Drouin-Touchette
Phys. Rev. A **113**, 022617 (2026) - Published 19 February, 2026

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Unveiling subcycle excitation dynamics of electrons in strong laser fields
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Light-induced, fictitious magnetic trapping of cold alkali-metal atoms using an optical-tweezer–nanofiber hybrid platform
Alexey Vylegzhanin, Dylan J. Brown, Sergei Abdrakhmanov, and Síle Nic Chormaic
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Nonadiabatic effect in high-order harmonic generation revealed by a fully analytical method
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Two-dimensional electron dynamics reconstructed by polarization-resolved high harmonic spectroscopy
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Forward- and backward-scattering photoelectron holography controlled by the amplitude ratio in parallel linearly polarized laser pulses
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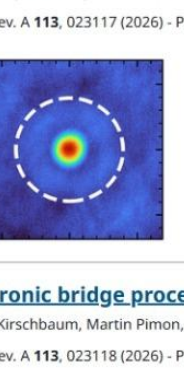
Floquet-generalized light-induced-phase model: From diabatic dynamics to complete line-shape control
Di Zhao, Xuhan Wang, Chen-Wei Jiang, Shao-Yan Gao, Peng-Bo Li, and Fu-li Li
Phys. Rev. A **113**, 023116 (2026) - Published 23 February, 2026

EDITORS' SUGGESTION
Spatially localized optical excitations in a doped solid using robust broadband composite pulses
Niels Joseph, Nikolay V. Vitanov, and Thomas Halfmann
Phys. Rev. A **113**, 023117 (2026) - Published 23 February, 2026



The authors experimentally demonstrate strong spatial confinement of optical excitations by broadband composite pulse sequences in a rare-earth-ion–doped crystal, which provides significant improvements in localization and robustness against disorder compared to previous experiments.

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Ultracold systems and matter waves

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