



Scanning electron microscope image of a reconfigurable 3×3 non-Hermitian gauged laser array. Selected for an Editors' Suggestion. [Zihe Gao *et al.*, Phys. Rev. Lett. **130**, 263801 (2023)]

NEWSPAPER

PHYSICAL REVIEW LETTERS

Contents

Articles published 24 June–30 June 2023

VOLUME 130, NUMBER 26

30 June 2023

Quantum Information, Science, and Technology

- Integrable Digital Quantum Simulation: Generalized Gibbs Ensembles and Trotter Transitions 260401
Eric Vernier, Bruno Bertini, Giuliano Giudici, and Lorenzo Piroli
- All-Microwave Manipulation of Superconducting Qubits with a Fixed-Frequency Transmon Coupler 260601
Shotaro Shirai, Yuta Okubo, Kohei Matsuura, Alto Osada, Yasunobu Nakamura, and Atsushi Noguchi
- Hierarchies of Frequentist Bounds for Quantum Metrology: From Cramér-Rao to Barankin 260801
Manuel Gessner and Augusto Smerzi

Cosmology, Astrophysics, and Gravitation

-  Search for Light Dark Matter with Ionization Signals in the PandaX-4T Experiment 261001
Shuaijie Li *et al.* (PandaX Collaboration)
- Searching for Heavy Dark Matter near the Planck Mass with XENON1T 261002
E. Aprile *et al.* (XENON Collaboration)
-  Cosmography Using Strongly Lensed Gravitational Waves from Binary Black Holes 261401
Souvik Jana, Shasvath J. Kapadia, Tejaswi Venumadhav, and Parameswaran Ajith
- Spacetime Structure, Asymptotic Radiation, and Information Recovery for a Quantum Hybrid State 261501
Yohan Potaux, Sergey N. Solodukhin, and Debajyoti Sarkar

Particles and Fields

- Rigorous Bounds on Transport from Causality 261601
Michal P. Heller, Alexandre Serantes, Michał Spaliński, and Benjamin Withers
- One Fixed Point Can Hide Another One: Nonperturbative Behavior of the Tetracritical Fixed Point of $O(N)$ Models at Large N 261602
Shunsuke Yabunaka and Bertrand Delamotte
- Search for Dark Photons with Superconducting Radio Frequency Cavities 261801
A. Romanenko, R. Harnik, A. Grassellino, R. Pilipenko, Y. Pischalnikov, Z. Liu, O. S. Melnychuk, B. Giaccone, O. Pronitchev, T. Khataboulline, D. Frolov, S. Posen, S. Belomestnykh, A. Berlin, and A. Hook
- Search for the Lepton Flavor Violating Decays $B^+ \rightarrow K^+ \tau^\pm \ell^\mp$ ($\ell = e, \mu$) at Belle 261802
S. Watanuki *et al.* (Belle Collaboration)
- New Constraint on Primordial Lepton Flavor Asymmetries 261803
Valerie Domcke, Kohei Kamada, Kyohei Mukaida, Kai Schmitz, and Masaki Yamada

Nuclear Physics

- Resolving the Scales of the Quark-Gluon Plasma with Energy Correlators 262301
Carlota Andres, Fabio Dominguez, Raghav Kunnawalkam Elayavalli, Jack Holguin, Cyrille Marquet, and Ian Moulton

(Continued Inside)



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Copyright 2023 American Physical Society



0031-9007(20230630)130:26*1;1-W

Atomic, Molecular, and Optical Physics

Many-Body Theory Calculations of Positron Scattering and Annihilation in H_2 , N_2 , and CH_4	263001
C. M. Rawlins, J. Hofierka, B. Cunningham, C. H. Patterson, and D. G. Green	
Tan's Two-Body Contact in a Planar Bose Gas: Experiment versus Theory	263401
Adam Raçon and Nicolas Dupuis	
Atom Interferometric Imaging of Differential Potentials Using an Atom Laser	263402
M. E. Mossman, Ryan A. Corbin, Michael McNeil Forbes, and P. Engels	
Observation of Exceptional Points in Thermal Atomic Ensembles	263601
Chao Liang, Yuanjiang Tang, An-Ning Xu, and Yong-Chun Liu	
Certifying Multimode Light-Matter Interaction in Lossy Resonators	263602
Dominik Lentrodt, Oliver Diekmann, Christoph H. Keitel, Stefan Rotter, and Jörg Evers	
Continuous Optical-to-Mechanical Quantum State Transfer in the Unresolved Sideband Regime	263603
Amy Navarathna, James S. Bennett, and Warwick P. Bowen	
Two-Dimensional Reconfigurable Non-Hermitian Gauged Laser Array	263801
Zihe Gao, Xingdu Qiao, Mingsen Pan, Shuang Wu, Jieun Yim, Kaiyuan Chen, Bikashkali Midya, Li Ge, and Liang Feng	

Physics of Fluids, Earth & Planetary Science, and Climate

Fluid-Solid Reaction in Porous Media as a Chaotic Restart Process	264001
Tomás Aquino, Tanguy Le Borgne, and Joris Heyman	
Inverse Cascade Spectrum of Gravity Waves in the Presence of a Condensate: A Direct Numerical Simulation	264002
Alexander O. Korotkevich	

Plasma and Solar Physics, Accelerators and Beams

Dynamics of Nanosecond Laser Pulse Propagation and of Associated Instabilities in a Magnetized Underdense Plasma	265101
W. Yao, A. Higginson, J.-R. Marquès, P. Antici, J. Béard, K. Burdonov, M. Borghesi, A. Castan, A. Ciardi, B. Coleman, S. N. Chen, E. d'Humières, T. Gangolf, L. Gremillet, B. Khier, L. Lancia, P. Loiseau, X. Ribeyre, A. Soloviev, M. Starodubtsev, Q. Wang, and J. Fuchs	

Condensed Matter and Materials

Stoichiometric Ternary Superhydride $LaBeH_8$ as a New Template for High-Temperature Superconductivity at 110 K under 80 GPa	266001
Yinggang Song, Jingkai Bi, Yuki Nakamoto, Katsuya Shimizu, Hanyu Liu, Bo Zou, Guangtao Liu, Hongbo Wang, and Yanming Ma	
Antiferromagnetic Spin Fluctuations and Unconventional Superconductivity in Topological Superconductor Candidate YPtBi Revealed by ^{195}Pt -NMR	266002
Y. Z. Zhou, J. Chen, Z. X. Li, J. Luo, J. Yang, Y. F. Guo, W. H. Wang, R. Zhou, and Guo-qing Zheng	
Josephson Diode Effect Induced by Valley Polarization in Twisted Bilayer Graphene	266003
Jin-Xin Hu, Zi-Ting Sun, Ying-Ming Xie, and K. T. Law	
Measuring the Electrical Resistivity of Liquid Iron to 1.4 Mbar	266301
Kenji Ohta, Sho Suehiro, Saori I. Kawaguchi, Yoshiyuki Okuda, Tatsuya Wakamatsu, Kei Hirose, Yasuo Ohishi, Manabu Kodama, Shuichiro Hirai, and Shintaro Azuma	
Anomalous High-Temperature Magnetoresistance in a Dilute 2D Hole System	266302
Arvind Shankar Kumar, Chieh-Wen Liu, Shuhao Liu, Xuan P. A. Gao, Alex Levchenko, Loren N. Pfeiffer, and Kenneth W. West	
Non-Hermitian Chiral Heat Transport	266303
Guoqiang Xu, Xue Zhou, Ying Li, Qitao Cao, Weijin Chen, Yunfeng Xiao, Lan Yang, and Cheng-Wei Qiu	
Antichirality Emergent in Type-II Weyl Phononic Crystals	266304
Mou Yan, Xueqin Huang, Jien Wu, Weiyin Deng, Jiuyang Lu, and Zhengyou Liu	
Electronic Mechanism that Quenches Field-Driven Heating as Illustrated with the Static Holstein Model	266401
Manuel Weber and James K. Freericks	
Abundant Lattice Instability in Kagome Metal ScV_6Sn_6	266402
Hengxin Tan and Binghai Yan	

(Continued on Preceding Page)

This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007)

	Fermion Disorder Operator at Gross-Neveu and Deconfined Quantum Criticalities	266501
	Zi Hong Liu, Weilun Jiang, Bin-Bin Chen, Junchen Rong, Meng Cheng, Kai Sun, Zi Yang Meng, and Fakher F. Assaad	
	Quantum Geometric Oscillations in Two-Dimensional Flat-Band Solids	266601
	Võ Tiên Phong and E. J. Mele	
	Resonant Elastic X-Ray Scattering of Antiferromagnetic Superstructures in EuPtSi_3	266701
	Wolfgang Simeth, Andreas Bauer, Christian Franz, Aisha Aqeel, Pablo J. Bereciartua, Jennifer A. Sears, Sonia Francoual, Christian H. Back, and Christian Pflleiderer	
	Pseudo-Goldstone Modes and Dynamical Gap Generation from Order by Thermal Disorder	266702
	Subhankar Khatua, Michel J. P. Gingras, and Jeffrey G. Rau	
	Transverse Magnetization in Spin-Orbit Coupled Antiferromagnets	266703
	Taekoo Oh, Sungjoon Park, and Bohm-Jung Yang	
	Tunable Artificial Relaxor Behavior in $[\text{BaTiO}_3]_m/[\text{BaZrO}_3]_n$ Superlattices	266801
	Zishen Tian, Michael Xu, Jieun Kim, Hao Pan, Djamila Lou, Xiaoxi Huang, James M. LeBeau, and Lane W. Martin	
	Nonlinear Exceptional Points with a Complete Basis in Dynamics	266901
	Kai Bai, Jia-Zheng Li, Tian-Rui Liu, Liang Fang, Duanduan Wan, and Meng Xiao	
	Millisecond Coherence in a Superconducting Qubit	267001
	Aaron Somoroff, Quentin Ficheux, Raymond A. Mencia, Haonan Xiong, Roman Kuzmin, and Vladimir E. Manucharyan	
	Thermodynamic Limit for Excitonic Light-Emitting Diodes	267002
	Noel C. Giebink and Stephen R. Forrest	
	Statistical Physics; Classical, Nonlinear, and Complex Systems	
	Noise-Induced Network Topologies	267401
	Frederic Folz, Kurt Mehlhorn, and Giovanna Morigi	
	Polymers, Chemical Physics, Soft Matter, and Biological Physics	
	Evidences of Conformal Invariance in 2D Rigidity Percolation	268201
	Nina Javerzat and Mehdi Bouzid	
	Complex Memory Formation in Frictional Granular Media	268202
	D. Candela	
	Noether-Constrained Correlations in Equilibrium Liquids	268203
	Florian Sammüller, Sophie Hermann, Daniel de las Heras, and Matthias Schmidt	
	Counting and Sequential Information Processing in Mechanical Metamaterials	268204
	Lennard J. Kwakernaak and Martin van Hecke	
	Iontronic Neuromorphic Signaling with Conical Microfluidic Memristors	268401
	T. M. Kamsma, W. Q. Boon, T. ter Rele, C. Spitoni, and R. van Roij	
	Errata	
	Erratum: Oriented Active Solids [Phys. Rev. Lett. 123 , 238001 (2019)]	269901
	Ananyo Maitra and Sriram Ramaswamy	
	Erratum: Large Anomalous Frequency Shift in Perpendicular Standing Spin Wave Modes in BiYIG Films Induced by Thin Metallic Overlayers [Phys. Rev. Lett. 130 , 126703 (2023)]	269902
	Byung Hun Lee, Takian Fakhrol, Caroline A. Ross, and Geoffrey S. D. Beach	



This paper was highlighted in the APS publication *Physics* (physics.aps.org).

By suggesting a few manuscripts each week, we hope to promote reading across fields. Please see our Announcement Phys. Rev. Lett. 98, 010001 (2007).

Physics
spotlighting exceptional research

The American Physical Society's free online publication, *Physics* (physics.aps.org), provides thought-provoking analysis and spotlights exceptional research.