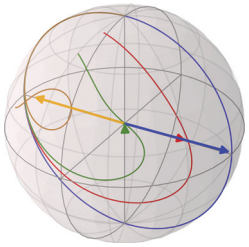

Reduced entangled-qubit dynamics on (in) the Bloch sphere for (non)vanishing coupling near exceptional points. [Zeng-Zhao Li *et al.*, Phys. Rev. Lett. **131**, 100202 (2023)]

NEWSPAPER

PHYSICAL REVIEW LETTERS

Contents

Articles published 2 September–8 September 2023

VOLUME 131, NUMBER 10 8 September 2023

Quantum Information, Science, and Technology

Partial Self-Testing and Randomness Certification in the Triangle Network 100201
Pavel Sekatski, Sadra Boreiri, and Nicolas Brunner

Speeding Up Entanglement Generation by Proximity to Higher-Order Exceptional Points 100202
Zeng-Zhao Li, Weijian Chen, Maryam Abbasi, Kater W. Murch, and K. Birgitta Whaley

Exact Dirac–Bogoliubov–de Gennes Dynamics for Inhomogeneous Quantum Liquids 100401
Per Moosavi

Quantum Logic Enhanced Sensing in Solid-State Spin Ensembles 100801
Nithya Arunkumar, Kevin S. Olsson, Jner Tzern Oon, Connor A. Hart, Dominik B. Bucher, David R. Glenn, Mikhail D. Lukin, Hongkun Park, Donhee Ham, and Ronald L. Walsworth

Free-Space and Fiber-Integrated Measurement-Device-Independent Quantum Key Distribution under High Background Noise 100802
Yu-Huai Li, Shuang-Lin Li, Xiao-Long Hu, Cong Jiang, Zong-Wen Yu, Wei Li, Wei-Yue Liu, Sheng-Kai Liao, Ji-Gang Ren, Hao Li, Lixing You, Zhen Wang, Juan Yin, Feihu Xu, Qiang Zhang, Xiang-Bin Wang, Yuan Cao, Cheng-Zhi Peng, and Jian-Wei Pan

Classical Surrogates for Quantum Learning Models 100803
Franz J. Schreiber, Jens Eisert, and Johannes Jakob Meyer

Microwave Fluorescence Detection of Spin Echoes 100804
E. Billaud, L. Balembois, M. Le Dantec, M. Rančić, E. Albertinale, S. Bertaina, T. Chanelière, P. Goldner, D. Estève, D. Vion, P. Bertet, and E. Flurin

Cosmology, Astrophysics, and Gravitation

Probing the Connection between Entangled Particles and Wormholes in General Relativity 101001
Ben Kain

Search for a Dark-Matter-Induced Cosmic Axion Background with ADMX 101002
T. Nitta *et al.* (ADMX Collaboration)

Particles and Fields

Search for Exotic Higgs Boson Decays $H \to \mathcal{A}\mathcal{A} \to 4\gamma$ with Events Containing Two Merged Diphotons in Proton-Proton Collisions at $\sqrt{s} = 13$ TeV 101801
A. Tumasyan *et al.* (CMS Collaboration)

First Double-Differential Measurement of Kinematic Imbalance in Neutrino Interactions with the MicroBooNE Detector 101802
P. Abratenko *et al.* (The MicroBooNE Collaboration)

(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(20230908)131:10;1-6

Nuclear Physics

Measurement of the Prompt D^0 Nuclear Modification Factor in p-Pb Collisions at $\sqrt{s_{NN}} = 8.16$ TeV 102301
R. Aaij *et al.* (LHCb Collaboration)

Measurement of the Lifetime and Λ Separation Energy of ${}^{3}_{\Lambda}\mathrm{H}$ 102302
S. Acharya *et al.* (ALICE Collaboration)

Chiral Instabilities and the Fate of Chirality Imbalance in Non-Abelian Plasmas 102303
Sören Schlichting and Sayantan Sharma

Surprising Charge-Radius Kink in the Sc Isotopes at $N = 20$ 102501
Kristian König, Stephan Fritzsche, Gaute Hagen, Jason D. Holt, Andrew Klose, Jeremy Lantis, Yuan Liu, Kei Minamisono, Takayuki Miyagi, Witold Nazarewicz, Thomas Papenbrock, Skyy V. Pineda, Robert Powel, and Paul-Gerhard Reinhard

Tritium Beta Spectrum Measurement and Neutrino Mass Limit from Cyclotron Radiation Emission Spectroscopy 102502
A. Ashtari Esfahani *et al.* (Project 8 Collaboration)

Atomic, Molecular, and Optical Physics

Imaging-Assisted Single-Photon Doppler-Free Laser Spectroscopy and the Ionization Energy of Metastable Triplet Helium 103001
Gloria Clausen, Simon Scheidegger, Josef A. Agner, Hansjürg Schmutz, and Frédéric Merkt

Measurement of Hyperfine Structure and the Zemach Radius in ${}^{6}\mathrm{Li}^{+}$ Using Optical Ramsey Technique 103002
Wei Sun, Pei-Pei Zhang, Peng-peng Zhou, Shao-long Chen, Zhi-qiang Zhou, Yao Huang, Xiao-Qiu Qi, Zong-Chao Yan, Ting-Yun Shi, G. W. F. Drake, Zhen-Xiang Zhong, Hua Guan, and Ke-lin Gao

Atom Interferometry with Rb Blue Transitions 103401
L. Salvi, L. Cacciapuoti, G. M. Tino, and G. Rosi

Universal Quantum Optimization with Cold Atoms in an Optical Cavity 103601
Meng Ye, Ye Tian, Jian Lin, Yuchen Luo, Jiaqi You, Jiazhong Hu, Wenjun Zhang, Wenlan Chen, and Xiaopeng Li

Non-Hermitian Waveguide Cavity QED with Tunable Atomic Mirrors 103602
Wei Nie, Tao Shi, Yu-xi Liu, and Franco Nori

Light-Matter Interaction at the Transition between Cavity and Waveguide QED 103603
Daniel Lechner, Riccardo Pennetta, Martin Blaha, Philipp Schneeweiss, Arno Rauschenbeutel, and Jürgen Volz

Topological Inverse Band Theory in Waveguide Quantum Electrodynamics 103604
Yongguan Ke, Jiaxuan Huang, Wenjie Liu, Yuri Kivshar, and Chaohong Lee

Physics of Fluids, Earth & Planetary Science, and Climate

Pinching Dynamics and Multiple Droplet Generation in Partial Coalescence 104001
Teng Dong and Panagiota Angeli

Secondary Bubble Entrainment via Primary Bubble Bursting at a Viscoelastic Surface 104002
Bingqiang Ji, Zhengyu Yang, Zirui Wang, Randy H. Ewoldt, and Jie Feng

Nanoscale Transport during Liquid Film Thinning Inhibits Bubble Coalescing Behavior in Electrolyte Solutions 104003
Bo Liu, Rogerio Manica, Qingxia Liu, Zhenghe Xu, Evert Klaseboer, and Qiang Yang

Plasma and Solar Physics, Accelerators and Beams

Effects of Laser Bandwidth in Direct-Drive High-Performance DT-Layered Implosions on the OMEGA Laser 105101
D. Patel, J. P. Knauer, D. Cao, R. Betti, R. Nora, A. Shvydky, V. Gopalaswamy, A. Lees, S. Sampat, W. R. Donaldson, S. P. Regan, C. Stoeckl, C. J. Forrest, V. Yu. Glebov, D. R. Harding, M. J. Bonino, R. T. Janezic, D. Wasilewski, C. Fella, C. Shuldberg, J. Murray, D. Guzman, and B. Serrato

Condensed Matter and Materials

Scaling Law for the Onset of Solidification at Extreme Undercooling 106101
Philip C. Myint, Dane M. Sterbentz, Justin L. Brown, Brian S. Stoltzfus, Jean-Pierre R. Delplanque, and Jonathan L. Belof

Presolidification in Eutectic Droplets 106201
Bene Poelsema, Zhiguo Zhang, Harold J. W. Zandvliet, and Arie van Houselt

(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)

Phenomenology of the Prethermal Many-Body Localized Regime 106301
David M. Long, Philip J. D. Crowley, Vedika Khemani, and Anushya Chandran
Universality of Critical Dynamics with Finite Entanglement 106501
N. E. Sherman, A. Avdoshkin, and J. E. Moore
Failure of Topological Invariants in Strongly Correlated Matter 106601
Jinchao Zhao, Peizhi Mai, Barry Bradlyn, and Philip Phillips
Transport of Spin Magnetic Multipole Moments Carried by Bloch Quasiparticles 106701
Muhammad Tahir and Hua Chen
Meterscale Strong Coupling between Magnons and Photons 106702
Jinwei Rao, C. Y. Wang, Bimu Yao, Z. J. Chen, K. X. Zhao, and Wei Lu
Fractionalization in Fractional Correlated Insulating States at $n \pm 1/3$ Filled Twisted Bilayer Graphene 106801
Dan Mao, Kevin Zhang, and Eun-Ah Kim
Exact Quantum Virial Expansion for the Optical Response of Doped Two-Dimensional Semiconductors 106901
Brendan C. Mulkerin, Antonio Tiene, Francesca Maria Marchetti, Meera M. Parish, and Jesper Levinsen

Statistical Physics; Classical, Nonlinear, and Complex Systems

Nonreciprocal Cahn-Hilliard Model Emerges as a Universal Amplitude Equation 107201
Tobias Frohoff-Hülsmann and Uwe Thiele

Polymers, Chemical Physics, Soft Matter, and Biological Physics

Global and Local Connectivities Describe Hydrogen Intercalation in Metal Oxides 108001
Evan V. Miu, James R. McKone, and Giannis Mpourmpakis
Extreme Spontaneous Deformations of Active Crystals 108301
Xia-qing Shi, Fu Cheng, and Hugues Chaté

Errata

Erratum: Viscous to Inertial Transition in Dense Granular Suspension [Phys. Rev. Lett. **129**, 078001 (2022)] 109901
Franco Tapia, Mie Ichihara, Olivier Pouliquen, and Élisabeth Guazzelli
Erratum: Charge-Sign Dependent Cosmic-Ray Modulation Observed with the Calorimetric Electron Telescope on the International Space Station [Phys. Rev. Lett. **130**, 211001 (2023)] 109902
O. Adriani *et al.* (CALET Collaboration)
Erratum: Black Holes in an Effective Field Theory Extension of General Relativity [Phys. Rev. Lett. **121**, 251105 (2018)] 109903
Vitor Cardoso, Masashi Kimura, Andrea Maselli, and Leonardo Senatore

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.