PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Magnetic control of liquid interfaces for tunable optofluidic lenses *(6 pages)* 065503
Mojtaba Moshkani, Daehee Kim, Mathieu Couillard, and Jason Twamley

Statistical analysis of mass-spectrometry-based secondary-ion counting data: Characterization of nanoscale ultrafast secondary-ion emission phenomena triggered by energetic large-cluster impacts on solids *(21 pages)* 065504
K. Hirata and D. Asakawa

Propagation of coherent mechanical waves in stealth hyperuniform materials in the transparent regime *(14 pages)* 065505
Tony Valier-Brasier

Self-propelled droplet dynamics on superhydrophobic surfaces under low-pressure conditions *(9 pages)* 065506
Xiaonan Li, Jiayi Zhou, Haiyan Luo, Xueli Zheng, and Guo Chen

Mode coupling and resonance-induced relaxation in carbon nanotubes *(15 pages)* 065507
Hang Yu, Lin Deng, Weicheng Fu, Zhigang Zhu, Yisen Wang, and Liang Huang

Predicting instantaneous friction from friction damping coefficients in underdamped sliding *(7 pages)* 065508
Chengdong Sun, Yi Tao, Zaoqi Duan, Kai Chen, Quan Han, Yajing Kan, Zhonghua Ni, Zhiyong Wei, Yan Zhang, and Yunfei Chen

Analytic theory of shear localization in amorphous solids confined by Couette geometry *(11 pages)* 065509
Yang Fu, Yuliang Jin, and Itamar Procaccia

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Nonequilibrium assembly mechanisms of Janus-polymer-grafted carbon nanotubes during surface-initiated polymerization-coupled assembly *(21 pages)* 065411
Zhiyuan Cheng, Chun Liu, Yan Wang, and Hong Liu

Chromatic percolation in two-dimensional multitype particle systems with extended-range homotypic repulsion *(8 pages)* 065412
Tingting Yin, Yan Sui, Xueying Yuan, and Xian Kong

Dispersion relations for active undulators in overdamped environments *(8 pages)* 065413
Christopher J. Pierce, Daniel Irvine, Lucinda Peng, Xuefei Lu, Hang Lu, and Daniel I. Goldman

General approach for partitioning and phase separation in macromolecular coexisting phases *(14 pages)* 065414
Vikki Anand Varma and Alberto Scacchi

Nanoparticle-mediated interactions governing thermal gelation of protein dispersions with tunable properties *(12 pages)* 065415
Soumya, Sugam Kumar, Joachim Kohlbrecher, and Vinod K. Aswal

Force and geometric signatures of the creep-to-failure transition in a granular pile *(7 pages)* 065417
Qing Hao, Luca Montoya, Elena Lee, Luke K. Davis, and Cacey Stevens Bester

Fast local motions and their transitions in polybutadiene across the glass transition *(10 pages)* 065418
Tatsuya Kikuchi, Ryo Mashita, Tomomi Masui, Toshiji Kanaya, Hiroyuki Kishimoto, and Kenji Nakajima

Atomic-scale insights into melting and supercooling mechanism of sodium acetate trihydrate via molecular dynamics *(22 pages)* 065419
Ping Li, Chuanshuai Dong, and Lizhi Zhang

Second-order modified mean-field theory for textured immobilized magnetic nanoparticles *(13 pages)* 065420
Elena V. Grokhotova, Jing Zhong, Alexey O. Ivanov, and Ekaterina A. Elfimova

Precise determination of the long-time asymptotics of the diffusion spreadability of two-phase media *(16 pages)* 065421
Shaobing Yuan and Salvatore Torquato

Collective ballistic motion explains fast aggregation in adhesive active matter *(6 pages)* 065422
Emanuel F. Teixeira, Pablo de Castro, Carine P. Beatrici, Heitor C. M. Fernandes, and Leonardo G. Brunnet

Hydrodynamic theory of wetting by active particles *(17 pages)* 065423
Noah Grodzinski, Michael E. Cates, and Robert L. Jack

Statistical mechanics for organic mixed conductors: Phase transitions in a lattice gas *(12 pages)* 065424
Lukas M. Bongartz

Electronic access to glass transition in supercooled ionic liquids using ambipolar transistor *(8 pages)* 065425
Tanima Kundu, Rahul Paramanik, Aishee Saha, Shibnath Mandal, Antarik Sarkar, Bipul Karmakar, and Subhadeep Datta

Selective wave transmission in strongly nonlinear disordered granular chains *(7 pages)* 065426
João Guilherme Pinto de Freitas, Luis Paulo Silveira Machado, and Surajit Sen

Mechanics, Interfaces, and Films

Vanishing dynamic strength measured in a transient high-pressure phase of tin *(18 pages)* 065502
Michael B. Prime, Justin L. Brown, Saryu J. Fensin, David R. Jones, and Joshua W. Dyer

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Boltzmann sampling by diabatic quantum annealing *(10 pages)* 065302
Ju-Yeon Gyhm, Gilhan Kim, Hyukjoon Kwon, and Yongjoo Baek

Sequential learning and catastrophic forgetting in differentiable resistor networks *(11 pages)* 065303
Maniru Ibrahim

Exchange Monte Carlo for continuous-space path integral Monte Carlo simulation *(11 pages)* 065304
Xun Zhao and Synge Todo

ChronoCast: A time-series paradigm for molecular dynamics simulation using equivariant graph neural networks *(11 pages)* 065305
Yuxing Wang, Zhongwei Zhang, Shuang Lu, Shuyue Shan, Vitaly A. Kuzkin, Anton M. Krivtsov, and Jie Chen

Minimal-dissipation learning for energy-based models *(10 pages)* 065306
Jeff Hnybida and Simon Verret

Soft Matter including Polymers, Liquid Crystals, and Granular Materials

Topological flux on a context manifold generates nonreciprocal collective dynamics *(11 pages)* 065401
Jyotiranjan Beuria and Venkatesh H. Chembrolu

Externally driven condensates show translation-induced polarization, directed coalescence, and anomalous diffusion in viscoelastic media *(19 pages)* 065402
Andriy Goychuk

Water in motion: How charged semiflexible nanofibers affect self-diffusion of water *(9 pages)* 065403
Hanno Holzinger, Ahmad Reza Motezakker, Sergey V. Dvinskikh, Korneliya Gordeyeva, Per Tomas Larsson, and Daniel Söderberg

Emergence of periodic potential for point defects in a two-dimensional hexagonal colloidal lattice *(12 pages)* 065404
Xicheng Huang, Zefei Liu, Yong-Cong Chen, Guohong Yang, and Ping Ao

Free-energy model of ferroelectric transition in P(VDF-TrFE) copolymer *(15 pages)* 065405
Vadim V. Atrazhev, Dmitry V. Dmitriev, and Vadim I. Sultanov

Further testing the validity of generalized heterogeneous-elasticity theory for low-frequency excitations in structural glasses *(7 pages)* 065406
Walter Schirmacher, Matteo Paoluzzi, Felix Cosmin Mocanu, Dmytro Khomenko, Grzegorz Szamel, Francesco Zamponi, and Giancarlo Ruocco

Edwards thermodynamic framework controls density segregation in cyclically sheared granular materials *(8 pages)* 065407
Haiyang Lu, Houfei Yuan, Shuyang Zhang, Zhikun Zeng, Yi Xing, Jiazhao Xu, Xin Wang, and Yujie Wang

Dissipative response of driven bead-spring-dashpot chains *(18 pages)* 065408
R. Kailasham

Linear Rayleigh-Taylor instability with foams *(8 pages)* 065409
A. Bret, A. J. DeVault, S. G. Dannhoff, M. Gatu Johnson, C. K. Li, and J. A. Frenje

Yielding in dense active matter *(16 pages)* 065410
Adil Ghaznavi, Saverio Rossi, Francesco Zamponi, and M. Lisa Manning

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Virtual cathode behavior in a crossed-field gap *(12 pages)* 065202
Ashmita Panda, Jim Browning, and Allen L. Garner

Nonlinear dynamics of slow ions near the cyclotron resonance: A possibility for optimization of an electrodeless plasma thruster *(11 pages)* 065203
Maxim Tereshchenko

Zonal magnetic fields regulate nonlinear edge-localized-mode dynamics via self-consistent force balance *(7 pages)* 065204
Nami Li, Xueqiao Xu, Ben Dudson, Rob Falgout, and Giorgis Georgakoudis

Electron penetration heating in turbulent magnetic loops driven by nonrelativistic laser-plasma interaction *(10 pages)* 065205
Zheng Gong, Sida Cao, Caleb Redshaw, and Matthew R. Edwards

Effects of hydrodynamic motion on the stopping power and energy deposition of alpha particles in an inertial confinement fusion hotspot *(12 pages)* 065206
Bao Du, Dongguo Kang, Peilin Yao, Fengjun Ge, Zhensheng Dai, Shiyang Zou, Zongqiang Yuan, Lianqiang Shan, Hongbo Cai, and Shaoping Zhu

Humidity as a critical parameter for predicting breakdown voltage in submicrometer electrode gaps in air *(9 pages)* 065207
B. Disson, N. Bonifaci, O. Lesaint, C. Poulain, R. Dussart, and S. Iseni

Kinetic and fluid descriptions of Jeans instability in kappa-distributed suprathermal astrophysical plasmas *(10 pages)* 065208
Pooja Dalal and Ram Prasad Prajapati

High-energy pulsed electron-beam-induced phase transitions in a plasma-levitated crystalline dust cluster *(10 pages)* 065209
Beatrice Paraschiv, Dorina Ticoş, Nicoleta Udrea, Adrian Scurtu, Maria L. Mitu, and Cătălin M. Ticoş

Performance enhancement of direct-drive shock-augmented ignition inertial fusion implosions through shock timing optimization *(12 pages)* 065210
M. Khan, K. Churnetski, D. E. M. Barlow, R. Betti, C. Freeman, K. Glize, J. Kunimune, A. Lees, R. Mancini, A. Nutter, R. W. Paddock, S. Regan, C. Stoeckl, W. Theobald, N. Woolsey, and R. H. H. Scott

Dynamic stabilization of the isolated internal defect in the presence of a temporally modulated laser prepulse *(14 pages)* 065211
Y. Z. Han, K. G. Zhao, Z. Y. Li, Y. X. Liu, C. Xue, J. W. Li, Z. Chen, J. Q. Dong, J. F. Wu, L. F. Wang, and W. Y. Zhang

Modeling transport in weakly collisional plasmas using thermodynamic forcing *(25 pages)* 065212
Prakriti Pal Choudhury and Archie F. A. Bott

Reconstruction of residual kinetic energy in inertial-confinement fusion implosions at the National Ignition Facility using multiple heterogeneous data sources and neural networks *(14 pages)* 065213
J. H. Kunimune, D. T. Casey, B. Kustowski, M. Jones, L. Divol, T. M. Johnson, S. G. Dannhoff, A. DeVault, and J. A. Frenje

Computational Physics, Machine Learning, and Artificial Intelligence

Complexity-powered machine intelligent classification of quantum many-body dynamics *(7 pages)* 065301
Zhaoran Feng (冯赵然), Jiangzhi Chen (陈江芷), Ce Wang (王策), and Jie Ren (任捷)

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Quorum sensing promotes the emergence of antifragile regimes that increase bacterial communities' diversity *(12 pages)* 064411
Ivan Lechuga Jimenez and James Q. Boedicker

Stress anisotropy in axisymmetric 3D active curved structures *(15 pages)* 064412
Yuting Lou, Sophie Theis, Jean-Francois Rupprecht, Timothy E. Saunders, and Tetsuya Hiraiwa

Fluid Dynamics

Numerical search for states with constant enstrophy flux over finite time intervals in two-dimensional turbulence *(10 pages)* 065101
Kyo Yoshida

Wake-tail effects in two-dimensional wave refocusing *(8 pages)* 065102
Theodoros T. Koutserimpas

Resonance behavior of a bubble near a spherical inclusion *(20 pages)* 065103
Thomas Micol, Alexander A. Doinikov, Cyril Mauger, and Claude Inserra

Regulating droplet-surface contact time via a predeposited microparticle *(19 pages)* 065104
Chao-Sheng Li, Shun-Jie Wu, Rong-Rong Cai, and Li-Zhi Zhang

Amplitude variation in spanwise wall oscillations: Effects on drag reduction and heat transfer in compressible turbulent channel flow *(15 pages)* 065105
Fangliang Xu, Wei Liu, and Peng Zhang

Global Buckley-Leverett theory for multicomponent flow in fractured media: Isothermal equation-of-state coupling and dynamic capillarity *(13 pages)* 065106
Christian Tantardini and Fernando Alonso-Marroquín

Flow of yield stress fluid in a percolating network *(12 pages)* 065107
Nathan Abitbol, Alex Hansen, Alberto Rosso, and Laurent Talon

Plume stretching in the trapped region of a reoriented potential mixer *(9 pages)* 065108
Roseanna M. Neupauer, James D. Meiss, and Tomás G. Dabove

Nonlinear bubble resonance: Geometric mechanisms and onset scaling *(16 pages)* 065109
Shilin Yu, Wenbao Zheng, Chao Zeng, and Wen Deng

Parabolic focusing of water waves via a straight reflector based on the space transformation method *(12 pages)* 065110
Zhigang Zhang, ChenXu Zhang, Chi Zhang, Takahito Iida, and Xiangqian Zhu

Theory and simulation of turbulence driven by momentum transfer from material emitting high-energy particles *(21 pages)* 065111
S. E. Kuratov, A. Yu. Mikulin, S. I. Glazyrin, and D. S. Shidlovski

Plasma Physics

Onset of Rayleigh-Bénard convection at fuel-ablator interfaces in inertial confinement fusion simulations *(12 pages)* 065201
Raymond Lau and Seth Davidovits

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Relations among different inequality measures in complex systems: From kinetic exchange to earthquake models *(15 pages)* 064308
Shohini Sen, Suchismita Banerjee, and Bikas K. Chakrabarti

Effect of temporary lockdowns on disease extinction risk in assortative networks *(10 pages)* 064309
Elad Korngut and Michael Assaf

Fractional degree centrality for directed networks *(13 pages)* 064310
Kang-Ju Lee, Ki-Ahm Lee, Woong Kook, and Taehun Lee

Collective decision making with higher-order interactions on d-uniform hypergraphs *(15 pages)* 064311
Thierry Njougouo, Timoteo Carletti, and Elio Tuci

Robustness of networks of hypergraphs *(18 pages)* 064312
Xiyao Sun, Yuanyuan Pang, Zhengao Guo, Xiaoming Liang, and Jie Zhou

Biological Physics

Learning stochastic cellular dynamics from snapshots through bidirectional causal neural stochastic differential equations *(13 pages)* 064401
Yuting Meng, Rabia Sultan, Peixuan Jiang, Qiuman Wang, Dian Tan, Jiao Wang, Peiluan Li, and Luonan Chen

Intrinsic noise suppression in protein allostery: Quantifying pathway redundancy via spanning tree statistics *(20 pages)* 064402
Burak Erman

Detecting active Lévy particles using differential dynamic microscopy *(13 pages)* 064403
Mingyang Li (李明洋), Yu'an Li (李聿安), H. P. Zhang (张何朋), and Yongfeng Zhao (赵永峰)

Reinforcement learning for chemotherapy scheduling in a stochastic tumor evolution model *(15 pages)* 064404
M. Giles and P. K. Newton

Entropic clustering of stickers induces aging in biocondensates *(8 pages)* 064405
Hugo Le Roy and Paolo De Los Rios

Resource and population dynamics in an agent-environment interaction model *(15 pages)* 064406
Gaston Briozzo, Gustavo J. Sibona, and Fernando Peruani

Miniature work-to-work converter engine powered by motor protein *(14 pages)* 064407
Suraj Deshmukh, Sougata Guha, Basudha Roy, Shivprasad Patil, Arnab Saha, and Sudipto Muhuri

Bifurcations and multistability in inducible three-gene toggle switch networks *(30 pages)* 064408
Rebecca J. Rousseau and Rob Phillips

Influence of visual field offset on collective behavior: An exploration using the two-dimensional Vicsek model *(12 pages)* 064409
Poorendra Ramlall, Sachit Butail, and Subhradeep Roy

Emergence of a fluctuation-driven cooperative solidlike phase in Potts model monolayers *(19 pages)* 064410
Alexander J. Devanny and Laura J. Kaufman

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Supratransmission in lattices with purely nonlinear coupling *(12 pages)* 064205
Defri Ahmad, Tae-Yeon Kim, Andreas Schiffer, Jinkyu Yang, and Hadi Susanto

Pacemaker-induced spiral wave chimeras on a sphere of delay-coupled oscillators: Switching between different spiral-phase kinks *(14 pages)* 064206
Chol-Ung Choe, Ryong-Son Kim, and Jin-Song Kang

Regime identification and control of extremes in the nonautonomous Lorenz model with chaos and intransitivity *(11 pages)* 064207
Moyan Liu, Qin Huang, and Upmanu Lall

Evolution of localized pulses in the defocusing modified Korteweg–de Vries equation theory *(13 pages)* 064208
L. F. Calazans de Brito, A. Gammal, and A. M. Kamchatnov

Collective coordinate descriptions of a kink in a driven-damped ϕ^4 model *(20 pages)* 064209
Jacek Gatlik, Tomasz Dobrowolski, Jean-Guy Caputo, and Panayotis G. Kevrekidis

Unsteady phase waves in the one-dimensional swarmalator model with inertia *(9 pages)* 064210
Kevin O'Keeffe

Van Hove singularities in the density of states of a chaotic dynamical system *(10 pages)* 064211
Bryn Davies

Controlling synchronization dynamics via physics-informed neural networks *(15 pages)* 064212
Kaiming Luo

PART B

Networks and Complex Systems

Competition between private and expressed opinions in binary choice: The α-EPO q-voter model *(13 pages)* 064301
Barbara Kamińska, Barbara Nowak, Arkadiusz Lipiecki, and Katarzyna Sznajd-Weron

Diffusion-driven pattern formation in an opinion dynamical network model *(9 pages)* 064302
Tim Mauch and Thilo Gross

Minority takeover in majority dynamics: Searching for rare initializations via the history passing algorithm *(29 pages)* 064303
Marek Jankola, Freya Behrens, Cédric Koller, and Lenka Zdeborová

Community detection by the normalized Ricci flow with the optimization of the information entropy *(12 pages)* 064304
Wenli Wang, Silu Wang, Chaoqun Ma, Yi Xiong, Guoqing Chen, and Jiao Gu

Threshold and quasistationary distribution for the susceptible-infectious-susceptible model on networks *(11 pages)* 064305
George T. Cantwell and Cristopher Moore

Discontinuous wealth-gradient transition driving cooperation *(9 pages)* 064306
Hyun Gyu Lee, Hyeong-Chai Jeong, and Deok-Sun Lee

Spatial correlations in susceptible-infected-susceptible processes on random regular graphs *(10 pages)* 064307
Alexander Leibenzon, Samuel W. S. Johnson, Ruth E. Baker, and Michael Assaf

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

From spark to conflagration: A multiscale thermodynamic-percolation framework for wildland-fire spread *(18 pages)* 064143
Xiaoping Shi, Mir Faizal, Arshid Shabir, and Behnam Pourhassan

Two-temperature Ashkin-Teller model *(7 pages)* 064144
Sertac Cengiz and M. Cemal Yalabik

First-passage processes in a deterministic one-dimensional cellular automaton model of traffic flow *(21 pages)* 064145
Ofer Biham, Gilad Hertzberg Rabinovich, and Eytan Katzav

Magnetoelastic signatures of thermal and quantum phase transitions in a deformable Ising chain under a longitudinal and transverse magnetic field *(17 pages)* 064146
Dávid Sivý and Jozef Strečka

Steady-state equilibrium and nonequilibrium noisy network dynamics *(18 pages)* 064148
Pik-Yin Lai (黎璧賢)

Stochastic search with space-dependent diffusivity *(14 pages)* 064149
Hwai-Ray Tung and Sean D. Lawley

Universal thermodynamic uncertainty relation for quantum f divergences *(6 pages)* 064150
Domingos S. P. Salazar

Heat, work, and fluctuations in a driven quantum resonator *(10 pages)* 064151
Riya Baruah, Pedro Portugal, Jun-Zhe Chen (陈俊哲), Joachim Wabnig, and Christian Flindt

Revisiting the ratchet principle: Lessons from active and passive stochastic dynamics *(28 pages)* 064152
Jessica Metzger, Sunghan Ro, and Julien Tailleur

Crossover in the ordered phase in the non-Mermin-Wagner-Hohenberg regime of spin models with long-range coupling *(14 pages)* 064153
Jiewei Ding, Jiahao Su, Ho-Kin Tang, and Wing Chi Yu

Quantized dynamical pumping via dissipation in a mechanical Thouless pump *(10 pages)* 064154
Marius Jürgensen and Mikael C. Rechtsman

Analytical theory of chiral active particle transport in a fluctuating density field *(18 pages)* 064155
Jayam Joshi, Abhra Puitandy, and Shradha Mishra

Nonlinear Dynamics and Chaos

Imitation strategy in the Rosenzweig-MacArthur model *(11 pages)* 064201
Przemysław Gawroński, Alfio Borzì, and Krzysztof Kułakowski

Relative-advection-induced instability in a reaction-diffusion-advection system *(11 pages)* 064202
Chuanjun Dai, Ruyi Zhou, Qing Guo, and Min Zhao

Innate behavioral mechanisms and defensive traits in ecological models of predator-prey types *(23 pages)* 064203
Sangeeta Saha, Swadesh Pal, and Roderick Melnik

Pearl supratransmission in a boundary-driven two-dimensional nonlinear Schrödinger equation with a hole *(17 pages)* 064204
Rudy Kusdiantara and Hadi Susanto

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Spectral properties of non-Hermitian real random matrices with long-range correlations *(7 pages)* 064126
Ulysse Marquis

Vector resonant relaxation and statistical closure theory. II. One-loop closure *(26 pages)* 064127
Sofia Flores and Jean-Baptiste Fouvry

Correlated measurements in single-particle-tracking dynamics *(6 pages)* 064128
Wen Bao, Rui Xing, Hai-Yang Wang, and Jing-Dong Bao

Exact steady states and fragmentation-induced relaxation in the no-passing asymmetric simple exclusion process *(19 pages)* 064129
Urei Miura

Dissipation-coherence tradeoff for stochastic oscillations *(9 pages)* 064130
Jie Gu

Fractal-driven universality in quantum transport through mesoscopic devices *(12 pages)* 064131
F. M. Oliveira, Louis G. C. S. Sá, and J. G. G. S. Ramos

Learning stochastic thermodynamics directly from correlation and trajectory-fluctuation currents *(18 pages)* 064132
Jinghao Lyu, Kyle J. Ray, and James P. Crutchfield

Algebraic to exponential decay of spatial correlations in one-dimensional and confined hard-core fluids: A Laplace-pole analysis *(9 pages)* 064133
Ana M. Montero and Andrés Santos

Quantum statistical-gauge geometry *(15 pages)* 064134
Hai Pham-Van

Universality and ambiguity in extremes of anomalous diffusion *(15 pages)* 064135
Sean D. Lawley

Stochastic thermodynamics of nonreciprocally interacting particles and fields *(28 pages)* 064136
Atul Tanaji Mohite and Heiko Rieger

Autonomous quantum thermodynamics with a quantum kicked top reservoir *(12 pages)* 064137
Chun-Yan Kang, Zhi-Ren Pu, and You-Yang Xu

Dynamical typicality in classical lattice systems *(9 pages)* 064138
Nicolas Nessi and Peter Reimann

Vanishing correlations in stochastic and bistochastic controlled circuits *(8 pages)* 064139
Pavel Kos, Bruno Bertini, and Tomaž Prosen

Nonreciprocal Blume-Capel model with antisymmetric single-ion anisotropies *(13 pages)* 064140
Arjun R, Pratyush Prakash Patra, and A. V. Anil Kumar

Dynamic Monte Carlo study of rigidity percolation using an event-based ensemble approach *(18 pages)* 064141
Mingzhong Lu, Yufeng Song, Qiyuan Shi, Ming Li, and Youjin Deng

Accuracy comes at a cost: Optimal localization against a flow *(10 pages)* 064142
Till Welker and Patrick Pietzonka

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

First-passage-time properties of diffusion with a broad class of stochastic diffusion coefficients *(14 pages)* 064108
Go Uchida, Hiromi Miyoshi, and Hitoshi Washizu

Violation of local equilibrium thermodynamics in one-dimensional Hamiltonian-Potts model *(8 pages)* 064109
Hitomi Endo and Michikazu Kobayashi

Quantum spin-2 ferromagnetic Blume-Capel model in the presence of a transverse crystal field *(11 pages)* 064110
J. Torrico, D. C. Carvalho, and J. A. Plascak

Two-dimensional Ising model with the next nearest interactions *(6 pages)* 064111
Zhidong Zhang

Cellular automata in d dimensions and ground states of spin models in $(d+1)$ dimensions *(19 pages)* 064112
Konstantinos Sfairopoulos, Luke Causer, Jamie F. Mair, and Juan P. Garrahan

Exact critical-temperature bounds for two-dimensional Ising models *(23 pages)* 064113
Davidson Noby Joseph and Igor Boettcher

Biologically relevant finite-size effects in a driven lattice gas with particle pausing and dynamical defects *(14 pages)* 064114
Johannes Keisers, Lorenzo Vito Dal Zovo, Norbert Kern, and Luca Ciandrini

Biased continuous-time random walks with asymmetric waiting-time distributions as a model of anomalous diffusion in the presence of drift *(17 pages)* 064116
Guohua Li, Andrey G. Cherstvy, Wenya Guo, Hong Zhang, Ting Liu, Wendong Pu, and Ralf Metzler

Balancing power, efficiency, and constancy under broken time-reversal symmetry *(9 pages)* 064117
Ousi Pan, Zhiqiang Fan, Shunjie Zhang, Liwei Chen, Jincan Chen, and Shanhe Su

Linearization principle: The geometric origin of nonlinear Fokker-Planck equations *(5 pages)* 064118
Hiroki Suyari

Boundary-induced drift and negative mobility in constrained stochastic systems *(6 pages)* 064119
Meitar Goldfarb and Stanislav Burov

Hydrodynamic fluctuations of stochastic charged cellular automata *(7 pages)* 064120
Takato Yoshimura and Žiga Krajnik

Making non-Markovian master equations accessible with approximate environments *(25 pages)* 064121
Gerardo Suárez and Michał Horodecki

Emergent metastable behavior in a resource-constrained network of exclusion processes *(16 pages)* 064122
Nikhil Bhatia, Ashish Kumar Pandey, and Arvind Kumar Gupta

Finite-temperature topological transitions in the presence of quenched uncorrelated disorder *(9 pages)* 064123
Claudio Bonati and Ettore Vicari

Complete decomposition of anomalous diffusion in variable speed generalized Lévy walks *(21 pages)* 064124
Abhijit Bera and Kevin E. Bassler

Resetting of underdamped Brownian motion *(11 pages)* 064125
Hanna Franke and Igor M. Sokolov

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 113, NUMBER 6** **JUNE 2026**

Networks and Complex Systems

Higher-order contagion processes in 3.99 dimensions *(6 pages)* L062301
Sandro Meloni, Andrea Gabrielli, and Pablo Villegas

Approach to network failure due to intrinsic fluctuations *(7 pages)* L062302
Shaunak Roy, Vimal Kishore, and M. S. Santhanam

Biological Physics

Collective dynamics of natural killer cells interacting with cancer and fibroblast cells *(7 pages)* L062401
Yun-Xuan Zhang, Shu-Chen Liu, and Lin I

Topological enhancement of protein kinetic stability *(6 pages)* L062402
João N. C. Especial and Patrícia F. N. Faísca

Plasma Physics

Electron heat flux and whistler instability in the Earth's magnetosheath *(7 pages)* L063201
Ida Svenningsson, Emiliya Yordanova, Yuri V. Khotyaintsev, Mats André, Giulia Cozzani, Alexandros Chasapis, and Steven J. Schwartz

Soft Matter including Polymers, Liquid Crystals, and Granular Materials

Micelle enrichment in liquid foams *(7 pages)* L063401
Leonardo Chiappisi

ARTICLES

Statistical Physics

Resetting-induced instability in queues fed by a search process in an interval *(12 pages)* 064101
José Giral-Barajas and Paul C. Bressloff

Ergodicity and hydrodynamics: From quantum to classical spin systems *(13 pages)* 064102
Jiaozi Wang, Luca Capizzi, Dario Poletti, and Leonardo Mazza

Hyperuniformity in active fluids reshapes nucleation and capillary-wave dynamics *(13 pages)* 064103
Raphaël Maire

Dynamical phase transitions in certain nonergodic stochastic processes *(22 pages)* 064104
Yogeesh Reddy Yerrababu, Satya N. Majumdar, Benjamin Guiselin, and Tridib Sadhu

Granger causality maps for Langevin systems *(11 pages)* 064105
Lionel Barnett, Benjamin Wahl, Nadine Spychala, and Anil K. Seth

Quantum size effect and two-step condensation of ideal Bose atoms in an optical hard-wall nanotube *(17 pages)* 064106
Ze Cheng

Relaxation of the random site Coulomb glass model in two dimensions *(7 pages)* 064107
Preeti Bhandari and Vikas Malik

(Continued)

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E™

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 2470-0045)

PERIODICALS
Postmaster send address changes to:

APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 113, NUMBER 6
PARTS A AND B

CONTENTS

JUNE 2026

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 061001–064212, and Part B pages 064301–065509.

PART A

Perspectives

Characterizing emergent multiscale dynamics in colloidal nanoparticle gels *(31 pages)* 061001
William D. Brackett, Zachary M. Sherman, Felix Lehmkühler, Thomas M. Truskett, and Delia J. Milliron

Geomimicry: Emergent dynamics in Earth-mediated complex materials *(19 pages)* 061002
Shravan Pradeep, Emanuela Del Gado, Douglas J. Jerolmack, and Paulo E. Arratia

LETTERS

Statistical Physics

Multicriticality in stochastic dynamics protected by self-duality *(9 pages)* L062101
Konstantinos Sfairopoulos, Luke Causer, and Juan P. Garrahan

Controlling the glass transition through active fluctuating interactions *(8 pages)* L062102
Emir Sezik, Henry Alston, and Thibault Bertrand

Absorbing state dynamics of stochastic gradient descent *(7 pages)* L062103
Guanming Zhang and Stefano Martiniani

Relationship between Heider links and Ising spins *(6 pages)* L062104
Zdzislaw Burda, Maciej Wołoszyn, Krzysztof Malarz, and Krzysztof Kułakowski

Nonlinear Dynamics and Chaos

Oscillatory evolutionarily stable state and limit cycle in replicator dynamics *(6 pages)* L062201
Suman Chakraborty, Vikash Kumar Dubey, Vaibhav Madhok, and Sagar Chakraborty

Feasibility and single parameter scaling of extinctions in large ecological communities *(6 pages)* L062202
Philippe Jacquod

Stability theory of flat band solitons in nonlinear wave systems *(6 pages)* L062203
Cheng Shi, Ross Parker, Panayotis G. Kevrekidis, and Michael I. Weinstein

(Continued)

2470-0045(202606)113:6:A;1-W

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

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).