PHYSICAL REVIEW E THIRD SERIES, VOLUME 104, NUMBER 5 NOVEMBER 2021

Effect of ionic disorder on the principal shock Hugoniot *(10 pages)* 055208
Crystal F. Ottoway, Daniel A. Rehn, Didier Saumon, and C. E. Starrett

Computational Physics

Fundamental derivation of two Boris solvers and the Ge-Marsden theorem *(6 pages)* 055301
Siu A. Chin

Machine-learning nonconservative dynamics for new-physics detection *(14 pages)* 055302
Ziming Liu, Bohan Wang, Qi Meng, Wei Chen, Max Tegmark, and Tie-Yan Liu

Quasistatic rheology of soft cellular systems using the cellular Potts model *(7 pages)* 055303
François Villemot and Marc Durand

Configuration spaces of hard spheres *(14 pages)* 055304
O. B. Eriçok, K. Ganesan, and J. K. Mason

Variant of gas kinetic flux solver for flows beyond Navier-Stokes level *(24 pages)* 055305
Z. Y. Yuan, C. Shu, Z. J. Liu, L. M. Yang, and W. Liu

Energy balance and energy correction in dynamics of classical spin systems *(8 pages)* 055306
Dmitry A. Garanin

Semicomputational calculation of Bragg shift in stratified materials *(13 pages)* 055307
Benjamin Frey, Patrick Snyder, Klaus Ziock, and Ali Passian

Smoothed particle hydrodynamics with adaptive spatial resolution for multiphase flows with large density ratio *(14 pages)* 055308
Xiufeng Yang, Song-Charng Kong, and Qingquan Liu

Family of parametric second-order boundary schemes for the vectorial finite-difference-based lattice Boltzmann method *(10 pages)* 055309
Xi Zhang, Minfu Feng, and Jin Zhao

Bootstrapping time correlation functions of molecular dynamics *(14 pages)* 055310
Nicolas Desbiens, Philippe Arnault, William Weens, Vincent Dubois, and Guillaume Perrin

Overcoming timestep limitations in boosted-frame particle-in-cell simulations of plasma-based acceleration *(12 pages)* 055311
Olga Shapoval, Remi Lehe, Maxence Thévenet, Edoardo Zoni, Yinjian Zhao, and Jean-Luc Vay

ERRATA

Erratum: Description of a stochastic system by a nonadapted stochastic process [Phys. Rev. E **104**, 014139 (2021)] *(2 pages)* . . . . . 059901(E)
Piero Olla

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 104, NUMBER 5** **NOVEMBER 2021**

Fluid Dynamics

Dynamic effects in transition from regular to Mach reflection in steady supersonic flows *(13 pages)* 055101
Rohtash Goyal, A. Sameen, T. Jayachandran, and G. Rajesh

Coupling between internal and external mass transfer during stage-1 evaporation in capillary porous media: Interfacial resistance approach *(21 pages)* 055102
Marouane Talbi and Marc Prat

Theoretical derivation of slip boundary conditions for single-species gas and binary gas mixture *(11 pages)* 055103
Jun Zhang, Peng Luan, Junchao Deng, Peng Tian, and Tengfei Liang

Scaling law of mixing layer in cylindrical Rayleigh-Taylor turbulence *(9 pages)* 055104
Zhiye Zhao, Pei Wang, Nan-Sheng Liu, and Xi-Yun Lu

Laplacian growth with an isolated bubble near a tip *(7 pages)* 055105
Tamuz Danzig and Oded Agam

Quantitative model for predicting the imbibition dynamics of viscoelastic fluids in nonuniform microfluidic assays *(9 pages)* 055106
Yashwant Rawat, Sachit Kalia, and Pranab Kumar Mondal

Internal energy in compressible Poiseuille flow *(8 pages)* 055107
Konrad Gizynski, Karol Makuch, Jan Paczesny, Yirui Zhang, Anna Maciołek, and Robert Holyst

Stabilizing viscous extensional flows using reinforcement learning *(16 pages)* 055108
Marco Vona and Eric Lauga

Plasma Physics

Shock width measured under liquid and solid conditions in a two-dimensional dusty plasma *(7 pages)* 055201
Anton Kananovich and J. Goree

Identification of electrostatic two-stream instabilities associated with a laser-driven collisionless shock in a multicomponent plasma *(13 pages)* 055202
Youichi Sakawa, Yutaka Ohira, Rajesh Kumar, Alessio Morace, Leonard N. K. Döhl, and Nigel Woolsey

Transitional regime of electron resonant interaction with whistler-mode waves in inhomogeneous space plasma *(14 pages)* 055203
A. V. Artemyev, A. I. Neishtadt, A. A. Vasiliev, and D. Mourenas

Kinetic analysis of the plasma sheath around an electron-emitting object with elliptic cross section *(11 pages)* . . . 055204
Luca Chiabó, Sadaf Shahsavani, and Gonzalo Sánchez-Arriaga

Fully kinetic simulations of strong steady-state collisional planar plasma shocks *(6 pages)* 055205
S. E. Anderson, L. Chacón, W. T. Taitano, A. N. Simakov, and B. D. Keenan

Momentum distribution of the uniform electron gas at finite temperature: Effects of spin polarization *(18 pages)* 055206
Tobias Dornheim, Jan Vorberger, Burkhard Militzer, and Zhandos A. Moldabekov

Asymmetric one-dimensional slow electron holes *(12 pages)* 055207
I. H. Hutchinson

(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 104, NUMBER 5 NOVEMBER 2021

Liquid Crystals

Controlling permeation in electrically deforming liquid crystal network films: A dynamical Landau theory *(16 pages)* 054701
Guido L. A. Kusters, Nicholas B. Tito, Cornelis Storm, and Paul van der Schoot

Electro-optic hybrid aligned nematic device utilizing carbon nanotube arrays and two-dimensional hexagonal boron nitride nanosheet as alignment substrates *(8 pages)* 054702
Rajratan Basu and Derek T. Gess

Double-twisted nematic director configurations in cylindrical capillaries with a photocontrollable angle of twist *(10 pages)* 054703
A. Nych, R. Kravchuk, U. Ognysta, M. Ledney, and O. Yaroshchuk

Films and Interfaces

Electroprewetting near a flat charged surface *(11 pages)* 054801
Yoav Tsori

Rheology of sliding leaflets in coarse-grained DSPC lipid bilayers *(17 pages)* 054802
Othmene Benazieb, Claire Loison, and Fabrice Thalmann

Granular Materials

Anomalous diffusion in a monolayer of lightweight spheres fluidized in air flow *(10 pages)* 054901
Shihori Koyama, Tomoki Matsuno, and Takashi Noguchi

Aging-induced dynamics for statically indeterminate systems *(8 pages)* 054902
Jr-Jiun Lin, Chi-Chun Cheng, Yu-Chuan Cheng, and Tzay-Ming Hong

Solid Mechanics

Large-displacement symmetrical foldable cones *(9 pages)* 055001
K. A. Seffen

Generation of buckling and wrinkling in elastic films: The effect of initial imperfection *(8 pages)* 055002
Yidu Zhang (张益都), Langquan Shui (税朗泉), Yongshou Liu (刘永寿), and Ze Liu (刘泽)

Unified scenario for the morphology of crack paths in two-dimensional disordered solids *(13 pages)* 055003
L. Ponson, Z. Shabir, M. Abdulmajid, E. Van der Giessen, and A. Simone

Probing nonaffine expansion with light scattering *(12 pages)* 055004
Alesya Mikhailovskaya, Julien Fade, and Jérôme Crassous

Asymptotic softness of a laterally confined sheet in a pressurized chamber *(10 pages)* 055005
Oz Oshri

Theorem for the design of deployable kirigami tessellations with different topologies *(10 pages)* 055006
Xiangxin Dang, Fan Feng, Huiling Duan, and Jianxiang Wang

Effect of the density of pillar-patterned substrates on contact mechanics: Transition from top to mixed contact with a detailed pressure-field description *(10 pages)* 055007
R. Ledesma-Alonso, E. Raphael, F. Restagno, and C. Poulard

(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 104, NUMBER 5 NOVEMBER 2021

Second-virial theory for shape-persistent living polymers templated by disks *(14 pages)* 054505
M. Torres Lázaro, R. Aliabadi, and H. H. Wensink

Colloids, Complex Fluids, and Active Matter

Cumulative geometric frustration in physical assemblies *(11 pages)* 054601
Snir Meiri and Efi Efrati

Bulk rheology of sticky DNA-functionalized emulsions *(9 pages)* 054602
Iliya D. Stoev, Alessio Caciagli, Anasua Mukhopadhyay, Christopher Ness, and Erika Eiser

Anchoring-induced nonmonotonic velocity versus temperature dependence of motile bacteria in a lyotropic nematic liquid crystal *(12 pages)* 054603
Yu. Faidiuk, L. Skivka, P. Zelena, O. Tereshchenko, O. Buluy, V. M. Pergamenshchik, and V. Nazarenko

Phase behavior of hard circular arcs *(14 pages)* 054604
Juan Pedro Ramírez González and Giorgio Cinacchi

Connectedness percolation of fractal liquids *(7 pages)* 054605
René de Bruijn and Paul van der Schoot

Dynamics of liquids in the large-dimensional limit *(21 pages)* 054606
Chen Liu, Giulio Biroli, David R. Reichman, and Grzegorz Szamel

Role of diffusion in crystallization of hard-sphere colloids *(11 pages)* 054607
Michael A. Lam, Boris Khusid, Lou Kondic, and William V. Meyer

Profusion of transition pathways for interacting hysterons *(11 pages)* 054608
Martin van Hecke

Moving efficiently through a crowd: A nature-inspired traffic rule *(10 pages)* 054609
M. Danny Raj and V. Kumaran

Heating leads to liquid-crystal and crystalline order in a two-temperature active fluid of rods *(15 pages)* 054610
Jayeeta Chattopadhyay, Sindhana Pannir-Sivajothi, Kaarthik Varma, Sriram Ramaswamy, Chandan Dasgupta, and Prabal K. Maiti

Phase separation of self-propelled disks with ferromagnetic and nematic alignment *(16 pages)* 054611
Elena Sesé-Sansa, Demian Levis, and Ignacio Pagonabarraga

Effect of annealed disorder on phase separation kinetics and aging phenomena in fluid mixtures *(7 pages)* 054612
Rounak Bhattacharyya and Bhaskar Sen Gupta

Orientational memory of active particles in multistate non-Markovian processes *(6 pages)* 054613
Zeinab Sadjadi and M. Reza Shaebani

Hunting active Brownian particles: Learning optimal behavior *(7 pages)* 054614
Marcel Gerhard, Ashreya Jayaram, Andreas Fischer, and Thomas Speck

Translation-rotation decoupling of tracers reflects medium-range crystalline order in two-dimensional colloid glasses *(13 pages)* 054615
Dong Jae Chun, Younghoon Oh, and Bong June Sung

Theory of static magnetization of magnetopolymer composites: The second virial approximation *(8 pages)* 054616
Ekaterina A. Elfimova, Larisa Yu. Iskakova, Anna Yu. Solovyova, and Andrey Yu. Zubarev

(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 104, NUMBER 5 NOVEMBER 2021

Group synchrony, parameter mismatches, and intragroup connections *(12 pages)* 054314
Shirin Panahi and Francesco Sorrentino

Biological Physics

Extinction transition of hantavirus-infected rodents in a hostile environment *(8 pages)* 054401
Ching-Jung Chen, Yuan-Zhang Gu, and Kuo-An Wu

Dynamic and equilibrium properties of finite-size polymer models of chromosome folding *(11 pages)* 054402
Mattia Conte, Luca Fiorillo, Carlo Annunziatella, Andrea Esposito, Francesco Musella, Alex Abraham, Simona Bianco, and Andrea M. Chiariello

Thermal fluctuations assist mechanical signal propagation in coiled-coil proteins *(7 pages)* 054403
Judit Clopés, Jaeoh Shin, Marcus Jahnel, Stephan W. Grill, and Vasily Zaburdaev

Feedforward and feedback influences through distinct frequency bands between two spiking-neuron networks *(7 pages)* 054404
Leonardo Dalla Porta, Daniel M. Castro, Mauro Copelli, Pedro V. Carelli, and Fernanda S. Matias

Tuning cellular uptake of nanoparticles via ligand density: Contribution of configurational entropy *(9 pages)* 054405
Yudie Zhang, Long Li, and Jizeng Wang

Dynamic response on a nanometer scale of binary phospholipid-cholesterol vesicles: Low-frequency Raman scattering insight *(9 pages)* 054406
N. V. Surovtsev and S. V. Adichtchev

Synaptic changes modulate spontaneous transitions between tonic and bursting neural activities in coupled Hindmarsh-Rose neurons *(9 pages)* 054407
Jian-Fang Zhou, En-Hua Jiang, Bang-Lin Xu, Kesheng Xu, Changsong Zhou, and Wu-Jie Yuan

Lethal DNA damage caused by ion-induced shock waves in cells *(22 pages)* 054408
Ida Friis, Alexey V. Verkhovtsev, Ilia A. Solov'yov, and Andrey V. Solov'yov

Volume segregation programming in a nematode's early embryogenesis *(5 pages)* 054409
Guoye Guan, Ming-Kin Wong, Zhongying Zhao, Lei-Han Tang, and Chao Tang

Multiphase field models for collective cell migration *(14 pages)* 054410
D. Wenzel and A. Voigt

Polymers

Critical and geometric properties of magnetic polymers across the globule-coil transition *(7 pages)* 054501
Kamilla Faizullina, Ilya Pchelintsev, and Evgeni Burovski

Crowding-induced polymer trapping in a channel *(14 pages)* 054502
Jialu Chen, Liang Sun, Simin Wang, Fujia Tian, Haoqi Zhu, Ruiqin Zhang, and Liang Dai

Computer simulations of melts of ring polymers with nonconserved topology: A dynamic Monte Carlo lattice model *(14 pages)* 054503
Mattia Alberto Ubertini and Angelo Rosa

Flow-regulated nucleation protrusion theory for collapsed polymers *(7 pages)* 054504
Sagar Kania, Alparslan Oztekin, Xuanhong Cheng, X. Frank Zhang, and Edmund Webb, III

(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 104, NUMBER 5** **NOVEMBER 2021**

Testing for nonlinearity in nonstationary time series: A network-based surrogate data test *(11 pages)* 054217
M. C. Mallika, S. Suriya Prabhaa, K. Asokan, K. S. Anil Kumar, T. R. Ramamohan, and K. Satheesh Kumar

Transient growth and dissipative exceptional points *(10 pages)* 054218
K. G. Makris

PART B

Networks and Complex Systems

Analytical approach to the generalized friendship paradox in networks with correlated attributes *(10 pages)* 054301
Hang-Hyun Jo, Eun Lee, and Young-Ho Eom

Local topological moves determine global diffusion properties of hyperbolic higher-order networks *(14 pages)* . . . 054302
Ana P. Millán, Reza Ghorbanchian, Nicolò Defenu, Federico Battiston, and Ginestra Bianconi

From random point processes to hierarchical cavity master equations for stochastic dynamics of disordered systems in random graphs: Ising models and epidemics *(27 pages)* 054303
D. Machado and R. Mulet

Relationships among generalized positive feedback loops determine possible community outcomes in plant-pollinator interaction networks *(23 pages)* 054304
Fatemeh Sadat Fatemi Nasrollahi, Jorge Gómez Tejeda Zañudo, Colin Campbell, and Réka Albert

Generating functions for message passing on weighted networks: Directed bond percolation and susceptible, infected, recovered epidemics *(12 pages)* 054305
Christoph Widder and Tanja Schilling

Approximating nonbacktracking centrality and localization phenomena in large networks *(9 pages)* 054306
G. Timár, R. A. da Costa, S. N. Dorogovtsev, and J. F. F. Mendes

How a minority can win: Unrepresentative outcomes in a simple model of voter turnout *(8 pages)* 054307
Ekaterina Landgren, Jonas L. Juul, and Steven H. Strogatz

Evolution of honesty in higher-order social networks *(11 pages)* 054308
Aanjaneya Kumar, Sandeep Chowdhary, Valerio Capraro, and Matjaž Perc

Comodularity and detection of co-communities *(22 pages)* 054309
Thomas E. Bartlett

Epidemics with asymptomatic transmission: Subcritical phase from recursive contact tracing *(9 pages)* 054310
Lorenz Baumgarten and Stefan Bornholdt

Evaluation and extension of the radiation model for internal migration *(9 pages)* 054311
Lucas Kluge and Jacob Schewe

Training of sparse and dense deep neural networks: Fewer parameters, same performance *(8 pages)* 054312
Lorenzo Chicchi, Lorenzo Giambagli, Lorenzo Buffoni, Timoteo Carletti, Marco Ciavarella, and Duccio Fanelli

Optimized two-dimensional networks with edge-crossing cost: Frustrated antiferromagnetic spin system *(15 pages)* 054313
An-Liang Cheng (鄭安良) and Pik-Yin Lai (黎璧賢)

(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 104, NUMBER 5 NOVEMBER 2021

Nonlinear Dynamics and Chaos

Mobility-limiting antipredator response in the rock-paper-scissors model *(6 pages)* 054201
J. Menezes and B. Moura

Two mechanisms of remote synchronization in a chain of Stuart-Landau oscillators *(6 pages)* 054202
Mohit Kumar and Michael Rosenblum

Number of solitons produced from a large initial pulse in the generalized NLS dispersive hydrodynamics theory *(6 pages)* 054203
L. F. Calazans de Brito and A. M. Kamchatnov

Nontrivial amplitude death in coupled parity-time-symmetric Liénard oscillators *(8 pages)* 054204
Uday Singh, Ankit Raina, V. K. Chandrasekar, and D. V. Senthilkumar

Incoherent localized structures and hidden coherent solitons from the gravitational instability of the Schrödinger-Poisson equation *(19 pages)* 054205
Josselin Garnier, Kilian Baudin, Adrien Fusaro, and Antonio Picozzi

Topological edge solitons and their stability in a nonlinear Su-Schrieffer-Heeger model *(7 pages)* 054206
Y.-P. Ma and H. Susanto

Effects of frequency mismatch on amplitude death in delay-coupled oscillators *(12 pages)* 054207
Shinsuke Mizukami, Keiji Konishi, Yoshiki Sugitani, Takahiro Kouda, and Naoyuki Hara

Collective dynamics of phase oscillator populations with three-body interactions *(10 pages)* 054208
Xuan Wang, Zhigang Zheng, and Can Xu

Wave manipulation using a bistable chain with reversible impurities *(12 pages)* 054209
Hiromi Yasuda, Efstathios G. Charalampidis, Prashant K. Purohit, Panayotis G. Kevrekidis, and Jordan R. Raney

Large-scale spatiotemporal patterns in a ring of nonlocally coupled oscillators with a repulsive coupling *(6 pages)* 054210
Bojun Li and Nariya Uchida

Ergodicity and Born's rule in an entangled three-qubit Bohmian system *(14 pages)* 054211
Athanasios C. Tzemos and George Contopoulos

Dynamics of a driven harmonic oscillator coupled to pairwise interacting Ising spins in random fields *(18 pages)* 054212
Paul Zech, Andreas Otto, and Günter Radons

Contrariety and inhibition enhance synchronization in a small-world network of phase oscillators *(8 pages)* 054213
Tayebe Nikfard, Yahya Hematyar Tabatabaei, and Farhad Shahbazi

Interactions of the solitons in periodic driven-dissipative systems supporting quasibound states in the continuum *(8 pages)* 054214
D. Dolinina and A. Yulin

Interplay of periodic dynamics and noise: Insights from a simple adaptive system *(9 pages)* 054215
Frederic Folz, Kurt Mehlhorn, and Giovanna Morigi

Half-skyrmions with higher topological quantum numbers in homogeneous exciton-polariton condensates *(8 pages)* 054216
Szu-Cheng Cheng, Shih-Da Jheng, and Ting-Wei Chen

(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 104, NUMBER 5** **NOVEMBER 2021**

Multifractal magnetoconductance fluctuations in mesoscopic systems *(8 pages)* 054129
N. L. Pessoa, A. L. R. Barbosa, G. L. Vasconcelos, and A. M. S. Macedo

Statistical generalization of regenerative bosonic and fermionic Stirling cycles *(13 pages)* 054130
Nikhil Gupt, Srijan Bhattacharyya, and Arnab Ghosh

Fluctuations of a swarm of Brownian bees *(7 pages)* 054131
Maor Siboni, Pavel Sasorov, and Baruch Meerson

Failure of standard density functional theory to describe the phase behavior of a fluid of hard right isosceles triangles *(11 pages)* 054132
Yuri Martínez-Ratón and Enrique Velasco

Small-sample limit of the Bennett acceptance ratio method and the variationally derived intermediates *(8 pages)* 054133
Martin Reinhardt and Helmut Grubmüller

Anomalous transport phenomenon of a charged Brownian particle under a thermal gradient and a magnetic field *(7 pages)* 054134
Hiromichi Matsuyama and Kunimasa Miyazaki

Self-repelling bipedal exploration process *(9 pages)* 054135
Hor Dashti-N, M. N. Najafi, and Hyunggyu Park

Entropy-driven phases at high coverage adsorption of straight rigid rods on two-dimensional square lattices *(10 pages)* 054136
P. M. Pasinetti, A. J. Ramirez-Pastor, E. E. Vogel, and G. Saravia

Heat rectification by two qubits coupled with Dzyaloshinskii-Moriya interaction *(10 pages)* 054137
Vipul Upadhyay, M. Tahir Naseem, Rahul Marathe, and Özgür E. Müstecaplıoğlu

Energy exponents of avalanches and Hausdorff dimensions of collapse patterns *(7 pages)* 054138
Blai Casals and Ekhard K. H. Salje

Asymptotic expansion of the solution of the master equation and its application to the speed limit *(9 pages)* 054139
Satoshi Nakajima and Yasuhiro Utsumi

Space-time fractional porous media equation: Application on modeling of S&P500 price return *(17 pages)* 054140
Fatemeh Gharari, Karina Arias-Calluari, Fernando Alonso-Marroquin, and Morteza N. Najafi

Thermalized buckling of isotropically compressed thin sheets *(28 pages)* 054141
Suraj Shankar and David R. Nelson

Structural properties of additive binary hard-sphere mixtures. III. Direct correlation functions *(10 pages)* 054142
Sławomir Pieprzyk, Santos B. Yuste, Andrés Santos, Mariano López de Haro, and Arkadiusz C. Brańka

Sample size effects for Lévy flight of photons in atomic vapors *(6 pages)* 054143
A. S. M. Macedo, J. P. Lopez, and T. Passerat de Silans

Disordered beta thinned ensemble with applications *(15 pages)* 054144
Rongrong Xie, Shengfeng Deng, Weibing Deng, and Mauricio P. Pato

Nontrivial damping of quantum many-body dynamics *(9 pages)* 054145
Tjark Heitmann, Jonas Richter, Jochen Gemmer, and Robin Steinigeweg

(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 104, NUMBER 5** **NOVEMBER 2021**

Functionals of fractional Brownian motion and the three arcsine laws *(47 pages)* 054112
Tridib Sadhu and Kay Jörg Wiese

Origin of dispersionless transport in spite of thermal noise *(5 pages)* 054113
Amir Kaffashnia and Mykhaylo Evstigneev

Prime numbers and random walks in a square grid *(7 pages)* 054114
Alberto Fraile, Osame Kinouchi, Prashant Dwivedi, Roberto Martínez, Theophanes E. Raptis, and Daniel Fernández

Origin of loose bound of the thermodynamic uncertainty relation in a dissipative two-level quantum system *(10 pages)* 054115
Davinder Singh and Changbong Hyeon

Effects of bidirectional phenotype switching on signal noise in a bacterial community *(9 pages)* 054116
Bin-qian Zhou, Yi-fan Zhou, Charles Omotomide Apata, Long Jiang, and Qi-ming Pei

Bounds on charging power of open quantum batteries *(11 pages)* 054117
Shadab Zakavati, Fatemeh T. Tabesh, and Shahriar Salimi

Thermodynamic performance of a periodically driven harmonic oscillator correlated with the baths *(7 pages)* 054118
Tianqi Chen and Dario Poletti

Kapitza resistance at a domain boundary in linear and nonlinear chains *(13 pages)* 054119
Jithu Paul and O. V. Gendelman

Orbital diamagnetism of two-dimensional quantum systems in a dissipative environment: Non-Markovian effect and application to graphene *(13 pages)* 054120
E. Kh. Alpomishev, G. G. Adamian, and N. V. Antonenko

Free-parafermionic $Z(N)$ and free-fermionic XY quantum chains *(8 pages)* 054121
Francisco C. Alcaraz and Rodrigo A. Pimenta

Thermal rectification in the one-dimensional nonlinearly graded rotor lattice robust in the thermodynamical limit *(6 pages)* 054122
Zhengang Lu and Jiao Wang

Integrable spin chains and cellular automata with medium-range interaction *(30 pages)* 054123
Tamás Gombor and Balázs Pozsgay

Gaussian process and Lévy walk under stochastic noninstantaneous resetting and stochastic rest *(15 pages)* 054124
Tian Zhou, Pengbo Xu, and Weihua Deng

Observing symmetry-broken optimal paths of the stationary Kardar-Parisi-Zhang interface via a large-deviation sampling of directed polymers in random media *(10 pages)* 054125
Alexander K. Hartmann, Baruch Meerson, and Pavel Sasorov

Generalized hydrodynamics of the Lennard-Jones liquid in view of hidden scale invariance *(18 pages)* 054126
Solvej Knudsen, B. D. Todd, Jeppe C. Dyre, and J. S. Hansen

Measurement-based quantum heat engine in a multilevel system *(11 pages)* 054128
Maron F. Anka, Thiago R. de Oliveira, and Daniel Jonathan

(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 104, NUMBER 5 NOVEMBER 2021

Fluid Dynamics

Architecture of a self-fragmenting droplets cascade *(5 pages)* L053101
Gautier Verhille, Chihiro Inoue, and Emmanuel Villermaux

Nonlinear turbulent dynamo induced by fluctuations of the Lorentz force *(5 pages)* L053102
Krzysztof A. Mizerski

Plasma Physics

Bright synchrotron radiation from relativistic self-trapping of a short laser pulse in near-critical density plasma *(6 pages)* L053201
M. G. Lobok, I. A. Andriyash, O. E. Vais, V. Malka, and V. Yu. Bychenkov

ARTICLES

Statistical Physics

Asymmetric temperature equilibration with heat flow from cold to hot in a quantum thermodynamic system *(12 pages)* 054101
Phillip C. Lotshaw and Michael E. Kellman

Diffusion spreadability as a probe of the microstructure of complex media across length scales *(17 pages)* 054102
Salvatore Torquato

Phase-ordering kinetics in the Allen-Cahn (Model A) class: Universal aspects elucidated by electrically induced transition in liquid crystals *(18 pages)* 054103
Renan A. L. Almeida and Kazumasa A. Takeuchi

Confinement effects on the random sequential adsorption packings of elongated particles in a slit *(9 pages)* 054104
Nikolai I. Lebovka, Mykhailo O. Tatochenko, Nikolai V. Vygornitskii, and Yuri Yu. Tarasevich

Dynamical obstruction to localization in a disordered spin chain *(11 pages)* 054105
Dries Sels and Anatoli Polkovnikov

Universal dynamical scaling laws in three-state quantum walks *(6 pages)* 054106
P. R. N. Falcão, A. R. C. Buarque, W. S. Dias, G. M. A. Almeida, and M. L. Lyra

Dependence of integrated, instantaneous, and fluctuating entropy production on the initial state in quantum and classical processes *(31 pages)* 054107
Artemy Kolchinsky and David H. Wolpert

Heat transport in long-ranged Fermi-Pasta-Ulam-Tsingou-type models *(10 pages)* 054108
Debarshee Bagchi

Kinetic derivation of Cahn-Hilliard fluid models *(42 pages)* 054109
Vincent Giovangigli

Fractional integral representation in statistical thermodynamics of confined systems *(18 pages)* 054110
Altug Sisman and Jonas Fransson

Eikonal formulation of large dynamical random matrix models *(12 pages)* 054111
Jacek Grela, Maciej A. Nowak, and Wojciech Tarnowski

(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 104, NUMBER 5
PARTS A AND B

CONTENTS

NOVEMBER 2021

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages L052101–054218, and Part B pages 054301–059901(E).

PART A

LETTERS

Statistical Physics

Power-law and log-normal avalanche size statistics in random growth processes *(5 pages)* L052101
Stefano Polizzi, Francisco-José Pérez-Reche, Alain Arneodo, and Françoise Argoul

Universal form of thermodynamic uncertainty relation for Langevin dynamics *(5 pages)* L052102
Jae Sung Lee, Jong-Min Park, and Hyunggyu Park

First detection of threshold crossing events under intermittent sensing *(7 pages)* L052103
Aanjaneya Kumar, Aniket Zodage, and M. S. Santhanam

Porter-Thomas fluctuations in complex quantum systems *(5 pages)* L052104
K. Hagino and G. F. Bertsch

Nonlinear Dynamics and Chaos

Bumps, chimera states, and Turing patterns in systems of coupled active rotators *(5 pages)* L052201
Igor Franović, Oleh E. Omel'chenko, and Matthias Wolfrum

Weighted Bures length uncovers quantum state sensitivity *(4 pages)* L052202
Paweł Kurzyński

Traveling pulses in type-I excitable media *(5 pages)* L052203
Andreu Arinyo-i-Prats, Pablo Moreno-Spiegelberg, Manuel A. Matias, and Damià Gomila

Biological Physics

Disorder in cellular packing can alter proliferation dynamics to regulate growth *(6 pages)* L052401
Chandrashekar Kuyyamudi, Shakti N. Menon, Fernando Casares, and Sitabhra Sinha

Colloids, Complex Fluids, and Active Matter

Grain splitting is a mechanism for grain coarsening in colloidal polycrystals *(6 pages)* L052601
Anna R. Barth, Maya H. Martinez, Cora E. Payne, Chris G. Couto, Izabela J. Quintas, Inq Soncharoen, Nina M. Brown, Eli J. Weissler, and Sharon J. Gerbode

Copyright 2021 by American Physical Society

(Continued)

2470-0045(202111)104:5:B;1-4

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).