PHYSICAL REVIEW E **THIRD SERIES, VOLUME 95, NUMBER 3** **MARCH 2017**

Comparative statistics of selected subgrid-scale models in large-eddy simulations of decaying, supersonic magnetohydrodynamic turbulence *(12 pages)* 033206
Philipp Grete, Dimitar G. Vlaykov, Wolfram Schmidt, and Dominik R. G. Schleicher

Nonlinear Monte Carlo model of superdiffusive shock acceleration with magnetic field amplification *(12 pages)* 033207
Andrei M. Bykov, Donald C. Ellison, and Sergei M. Osipov

Ultrafast probing of magnetic field growth inside a laser-driven solenoid *(6 pages)* 033208
C. Goyon, B. B. Pollock, D. P. Turnbull, A. Hazi, L. Divol, W. A. Farmer, D. Haberberger, J. Javedani, A. J. Johnson, A. Kemp, M. C. Levy, B. Grant Logan, D. A. Mariscal, O. L. Landen, S. Patankar, J. S. Ross, A. M. Rubenchik, G. F. Swadling, G. J. Williams, S. Fujioka, K. F. F. Law, and J. D. Moody

Computational Physics

General velocity, pressure, and initial condition for two-dimensional and three-dimensional lattice Boltzmann simulations *(15 pages)* 033301
Omid Reza Mohammadipour, Hamid Niazmand, and Sauro Succi

Numerical linked cluster expansions for quantum quenches in one-dimensional lattices *(12 pages)* 033302
Krishnanand Mallayya and Marcos Rigol

Theory of linear sweep voltammetry with diffuse charge: Unsupported electrolytes, thin films, and leaky membranes *(20 pages)* 033303
David Yan, Martin Z. Bazant, P. M. Biesheuvel, Mary C. Pugh, and Francis P. Dawson

Effectively explore metastable states of proteins by adaptive nonequilibrium driving simulations *(10 pages)* 033304
Biao Wan, Shun Xu, and Xin Zhou

Decorrelation correction for nanoparticle tracking analysis of dilute polydisperse suspensions in bulk flow *(13 pages)* 033305
John Hartman and Brian Kirby

Generalized three-dimensional lattice Boltzmann color-gradient method for immiscible two-phase pore-scale imbibition and drainage in porous media *(31 pages)* 033306
Sébastien Leclaire, Andrea Parmigiani, Orestis Malaspinas, Bastien Chopard, and Jonas Latt

Spheroidal harmonic expansions for the solution of Laplace's equation for a point source near a sphere *(13 pages)* 033307
Matt R. A. Majić, Baptiste Auguié, and Eric C. Le Ru

Bias cancellation in one-determinant fixed-node diffusion Monte Carlo: Insights from fermionic occupation numbers *(7 pages)* 033308
Matúš Dubecký

Self-energy matrices for electron transport calculations within the real-space finite-difference formalism *(12 pages)* 033309
Shigeru Tsukamoto, Tomoya Ono, Kikuji Hirose, and Stefan Blügel

Multiscale structure of time series revealed by the monotony spectrum *(10 pages)* 033310
Călin Vamoş

Maxwell iteration for the lattice Boltzmann method with diffusive scaling *(6 pages)* 033311
Weifeng Zhao and Wen-An Yong

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 95, NUMBER 3** **MARCH 2017**

Scale dependence of multiplier distributions for particle concentration, enstrophy, and dissipation in the inertial range of homogeneous turbulence *(18 pages)* 033115
Thomas Hartlep, Jeffrey N. Cuzzi, and Brian Weston

Nuclear-magnetic-resonance relaxation due to the translational diffusion of fluid confined to quasi-two-dimensional pores *(16 pages)* 033116
D. A. Faux, P. J. McDonald, and N. C. Howlett

Explicit calculation of nuclear-magnetic-resonance relaxation rates in small pores to elucidate molecular-scale fluid dynamics *(16 pages)* 033117
D. A. Faux and P. J. McDonald

Asymmetric transmission of sound wave in cavitating liquids *(5 pages)* 033118
Xun Wang, Weizhong Chen, Shengde Liang, Taiyang Zhao, and Jinfu Liang

Melting of a nonequilibrium vortex crystal in a fluid film with polymers: Elastic versus fluid turbulence *(15 pages)* 033119
Anupam Gupta and Rahul Pandit

Turbulent compressible fluid: Renormalization group analysis, scaling regimes, and anomalous scaling of advected scalar fields *(24 pages)* 033120
N. V. Antonov, N. M. Gulitskiy, M. M. Kostenko, and T. Lučivjanský

Hamiltonian and Godunov structures of the Grad hierarchy *(19 pages)* 033121
Miroslav Grmela, Liu Hong, David Jou, Georgy Lebon, and Michal Pavelka

Toroidal-droplet instabilities in the presence of charge *(5 pages)* 033122
Alexandros A. Fragkopoulos and Alberto Fernández-Nieves

Role of thermal disequilibrium on natural convection in porous media: Insights from pore-scale study *(12 pages)* 033123
Hamid Karani and Christian Huber

Streamwise localization of traveling wave solutions in channel flow *(5 pages)* 033124
Joshua Barnett, Daniel R. Gurevich, and Roman O. Grigoriev

Plasma Physics

Influence of atomic kinetics in the simulation of plasma microscopic properties and thermal instabilities for radiative bow shock experiments *(18 pages)* 033201
G. Espinosa, R. Rodríguez, J. M. Gil, F. Suzuki-Vidal, S. V. Lebedev, A. Ciardi, J. G. Rubiano, and P. Martel

Sustained turbulence and magnetic energy in nonrotating shear flows *(6 pages)* 033202
Farrukh Nauman and Eric G. Blackman

Density-functional calculations of transport properties in the nondegenerate limit and the role of electron-electron scattering *(10 pages)* 033203
Michael P. Desjarlais, Christian R. Scullard, Lorin X. Benedict, Heather D. Whitley, and Ronald Redmer

Nonlinear effects in the bounded dust-vortex flow in plasma *(9 pages)* 033204
Modhuchandra Laishram, Devendra Sharma, Prabal K. Chattopdhyay, and Predhiman K. Kaw

Self-adjustment and disintegration threshold of Langmuir solitons in inhomogeneous plasmas *(8 pages)* 033205
Y. A. Chen, Y. Nishimura, Y. Nishida, and C. Z. Cheng

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Dense crystalline packings of ellipsoids *(9 pages)* 033003
Weiwei Jin, Yang Jiao, Lufeng Liu, Ye Yuan, and Shuixiang Li

Yielding transitions and grain-size effects in dislocation theory *(6 pages)* 033004
J. S. Langer

Shear transformation distribution and activation in glasses at the atomic scale *(10 pages)* 033005
F. Boioli, T. Albaret, and D. Rodney

Fluid Dynamics

Thermophoretic force on nanocylinders in the free molecule regime *(11 pages)* 033101
Jun Wang, Shuang Luo, and Guodong Xia

Background scalar-level anisotropy caused by low-wave-number truncation in turbulent flows *(7 pages)* 033102
L. Fang

Passive scalars: Mixing, diffusion, and intermittency in helical and nonhelical rotating turbulence *(15 pages)* 033103
P. Rodriguez Imazio and P. D. Mininni

Capillary and geometrically driven fingering instability in nonflat Hele-Shaw cells *(10 pages)* 033104
Rodolfo Brandão and José A. Miranda

Traction reveals mechanisms of wall effects for microswimmers near boundaries *(12 pages)* 033105
Xinhui Shen, Marcos, and Henry C. Fu

Slip and barodiffusion phenomena in slow flows of a gas mixture *(20 pages)* 033106
V. M. Zhdanov

Reorientations of the large-scale flow in turbulent convection in a cube *(10 pages)* 033107
N. Foroozani, J. J. Niemela, V. Armenio, and K. R. Sreenivasan

Effects of surface roughness on shear viscosity *(7 pages)* 033108
Michail Papanikolaou, Michael Frank, and Dimitris Drikakis

Footprint geometry and sessile drop resonance *(10 pages)* 033109
Chun-Ti Chang, Susan Daniel, and Paul H. Steen

Migration of a droplet in a cylindrical tube in the creeping flow regime *(11 pages)* 033110
Binita Nath, Gautam Biswas, Amaresh Dalal, and Kirti Chandra Sahu

Nonspherical liquid droplet falling in air *(8 pages)* 033111
Meenu Agrawal, A. R. Premlata, Manoj Kumar Tripathi, Badarinath Karri, and Kirti Chandra Sahu

Influence of orientation on the evolution of small perturbations in compressible shear layers with inflection points *(11 pages)* 033112
Mona Karimi and Sharath S. Girimaji

Laplacian networks: Growth, local symmetry, and shape optimization *(12 pages)* 033113
O. Devauchelle, P. Szymczak, M. Pecelerowicz, Y. Cohen, H. J. Seybold, and D. H. Rothman

Sintering of polydisperse viscous droplets *(8 pages)* 033114
Fabian B. Wadsworth, Jérémie Vasseur, Edward W. Llewellin, and Donald B. Dingwell

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Tricritical Casimir forces and order parameter profiles in wetting films of ^{3}He-^{4}He mixtures *(20 pages)* 032802
N. Farahmand Bafi, A. Maciołek, and S. Dietrich

Two mechanisms forming a comblike step pattern induced by a moving linear adatom source *(7 pages)* 032803
Masahide Sato, Hitoshi Miura, and Makio Uwaha

Statistical mechanics of the triple contact line *(12 pages)* 032804
Michel Y. Louge

Granular Materials

Drag law for an intruder in granular sediments *(7 pages)* 032901
Andreea Panaitescu, Xavier Clotet, and Arshad Kudrolli

Scaling of slip avalanches in sheared amorphous materials based on large-scale atomistic simulations *(12 pages)* 032902
Dansong Zhang, Karin A. Dahmen, and Martin Ostoja-Starzewski

Fluctuations in Hertz chains at equilibrium *(7 pages)* 032903
Michelle Przedborski, Surajit Sen, and Thad A. Harroun

Effect of interstitial fluid on the fraction of flow microstates that precede clogging in granular hoppers *(6 pages)* 032904
Juha Koivisto and Douglas J. Durian

Fundamental structural characteristics of planar granular assemblies: Self-organization and scaling away friction and initial state *(12 pages)* 032905
Takashi Matsushima and Raphael Blumenfeld

Collisional model of energy dissipation in three-dimensional granular impact *(8 pages)* 032906
Cacey Stevens Bester and Robert P. Behringer

Numerical study of one-dimensional compression of granular materials. I. Stress-strain behavior, microstructure, and irreversibility *(21 pages)* 032907
Mohamed Hassan Khalili, Jean-Noël Roux, Jean-Michel Pereira, Sébastien Brisard, and Michel Bornert

Numerical study of one-dimensional compression of granular materials. II. Elastic moduli, stresses, and microstructure *(17 pages)* 032908
Mohamed Hassan Khalili, Jean-Noël Roux, Jean-Michel Pereira, Sébastien Brisard, and Michel Bornert

Velocity distribution of a driven inelastic one-component Maxwell gas *(8 pages)* 032909
V. V. Prasad, Dibyendu Das, Sanjib Sabhapandit, and R. Rajesh

Experimental investigation of the effect of thresholding on temporal statistics of avalanches *(7 pages)* 032910
M. A. Lebyodkin, I. V. Shashkov, T. A. Lebedkina, and V. S. Gornakov

Solid Mechanics

Structure-properties relation for random networks of fibers with noncircular cross section *(5 pages)* 033001
S. Deogekar and R. C. Picu

Acousto-optic effect in random media *(13 pages)* 033002
Jeremy G. Hoskins and John C. Schotland

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Dynamic heterogeneities and non-Gaussian behavior in two-dimensional randomly confined colloidal fluids *(14 pages)* 032602
Simon K. Schnyder, Thomas O. E. Skinner, Alice L. Thorneywork, Dirk G. A. L. Aarts, Jürgen Horbach, and Roel P. A. Dullens

Effect of the salt-induced micellar microstructure on the nonlinear shear flow behavior of ionic cetylpyridinium chloride surfactant solutions *(11 pages)* 032603
D. Gaudino, R. Pasquino, H. Kriegs, N. Szekely, W. Pyckhout-Hintzen, M. P. Lettinga, and N. Grizzuti

Onset of anomalous diffusion in colloids confined to quasimonolayers *(12 pages)* 032604
J. Bleibel, Alvaro Domínguez, and M. Oettel

Ellipsoidal Brownian self-driven particles in a magnetic field *(6 pages)* 032605
Wai-Tong (Louis) Fan, On Shun Pak, and Mario Sandoval

Dynamic phases of active matter systems with quenched disorder *(8 pages)* 032606
Cs. Sándor, A. Libál, C. Reichhardt, and C. J. Olson Reichhardt

Quantifying disorder in colloidal films spin-coated onto patterned substrates *(9 pages)* 032607
Raheema Aslam, Sergio Ardanza-Trevijano, Kristin M. Poduska, Anand Yethiraj, and Wenceslao González-Viñas

Averaged model for probabilistic coalescence avalanches in two-dimensional emulsions: Insights into uncertainty propagation *(9 pages)* 032608
Danny Raj M. and R. Rengaswamy

Sedimentation equilibrium of magnetic nanoparticles with strong dipole-dipole interactions *(10 pages)* 032609
Andrey A. Kuznetsov and Alexander F. Pshenichnikov

Liquid Crystals

Phase behavior and characterization of heptamethyltrisiloxane-based de Vries smectic liquid crystal by electro-optics, x rays, and dielectric spectroscopy *(11 pages)* 032701
S. P. Sreenilayam, D. M. Agra-Kooijman, V. P. Panov, V. Swaminathan, J. K. Vij, Yu. P. Panarin, A. Kocot, A. Panov, D. Rodriguez-Lojo, P. J. Stevenson, Michael R. Fisch, and Satyendra Kumar

Understanding the origin of liquid crystal ordering of ultrashort double-stranded DNA *(6 pages)* 032702
Suman Saurabh, Yves Lansac, Yun Hee Jang, Matthew A. Glaser, Noel A. Clark, and Prabal K. Maiti

Dispersion relation for electromagnetic propagation in stochastic dielectric and magnetic helical photonic crystals *(17 pages)* 032703
Carlos G. Avendaño and Arturo Reyes

Elastic anisotropy effects on the electrical responses of a thin sample of nematic liquid crystal *(6 pages)* 032704
O. A. Gomes, C. A. R. Yednak, R. R. Ribeiro de Almeida, R. T. Teixeira-Souza, and L. R. Evangelista

Modulation of unpolarized light in planar-aligned subwavelength-pitch deformed-helix ferroelectric liquid crystals *(7 pages)* 032705
Vladimir V. Kesaev, Alexei D. Kiselev, and Evgeny P. Pozhidaev

Films and Interfaces

Phase-field model of oxidation: Equilibrium *(16 pages)* 032801
Q. C. Sherman and P. W. Voorhees

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Reversals and collisions optimize protein exchange in bacterial swarms *(10 pages)* 032408
Aboutaleb Amiri, Cameron Harvey, Amy Buchmann, Scott Christley, Joshua D. Shrout, Igor S. Aranson, and Mark Alber

Characterization of phase transitions in a model ecosystem of sessile species *(5 pages)* 032409
Florian Uekermann, Joachim Mathiesen, and Namiko Mitarai

Model of polar auxin transport coupled to mechanical forces retrieves robust morphogenesis along the *Arabidopsis* root *(11 pages)* 032410
J. Roberto Romero-Arias, Valeria Hernández-Hernández, Mariana Benítez, Elena R. Alvarez-Buylla, and Rafael A. Barrio

Relevant parameters in models of cell division control *(14 pages)* 032411
Jacopo Grilli, Matteo Osella, Andrew S. Kennard, and Marco Cosentino Lagomarsino

Normal vibrational modes of phospholipid bilayers observed by low-frequency Raman scattering *(5 pages)* 032412
N. V. Surovtsev, A. A. Dmitriev, and S. A. Dzuba

Biodiversity, extinctions, and evolution of ecosystems with shared resources *(10 pages)* 032413
Vladimir Kozlov, Sergey Vakulenko, and Uno Wennergren

Earliest effects of sudden occlusions on pressure profiles in selected locations of the human systemic arterial system *(13 pages)* 032414
Marcin Majka, Giacomo Gadda, Angelo Taibi, Mirosław Gałązka, and Piotr Zieliński

Cell-alignment patterns in the collective migration of cells with polarized adhesion *(13 pages)* 032415
Katsuyoshi Matsushita

Variable species densities are induced by volume exclusion interactions upon domain growth *(21 pages)* 032416
Robert J. H. Ross, C. A. Yates, and R. E. Baker

Anomalous diffusion in viscoelastic media with active force dipoles *(14 pages)* 032417
Kento Yasuda, Ryuichi Okamoto, and Shigeyuki Komura

Backward-stochastic-differential-equation approach to modeling of gene expression *(9 pages)* 032418
Evelina Shamarova, Roman Chertovskih, Alexandre F. Ramos, and Paulo Aguiar

Polymers

Effects of disorder and chain stiffening on the elasticity of flexible polymer networks *(11 pages)* 032501
Christiane Caroli and Anaël Lemaître

Subphase transitions in first-order aggregation processes *(8 pages)* 032502
Tomas Koci and Michael Bachmann

Effect of single-particle magnetostriction on the shear modulus of compliant magnetoactive elastomers *(12 pages)* 032503
Viktor M. Kalita, Andrei A. Snarskii, Mikhail Shamonin, and Denis Zorinets

Identifying polymer states by machine learning *(6 pages)* 032504
Qianshi Wei, Roger G. Melko, and Jeff Z. Y. Chen

Colloids, Complex Fluids, and Active Matter

Analyses of kinetic glass transition in short-range attractive colloids based on time-convolutionless mode-coupling theory *(6 pages)* 032601
Takayuki Narumi and Michio Tokuyama

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Generic patterns in the evolution of urban water networks: Evidence from a large Asian city *(12 pages)* 032312
Elisabeth Krueger, Christopher Klinkhamer, Christian Urich, Xianyuan Zhan, and P. Suresh C. Rao

Nonlinear signaling on biological networks: The role of stochasticity and spectral clustering *(15 pages)* 032313
Gonzalo Hernandez-Hernandez, Jesse Myers, Enrique Alvarez-Lacalle, and Yohannes Shiferaw

Delineating parameter unidentifiabilities in complex models *(17 pages)* 032314
Dhruva V. Raman, James Anderson, and Antonis Papachristodoulou

Universality classes of fluctuation dynamics in hierarchical complex systems *(6 pages)* 032315
A. M. S. Macêdo, Iván R. Roa González, D. S. P. Salazar, and G. L. Vasconcelos

Fluctuations around mean walking behaviors in diluted pedestrian flows *(9 pages)* 032316
Alessandro Corbetta, Chung-min Lee, Roberto Benzi, Adrian Muntean, and Federico Toschi

Multiple-node basin stability in complex dynamical networks *(9 pages)* 032317
Chiranjit Mitra, Anshul Choudhary, Sudeshna Sinha, Jürgen Kurths, and Reik V. Donner

Deterministic extinction by mixing in cyclically competing species *(6 pages)* 032318
Cilie W. Feldager, Namiko Mitarai, and Hiroki Ohta

Transfer entropy in continuous time, with applications to jump and neural spiking processes *(21 pages)* 032319
Richard E. Spinney, Mikhail Prokopenko, and Joseph T. Lizier

Traffic gridlock on a honeycomb city *(5 pages)* 032320
L. E. Olmos and J. D. Muñoz

PART B

Biological Physics

Triangles bridge the scales: Quantifying cellular contributions to tissue deformation *(24 pages)* 032401
Matthias Merkel, Raphaël Etournay, Marko Popović, Guillaume Salbreux, Suzanne Eaton, and Frank Jülicher

Mean-cluster approach indicates cell sorting time scales are determined by collective dynamics *(8 pages)* 032402
Carine P. Beatrici, Rita M. C. de Almeida, and Leonardo G. Brunnet

Nonergodic subdiffusion from transient interactions with heterogeneous partners *(7 pages)* 032403
C. Charalambous, G. Muñoz-Gil, A. Celi, M. F. Garcia-Parajo, M. Lewenstein, C. Manzo, and M. A. García-March

Motility of *Escherichia coli* in a quasi-two-dimensional porous medium *(9 pages)* 032404
Juan Eduardo Sosa-Hernández, Moisés Santillán, and Jesús Santana-Solano

Scattering-enhanced absorption and interference produce a golden wing color of the burnished brass moth, *Diachrysia chrysitis (10 pages)* 032405
Dejan Pantelić, Svetlana Savić-Šević, Dejan V. Stojanović, Srećko Ćurčić, Aleksandar J. Krmpot, Mihailo Rabasović, Danica Pavlović, Vladimir Lazović, and Vojislav Milošević

Multistage modeling of protein dynamics with monomeric Myc oncoprotein as an example *(11 pages)* 032406
Jiaojiao Liu, Jin Dai, Jianfeng He, Antti J. Niemi, and Nevena Ilieva

Noise-induced symmetry breaking far from equilibrium and the emergence of biological homochirality *(18 pages)* 032407
Farshid Jafarpour, Tommaso Biancalani, and Nigel Goldenfeld

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Development of kinks in car-following models *(10 pages)* 032221
Douglas A. Kurtze

Bubblelike structures generated by activation of internal shape modes in two-dimensional sine-Gordon line solitons *(9 pages)* 032222
Mónica A. García-Ñustes, Juan F. Marín, and Jorge A. González

From solitons to rogue waves in nonlinear left-handed metamaterials *(9 pages)* 032223
Yannan Shen, P. G. Kevrekidis, G. P. Veldes, D. J. Frantzeskakis, D. DiMarzio, X. Lan, and V. Radisic

Chimera patterns in two-dimensional networks of coupled neurons *(13 pages)* 032224
Alexander Schmidt, Theodoros Kasimatis, Johanne Hizanidis, Astero Provata, and Philipp Hövel

Collective phase reduction of globally coupled noisy dynamical elements *(19 pages)* 032225
Yoji Kawamura

Cross-symmetric dipolar-matter-wave solitons in double-well chains *(11 pages)* 032226
Zhiwei Fan, Yuhan Shi, Yan Liu, Wei Pang, Yongyao Li, and Boris A. Malomed

Networks and Complex Systems

Percolation on networks with weak and heterogeneous dependency *(7 pages)* 032301
Ling-Wei Kong, Ming Li, Run-Ran Liu, and Bing-Hong Wang

Dissociation between two subgroups of the suprachiasmatic nucleus affected by the number of damped oscillated neurons *(6 pages)* 032302
Changgui Gu, Huijie Yang, and Jos HT Rohling

Universal data-based method for reconstructing complex networks with binary-state dynamics *(12 pages)* 032303
Jingwen Li, Zhesi Shen, Wen-Xu Wang, Celso Grebogi, and Ying-Cheng Lai

Effect of node attributes on the temporal dynamics of network structure *(20 pages)* 032304
Naghmeh Momeni and Babak Fotouhi

Griffiths phase on hierarchical modular networks with small-world edges *(9 pages)* 032306
Shanshan Li

Role-separating ordering in social dilemmas controlled by topological frustration *(9 pages)* 032307
Marco A. Amaral, Matjaž Perc, Lucas Wardil, Attila Szolnoki, Elton J. da Silva Júnior, and Jafferson K. L. da Silva

Optimizing interconnections to maximize the spectral radius of interdependent networks *(15 pages)* 032308
Huashan Chen, Xiuyan Zhao, Feng Liu, Shouhuai Xu, and Wenlian Lu

Latent geometry of bipartite networks *(20 pages)* 032309
Maksim Kitsak, Fragkiskos Papadopoulos, and Dmitri Krioukov

Current redistribution in resistor networks: Fat-tail statistics in regular and small-world networks *(12 pages)* 032310
Jörg Lehmann and Jakob Bernasconi

Stochastic dynamics and the predictability of big hits in online videos *(7 pages)* 032311
José M. Miotto, Holger Kantz, and Eduardo G. Altmann

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Emergence of chimeras through induced multistability *(8 pages)* 032203
Sangeeta Rani Ujjwal, Nirmal Punetha, Awadhesh Prasad, and Ramakrishna Ramaswamy

Pinning of scroll waves to flat and highly branched unexcitable heterogeneities *(7 pages)* 032204
Dhriti Mahanta, Sumana Dutta, and Oliver Steinbock

Global relativistic effects in chaotic scattering *(8 pages)* 032205
Juan D. Bernal, Jesús M. Seoane, and Miguel A. F. Sanjuán

Gross-Pitaevski map as a chaotic dynamical system *(7 pages)* 032206
Italo Guarneri

Synchronization of oscillators through time-shifted common inputs *(6 pages)* 032207
Ehsan Bolhasani, Yousef Azizi, Alireza Valizadeh, and Matjaž Perc

Dynamics of vortex-antivortex pairs and rarefaction pulses in liquid light *(10 pages)* 032208
David Feijoo, Angel Paredes, and Humberto Michinel

Ultraslow diffusion and weak ergodicity breaking in right triangular billiards *(7 pages)* 032209
Junxiang Huang and Hong Zhao

Traveling waves and breathers in an excitatory-inhibitory neural field *(16 pages)* 032210
Stefanos E. Folias

Enhanced processing in arrays of optimally tuned nonlinear biomimetic sensors: A coupling-mediated Ringelmann effect and its dynamical mitigation *(12 pages)* 032211
Alexander P. Nikitin, Adi R. Bulsara, and Nigel G. Stocks

Influence of disorder on generation and probability of extreme events in Salerno lattices *(9 pages)* 032212
A. Mančić, A. Maluckov, and Lj. Hadžievski

Delay-induced depinning of localized structures in a spatially inhomogeneous Swift-Hohenberg model *(10 pages)* 032213
Felix Tabbert, Christian Schelte, Mustapha Tlidi, and Svetlana V. Gurevich

Scaling laws of reflection coefficients of quantum waves at a Cantor-like potential *(5 pages)* 032214
Hidetsugu Sakaguchi and Taichi Ogawana

Globally attracting synchrony in a network of oscillators with all-to-all inhibitory pulse coupling *(8 pages)* 032215
Carmen C. Canavier and Ruben A. Tikidji-Hamburyan

Delayed collapses of Bose-Einstein condensates in relation to anti-de Sitter gravity *(8 pages)* 032216
Anxo F. Biasi, Javier Mas, and Angel Paredes

Gap solitons in Rabi lattices *(9 pages)* 032217
Zhaopin Chen and Boris A. Malomed

Simple noise-reduction method based on nonlinear forecasting *(6 pages)* 032218
James P. L. Tan

Stochastic resonance across bifurcation cascades *(8 pages)* 032219
C. Nicolis and G. Nicolis

Synchronization dynamics on the picosecond time scale in coupled Josephson junction neurons *(7 pages)* 032220
K. Segall, M. LeGro, S. Kaplan, O. Svitelskiy, S. Khadka, P. Crotty, and D. Schult

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Simple bounds on fluctuations and uncertainty relations for first-passage times of counting observables *(7 pages)* 032134
Juan P. Garrahan

Lévy flight with absorption: A model for diffusing diffusivity with long tails *(7 pages)* 032135
Rohit Jain and K. L. Sebastian

Development and regression of a large fluctuation *(13 pages)* 032136
Federico Corberi

Numerical study of continuous and discontinuous dynamical phase transitions for boundary-driven systems *(8 pages)* 032137
Ohad Shpielberg, Yaroslav Don, and Eric Akkermans

Low thermal fluctuations in a system heated out of equilibrium *(8 pages)* 032138
Mickael Geitner, Felipe Aguilar Sandoval, Eric Bertin, and Ludovic Bellon

Performance of a quantum heat engine at strong reservoir coupling *(13 pages)* 032139
David Newman, Florian Mintert, and Ahsan Nazir

Efficient approach to the free energy of crystals via Monte Carlo simulations: Application to continuous and orientation-dependent potentials *(8 pages)* 032140
G. Navascués and E. Velasco

Quantum walks: The first detected passage time problem *(22 pages)* 032141
H. Friedman, D. A. Kessler, and E. Barkai

Transition radiation at the boundary of a chiral isotropic medium *(11 pages)* 032142
Sergey N. Galyamin, Andrey V. Tyukhtin, and Anton A. Peshkov

Numerical simulations of Ising spin glasses with free boundary conditions: The role of droplet excitations and domain walls *(6 pages)* 032143
Wenlong Wang

Nonequilibrium random matrix theory: Transition probabilities *(5 pages)* 032144
Francisco Gil Pedro and Alexander Westphal

Foraging patterns in online searches *(13 pages)* 032145
Xiangwen Wang and Michel Pleimling

Thermal rectification in mass-graded next-nearest-neighbor Fermi-Pasta-Ulam lattices *(6 pages)* 032146
M. Romero-Bastida, Jorge-Orlando Miranda-Peña, and Juan M. López

Quantum Jarzynski equality of measurement-based work extraction *(11 pages)* 032147
Yohei Morikuni, Hiroyasu Tajima, and Naomichi Hatano

Nonlinear Dynamics and Chaos

Two-component dark-bright solitons in three-dimensional atomic Bose-Einstein condensates *(8 pages)* 032201
Wenlong Wang and P. G. Kevrekidis

Certain bright soliton interactions of the Sasa-Satsuma equation in a monomode optical fiber *(15 pages)* 032202
Lei Liu, Bo Tian, Han-Peng Chai, and Yu-Qiang Yuan

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Kardar-Parisi-Zhang equation with short-range correlated noise: Emergent symmetries and nonuniversal observables *(16 pages)* 032117
Steven Mathey, Elisabeth Agoritsas, Thomas Kloss, Vivien Lecomte, and Léonie Canet

Self-averaging in the random two-dimensional Ising ferromagnet *(8 pages)* 032118
Victor Dotsenko, Yurij Holovatch, Maxym Dudka, and Martin Weigel

Structure of the optimal path to a fluctuation *(7 pages)* 032119
N. Tizón-Escamilla, P. I. Hurtado, and P. L. Garrido

Density-functional theory for fluid-solid and solid-solid phase transitions *(8 pages)* 032120
Atul S. Bharadwaj and Yashwant Singh

Variational calculation of transport coefficients in diffusive lattice gases *(13 pages)* 032121
Chikashi Arita, P. L. Krapivsky, and Kirone Mallick

Fast forward to the classical adiabatic invariant *(7 pages)* 032122
Christopher Jarzynski, Sebastian Deffner, Ayoti Patra, and Yiğit Subaşı

Multifractal surrogate-data generation algorithm that preserves pointwise Hölder regularity structure, with initial applications to turbulence *(10 pages)* 032123
C. J. Keylock

Renormalization-group theory for cooling first-order phase transitions in Potts models *(7 pages)* 032124
Ning Liang and Fan Zhong

Upper bound for the average entropy production based on stochastic entropy extrema *(10 pages)* 032125
Surachate Limkumnerd

Interfacial adsorption in two-dimensional pure and random-bond Potts models *(7 pages)* 032126
Nikolaos G. Fytas, Panagiotis E. Theodorakis, and Anastasios Malakis

Derivation of matrix product states for the Heisenberg spin chain with open boundary conditions *(11 pages)* 032127
Zhongtao Mei and C. J. Bolech

Fluctuation loops in noise-driven linear dynamical systems *(9 pages)* 032128
Akhil Ghanta, John C. Neu, and Stephen Teitsworth

Facets on the convex hull of d-dimensional Brownian and Lévy motion *(5 pages)* 032129
Julien Randon-Furling and Florian Wespi

Dynamical stationarity as a result of sustained random growth *(8 pages)* 032130
Tamás S. Biró and Zoltán Néda

Renormalization group analysis for an asymmetric simple exclusion process *(7 pages)* 032131
Sutapa Mukherji

Gaussian white noise as a resource for work extraction *(12 pages)* 032132
Andreas Dechant, Adrian Baule, and Shin-ichi Sasa

Random walk in nonhomogeneous environments: A possible approach to human and animal mobility *(5 pages)* 032133
Tomasz Srokowski

(Continued)

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 95, NUMBER 3** **MARCH 2017**

ARTICLES

Statistical Physics

Minimum memory for generating rare events *(9 pages)* 032101
Cina Aghamohammadi and James P. Crutchfield

Thermal transport in the Fermi-Pasta-Ulam model with long-range interactions *(7 pages)* 032102
Debarshee Bagchi

Theory of deflagration in disordered media *(7 pages)* 032103
Mauro Schiulaz, Christopher R. Laumann, Alexander V. Balatsky, and Boris Z. Spivak

Arrays of two-state stochastic oscillators: Roles of tail and range of interactions *(9 pages)* 032104
Alexandre Rosas, Daniel Escaff, Italo'Ivo Lima Dias Pinto, and Katja Lindenberg

Compressible cell gas models for asymmetric fluid criticality *(15 pages)* 032105
Claudio A. Cerdeiriña and Gerassimos Orkoulas

Effects of spatial and temporal noise on a cubic-autocatalytic reaction-diffusion model *(10 pages)* 032106
Jean-Sébastien Gagnon, David Hochberg, and Juan Pérez-Mercader

Transition of multidiffusive states in a biased periodic potential *(6 pages)* 032107
Jia-Ming Zhang and Jing-Dong Bao

Signal optimization in urban transport: A totally asymmetric simple exclusion process with traffic lights *(8 pages)* 032108
Chikashi Arita, M. Ebrahim Foulaadvand, and Ludger Santen

Poverty index with time-varying consumption and income distributions *(11 pages)* 032109
Amit K. Chattopadhyay, T. Krishna Kumar, and Sushanta K. Mallick

Mean-squared-displacement statistical test for fractional Brownian motion *(5 pages)* 032110
Grzegorz Sikora, Krzysztof Burnecki, and Agnieszka Wyłomańska

Measurement-induced operation of two-ion quantum heat machines *(7 pages)* 032111
Suman Chand and Asoka Biswas

Scale-invariant puddles in graphene: Geometric properties of electron-hole distribution at the Dirac point *(12 pages)* 032112
M. N. Najafi and M. Ghasemi Nezhadhaghighi

Understanding quantum work in a quantum many-body system *(9 pages)* 032113
Qian Wang and H. T. Quan

Stochastic thermodynamics for Ising chain and symmetric exclusion process *(12 pages)* 032114
R. Toral, C. Van den Broeck, D. Escaff, and Katja Lindenberg

Simple unified view of branching process statistics: Random walks in balanced logarithmic potentials *(6 pages)* 032115
Serena di Santo, Pablo Villegas, Raffaella Burioni, and Miguel A. Muñoz

Direct links between dynamical, thermodynamic, and structural properties of liquids: Modeling results *(9 pages)* 032116
L. Wang, C. Yang, M. T. Dove, Yu. D. Fomin, V. V. Brazhkin, and K. Trachenko

(Continued)

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 95, NUMBER 3** **MARCH 2017**

Colloids, Complex Fluids, and Active Matter

Non-Gaussian limit fluctuations in active swimmer suspensions *(6 pages)* . . . . . 030601(R)
Takashi Kurihara, Msato Aridome, Heev Ayade, Irwin Zaid, and Daisuke Mizuno

Dramatic effect of fluid chemistry on cornstarch suspensions: Linking particle interactions to macroscopic rheology *(6 pages)* . . . . . 030602(R)
Loreto Oyarte Gálvez, Sissi de Beer, Devaraj van der Meer, and Adeline Pons

Granular Materials

Dynamics of wet granular hexagons *(5 pages)* . . . . . 030901(R)
Manuel Baur and Kai Huang

Clogging and jamming transitions in periodic obstacle arrays *(5 pages)* . . . . . 030902(R)
H. T. Nguyen, C. Reichhardt, and C. J. Olson Reichhardt

Solid Mechanics

Breakdown of nonlinear elasticity in stress-controlled thermal amorphous solids *(4 pages)* . . . . . 031001(R)
Vladimir Dailidonis, Valery Ilyin, Itamar Procaccia, and Carmel A. B. Z. Shor

Fluid Dynamics

Cavitation and spallation in liquid metal droplets produced by subpicosecond pulsed laser radiation *(6 pages)* . . . . 031101(R)
M. S. Krivokorytov, A. Yu. Vinokhodov, Yu. V. Sidelnikov, V. M. Krivtsun, V. O. Kompanets, A. A. Lash, K. N. Koshelev, and V. V. Medvedev

Plasma Physics

Measurement of the equation of state of solid-density copper heated with laser-accelerated protons *(5 pages)* . . . . 031201(R)
S. Feldman, G. Dyer, D. Kuk, and T. Ditmire

Experimental demonstration of low laser-plasma instabilities in gas-filled spherical hohlraums at laser injection angle designed for ignition target *(5 pages)* . . . . . 031202(R)
Ke Lan, Zhichao Li, Xufei Xie, Yao-Hua Chen, Chunyang Zheng, Chuanlei Zhai, Liang Hao, Dong Yang, Wen Yi Huo, Guoli Ren, Xiaoshi Peng, Tao Xu, Yulong Li, Sanwei Li, Zhiwen Yang, Liang Guo, Lifei Hou, Yonggang Liu, Huiyue Wei, Xiangming Liu, Weiyi Cha, Xiaohua Jiang, Yu Mei, Yukun Li, Keli Deng, Zheng Yuan, Xiayu Zhan, Haijun Zhang, Baibin Jiang, Wei Zhang, Xuewei Deng, Jie Liu, Kai Du, Yongkun Ding, Xiaofeng Wei, Wanguo Zheng, Xiaodong Chen, E. M. Campbell, and Xian-Tu He

How turbulence fronts induce plasma spin-up *(5 pages)* . . . . . 031203(R)
Y. Kosuga, S.-I. Itoh, P. H. Diamond, and K. Itoh

X-ray shadow imprint of hydrodynamic instabilities on the surface of inertial confinement fusion capsules by the fuel fill tube *(6 pages)* . . . . . 031204(R)
A. G. MacPhee, D. T. Casey, D. S. Clark, S. Felker, J. E. Field, S. W. Haan, B. A. Hammel, J. Kroll, O. L. Landen, D. A. Martinez, P. Michel, J. Milovich, A. Moore, A. Nikroo, N. Rice, H. F. Robey, V. A. Smalyuk, M. Stadermann, and C. R. Weber

Computational Physics

Recommender engine for continuous-time quantum Monte Carlo methods *(6 pages)* . . . . . 031301(R)
Li Huang, Yi-feng Yang, and Lei Wang

(Continued)

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 95, NUMBER 3 PARTS A AND B — *CONTENTS* — **MARCH 2017**

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 030101(R)–032320, and Part B pages 032401–033311.

PART A

RAPID COMMUNICATIONS

Statistical Physics

Mapping current fluctuations of stochastic pumps to nonequilibrium steady states *(5 pages)* . . . . . 030101(R)
Grant M. Rotskoff

Converting heat into directed transport on a tilted lattice *(6 pages)* . . . . . 030102(R)
Colin Teo, Ulf Bissbort, and Dario Poletti

Mutually avoiding paths in random media and largest eigenvalues of random matrices *(6 pages)* . . . . . 030103(R)
Andrea De Luca and Pierre Le Doussal

Rectification and one-way street for the energy current in boundary-driven asymmetric quantum spin chains *(5 pages)* . . . . . 030104(R)
Emmanuel Pereira

Decoding heat capacity features from the energy landscape *(6 pages)* . . . . . 030105(R)
David J. Wales

Generalized Edwards thermodynamics and marginal stability in a driven system with dry and viscous friction *(5 pages)* . . . . . 030106(R)
Giacomo Gradenigo and Eric Bertin

Emergence of Lévy walks in systems of interacting individuals *(6 pages)* . . . . . 030107(R)
Sergei Fedotov and Nickolay Korabel

Ultrametricity of optimal transport substates for multiple interacting paths over a square lattice network *(5 pages)* 030108(R)
Marco Cogoni, Giovanni Busonera, and Gianluigi Zanetti

Nonlinear Dynamics and Chaos

Robustness of spatial patterns in buffered reaction-diffusion systems and its reciprocity with phase plasticity *(5 pages)* . . . . . 030201(R)
Tetsuhiro S. Hatakeyama and Kunihiko Kaneko

Chimeras and clusters in networks of hyperbolic chaotic oscillators *(5 pages)* . . . . . 030202(R)
A. V. Cano and M. G. Cosenza

Copyright 2017 by American Physical Society

2470-0045(201703)95:3:B;1-A

(Continued)

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).