PHYSICAL REVIEW E **THIRD SERIES, VOLUME 95, NUMBER 5** **MAY 2017**

Computational Physics

Extended lattice Boltzmann scheme for droplet combustion *(15 pages)* 053301
Mostafa Ashna, Mohammad Hassan Rahimian, and Abbas Fakhari

Macroscopically constrained Wang-Landau method for systems with multiple order parameters and its application to drawing complex phase diagrams *(14 pages)* 053302
C. H. Chan, G. Brown, and P. A. Rikvold

Grain coarsening in two-dimensional phase-field models with an orientation field *(12 pages)* 053303
Bálint Korbuly, Tamás Pusztai, Hervé Henry, Mathis Plapp, Markus Apel, and László Gránásy

Towards a unified lattice kinetic scheme for relativistic hydrodynamics *(14 pages)* 053304
A. Gabbana, M. Mendoza, S. Succi, and R. Tripiccione

Surprising convergence of the Monte Carlo renormalization group for the three-dimensional Ising model *(6 pages)* 053305
Dorit Ron, Achi Brandt, and Robert H. Swendsen

Evaluating the morphological completeness of a training image *(11 pages)* 053306
Mingliang Gao, Qizhi Teng, Xiaohai He, Junxi Feng, and Xue Han

Implementation of dual time-stepping strategy of the gas-kinetic scheme for unsteady flow simulations *(13 pages)* 053307
Ji Li, Chengwen Zhong, Yong Wang, and Congshan Zhuo

Multidimensional Chebyshev interpolation for warm and hot dense matter *(10 pages)* 053308
Gérald Faussurier and Christophe Blancard

Numerical solution of the time-dependent Schrödinger equation for H_2^+ ion with application to high-harmonic generation and above-threshold ionization *(8 pages)* 053309
B. Fetić and D. B. Milošević

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 5** **MAY 2017**

Effect of axial electric field on the Rayleigh instability at small length scales *(11 pages)* 053115
Darshak K. Bhuptani and Sarith P. Sathian

Completeness of inertial modes of an incompressible inviscid fluid in a corotating ellipsoid *(16 pages)* 053116
George Backus and Michel Rieutord

Hydrodynamic mobility of a solid particle near a spherical elastic membrane. II. Asymmetric motion *(16 pages)* 053117
Abdallah Daddi-Moussa-Ider, Maciej Lisicki, and Stephan Gekle

Plasma Physics

Fully kinetic simulation study of ion-acoustic solitons in the presence of trapped electrons *(11 pages)* 053201
S. M. Hosseini Jenab and F. Spanier

Instabilities in bilayer complex plasmas: Wake-induced mode coupling *(8 pages)* 053202
A. V. Ivlev and R. Kompaneets

Electrostatic Debye layer formed at a plasma-liquid interface *(8 pages)* 053203
Paul Rumbach, Jean Pierre Clarke, and David B. Go

Magnetohydrodynamics of laser-produced high-energy-density plasma in a strong external magnetic field *(6 pages)* 053204
Kazuki Matsuo, Hideo Nagatomo, Zhe Zhang, Philippe Nicolai, Takayoshi Sano, Shohei Sakata, Sadaoki Kojima, Seung Ho Lee, King Fai Farley Law, Yasunobu Arikawa, Youichi Sakawa, Taichi Morita, Yasuhiro Kuramitsu, Shinsuke Fujioka, and Hiroshi Azechi

Production of high-angular-momentum electron beams in laser-plasma interactions *(8 pages)* 053205
L. B. Ju, C. T. Zhou, T. W. Huang, K. Jiang, H. Zhang, S. Z. Wu, B. Qiao, and S. C. Ruan

Two-dimensional implosion simulations with a kinetic particle code *(15 pages)* 053206
I. Sagert, W. P. Even, and T. T. Strother

Freak oscillation in a dusty plasma *(5 pages)* 053207
Heng Zhang, Yang Yang, Xue-Ren Hong, Xin Qi, Wen-Shan Duan, and Lei Yang

Measurements of ionization states in warm dense aluminum with betatron radiation *(6 pages)* 053208
M. Z. Mo, Z. Chen, S. Fourmaux, A. Saraf, S. Kerr, K. Otani, R. Masoud, J.-C. Kieffer, Y. Tsui, A. Ng, and R. Fedosejevs

Bremsstrahlung from the interaction of short laser pulses with dielectrics *(10 pages)* 053209
G. M. Petrov, J. P. Palastro, and J. Peñano

Simultaneous influence of helicity and compressibility on anomalous scaling of the magnetic field in the Kazantsev-Kraichnan model *(28 pages)* 053210
E. Jurčišinová, M. Jurčišin, and M. Menkyna

Optimization of plasma amplifiers *(6 pages)* 053211
James D. Sadler, Raoul M. G. M. Trines, Max Tabak, Dan Haberberger, Dustin H. Froula, Andrew S. Davies, Sara Bucht, Luís O. Silva, E. Paulo Alves, Frederico Fiúza, Luke Ceurvorst, Naren Ratan, Muhammad F. Kasim, Robert Bingham, and Peter A. Norreys

Kinetic simulations of ladder climbing by electron plasma waves *(7 pages)* 053212
Kentaro Hara, Ido Barth, Erez Kaminski, I. Y. Dodin, and N. J. Fisch

(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 5** **MAY 2017**

Strain tensor selection and the elastic theory of incompatible thin sheets *(16 pages)* 053003
Oz Oshri and Haim Diamant

Crack propagation through disordered materials as a depinning transition:
A critical test of the theory *(12 pages)* 053004
Laurent Ponson and Nadjime Pindra

Time-dependent breakdown of fiber networks: Uncertainty of lifetime *(10 pages)* 053005
Amanda Mattsson and Tetsu Uesaka

Fluid Dynamics

Stability of viscous film flow coating the interior of a vertical tube with a porous wall *(10 pages)* 053101
Rong Liu and Zijing Ding

Mean-Lagrangian formalism and covariance of fluid turbulence *(11 pages)* 053102
Taketo Ariki

Wave propagation reversal for wavy vortices in wide-gap counter-rotating cylindrical Couette flow *(9 pages)* 053103
S. Altmeyer and Richard M. Lueptow

Radiation dynamics of a cavitation bubble in a liquid-filled cavity surrounded by an elastic solid *(7 pages)* 053104
Catherine Drysdale, Alexander A. Doinikov, and Philippe Marmottant

Numerical simulations of vesicle and bubble dynamics in two-dimensional four-roll mill flows *(14 pages)* 053105
Yongsam Kim, Ming-Chih Lai, and Yunchang Seol

Plateau-Rayleigh instability in solids is a simple phase separation *(8 pages)* 053106
Chen Xuan and John Biggins

Hydrodynamics of viscous inhalant flows *(9 pages)* 053107
Aaron C. True and John P. Crimaldi

Finite-thickness effects on the Rayleigh-Taylor instability in accelerated elastic solids *(9 pages)* 053108
S. A. Piriz, A. R. Piriz, and N. A. Tahir

Relaxation of twist helicity in the cascade process of linked quantum vortices *(6 pages)* 053109
Simone Zuccher and Renzo L. Ricca

Taylor cone and electrospraying at a free surface of superfluid helium charged from below *(9 pages)* 053110
P. Moroshkin, P. Leiderer, Th. B. Möller, and K. Kono

Wetting and dewetting processes in the axial retraction of liquid filaments *(16 pages)* 053111
Pablo D. Ravazzoli, Ingrith Cuellar, Alejandro G. González, and Javier A. Diez

Evidence for equivalence of diffusion processes of passive scalar and magnetic fields in anisotropic
Navier-Stokes turbulence *(6 pages)* 053112
E. Jurčišinová and M. Jurčišin

Experimental velocity study of non-Boussinesq Rayleigh-Bénard convection *(12 pages)* 053113
Valentina Valori, Gerrit Elsinga, Martin Rohde, Mark Tummers, Jerry Westerweel, and Tim van der Hagen

Thermal Rayleigh-Marangoni convection in a three-layer liquid-metal-battery model *(23 pages)* 053114
Thomas Köllner, Thomas Boeck, and Jörg Schumacher

(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 5** **MAY 2017**

Highly efficient optical director reorientation of liquid-crystalline polymer induced by dye additives *(6 pages)* . . . 052705
I. A. Budagovsky, V. N. Ochkin, S. A. Shvetsov, A. S. Zolot'ko, A. Yu. Bobrovsky, N. I. Boiko, and V. P. Shibaev

Comparative study of the anchoring strength of reactive mesogens and industrial polyimides used for the alignment of liquid crystals *(7 pages)* 052706
T. Sergan, I. Dozov, V. Sergan, and R. Voss

Films and Interfaces

Hydrodynamic theory of freezing: Nucleation and polycrystalline growth *(8 pages)* 052801
Frigyes Podmaniczky, Gyula I. Tóth, György Tegze, and László Gránásy

Spreading law on a completely wettable spherical substrate: The energy balance approach *(6 pages)* 052802
Masao Iwamatsu

Enhanced drainage and thinning of liquid films between bubbles and solids that support surface waves *(8 pages)* 052803
Amihai Horesh, Matvey Morozov, and Ofer Manor

Relation between the porosity and tortuosity of a membrane formed by disconnected irregular pores and the spatial diffusion coefficient of the Fick-Jacobs model *(10 pages)* 052804
Aldo Ledesma-Durán, S. I. Hernández, and Iván Santamaría-Holek

Contact angles of a drop pinned on an incline *(6 pages)* 052805
Joël De Coninck, François Dunlop, and Thierry Huillet

Granular Materials

General scaling relations for locomotion in granular media *(8 pages)* 052901
James Slonaker, D. Carrington Motley, Qiong Zhang, Stephen Townsend, Carmine Senatore, Karl Iagnemma, and Ken Kamrin

Statistical characterization of microstructure of packings of polydisperse hard cubes *(14 pages)* 052902
Hessam Malmir, Muhammad Sahimi, and M. Reza Rahimi Tabar

Shear banding, discontinuous shear thickening, and rheological phase transitions in athermally sheared frictionless disks *(24 pages)* 052903
Daniel Vågberg, Peter Olsson, and S. Teitel

Role of particle size in the kinematic properties of silo flow *(8 pages)* 052904
Diego Gella, Diego Maza, and Iker Zuriguel

Affine and topogical structural entropies in granular statistical mechanics: Explicit calculations and equation of state *(13 pages)* 052905
Shahar Amitai and Raphael Blumenfeld

Solid Mechanics

Coarse graining atomistic simulations of plastically deforming amorphous solids *(15 pages)* 053001
Adam R. Hinkle, Chris H. Rycroft, Michael D. Shields, and Michael L. Falk

Forces and torques on rigid inclusions in an elastic environment: Resulting matrix-mediated interactions, displacements, and rotations *(21 pages)* 053002
Mate Puljiz and Andreas M. Menzel

(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 5** **MAY 2017**

Polymers

Exact solution for the force-extension relation of a semiflexible polymer under compression *(12 pages)* 052501
Christina Kurzthaler and Thomas Franosch

Compressive response and helix formation of a semiflexible polymer confined in a nanochannel *(6 pages)* 052502
Yumino Hayase, Takahiro Sakaue, and Hiizu Nakanishi

Measuring geometric frustration in twisted inextensible filament bundles *(7 pages)* 052503
Andreea Panaitescu, Gregory M. Grason, and Arshad Kudrolli

Colloids, Complex Fluids, and Active Matter

Describing magnetorheology under a colloidal glass approach *(9 pages)* 052601
J. P. Segovia-Gutiérrez, J. de Vicente, Antonio M. Puertas, and R. Hidalgo-Alvarez

Fluidization and wall slip of soft glassy materials by controlled surface roughness *(6 pages)* 052602
Ladislav Derzsi, Daniele Filippi, Giampaolo Mistura, Matteo Pierno, Matteo Lulli, Mauro Sbragaglia, Massimo Bernaschi, and Piotr Garstecki

Recovery of mechanical pressure in a gas of underdamped active dumbbells with Brownian noise *(13 pages)* 052603
Marc Joyeux

Role of the displacement current on Warburg-type behavior *(13 pages)* 052604
I. Lelidis and G. Barbero

Tracer diffusion in active suspensions *(8 pages)* 052605
Eric W. Burkholder and John F. Brady

Contractile actuation and dynamical gel assembly of paramagnetic filaments in fast precessing fields *(8 pages)* . . . 052606
Joshua M. Dempster, Pablo Vázquez-Montejo, and Monica Olvera de la Cruz

Phase diagram and aggregation dynamics of a monolayer of paramagnetic colloids *(12 pages)* 052607
An T. Pham, Yuan Zhuang, Paige Detwiler, Joshua E. S. Socolar, Patrick Charbonneau, and Benjamin B. Yellen

Study of dynamic heterogeneity of an active particle system *(11 pages)* 052608
Huai Ding, Huijun Jiang, and Zhonghuai Hou

Liquid Crystals

Diffusion of chiral molecules and propagation of structural chirality in anisotropic liquids *(8 pages)* 052701
Mireille Quémener, Tigran Galstian, Thomas Marmin, Victoria Laroche, and Yves L. Dory

Role of length polydispersity in the phase behavior of freely rotating hard-rectangle fluids *(14 pages)* 052702
Ariel Díaz-De Armas and Yuri Martínez-Ratón

Heterogeneous colloidal particles immersed in a liquid crystal *(12 pages)* 052703
Setarehalsadat Changizrezaei and Colin Denniston

Influence of liquid crystalline phases on the tunability of a random laser *(9 pages)* 052704
José Trull, Josep Salud, Sergio Diez-Berart, and David O. López

(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 5** **MAY 2017**

Designing nucleosomal force sensors *(6 pages)* 052402
M. Tompitak, L. de Bruin, B. Eslami-Mossallam, and H. Schiessel

Robustness of synthetic oscillators in growing and dividing cells *(12 pages)* 052403
Joris Paijmans, David K. Lubensky, and Pieter Rein ten Wolde

Delayed bet-hedging resilience strategies under environmental fluctuations *(8 pages)* 052404
Masaki Ogura, Masashi Wakaiki, Harvey Rubin, and Victor M. Preciado

Viral self-assembly pathway and mechanical stress relaxation *(5 pages)* 052405
Martin Castelnovo

Stochastic lattice model of synaptic membrane protein domains *(23 pages)* 052406
Yiwei Li, Osman Kahraman, and Christoph A. Haselwandter

Lateral diffusion induced by active proteins in a biomembrane *(10 pages)* 052407
Yuto Hosaka, Kento Yasuda, Ryuichi Okamoto, and Shigeyuki Komura

Experimental comparison of forces resisting viral DNA packaging and driving DNA ejection *(5 pages)* 052408
Nicholas Keller, Zachary T. Berndsen, Paul J. Jardine, and Douglas E. Smith

Analytical solution of the steady membrane voltage fluctuation caused by a single ion channel *(8 pages)* 052409
Jia-Zeng Wang and Rui-Zhen Wang

Anticipated synchronization in neuronal circuits unveiled by a phase-response-curve analysis *(7 pages)* 052410
Fernanda S. Matias, Pedro V. Carelli, Claudio R. Mirasso, and Mauro Copelli

Model of the best-of-N nest-site selection process in honeybees *(15 pages)* 052411
Andreagiovanni Reina, James A. R. Marshall, Vito Trianni, and Thomas Bose

Symplectic and antiplectic waves in an array of beating cilia attached to a closed body *(5 pages)* 052412
Aref Ghorbani and Ali Najafi

Torque-coupled thermodynamic model for F_oF_1-ATPase *(8 pages)* 052413
Guangkuo Ai, Pengfei Liu, and Hao Ge

Actin growth profile in clathrin-mediated endocytosis *(17 pages)* 052414
D. J. Tweten, P. V. Bayly, and A. E. Carlsson

Compressive elasticity of polydisperse biopolymer gels *(11 pages)* 052415
Xinpeng Xu and Samuel A. Safran

β-Cyclodextrin polymer binding to DNA: Modulating the physicochemical parameters *(6 pages)* 052416
J. C. B. Rocha, E. F. Silva, M. F. Oliveira, F. B. Sousa, A. V. N. C. Teixeira, and M. S. Rocha

Functional window of the avian compass *(8 pages)* 052417
Vishvendra Singh Poonia, Kiran Kondabagil, Dipankar Saha, and Swaroop Ganguly

Uniform description of polymer ejection dynamics from capsid with and without hydrodynamics *(12 pages)* 052418
J. Piili, P. M. Suhonen, and R. P. Linna

Measurements and simulations of microscopic damage to DNA in water by 30 keV electrons:
A general approach applicable to other radiation sources and biological targets *(8 pages)* 052419
Marc Benjamin Hahn, Susann Meyer, Hans-Jörg Kunte, Tihomir Solomun, and Heinz Sturm

(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 5** **MAY 2017**

Social contagions on time-varying community networks *(8 pages)* 052306
Mian-Xin Liu, Wei Wang, Ying Liu, Ming Tang, Shi-Min Cai, and Hai-Feng Zhang

Simple wealth distribution model causing inequality-induced crisis without external shocks *(14 pages)* 052307
Henri Benisty

Language competition in a population of migrating agents *(6 pages)* 052308
Dorota Lipowska and Adam Lipowski

Cyclic public goods games: Compensated coexistence among mutual cheaters stabilized by optimized penalty taxation *(12 pages)* 052309
Christopher Griffin and Andrew Belmonte

Topology-dependent rationality and quantal response equilibria in structured populations *(9 pages)* 052310
Sabin Roman and Markus Brede

Scale-free networks emerging from multifractal time series *(9 pages)* 052311
Marcello A. Budroni, Andrea Baronchelli, and Romualdo Pastor-Satorras

Optimizing diffusion in multiplexes by maximizing layer dissimilarity *(10 pages)* 052312
Alfredo B. Serrano, Jesús Gómez-Gardeñes, and Roberto F. S. Andrade

Minimum spanning tree filtering of correlations for varying time scales and size of fluctuations *(10 pages)* 052313
Jarosław Kwapień, Paweł Oświęcimka, Marcin Forczek, and Stanisław Drożdż

Bounds of memory strength for power-law series *(9 pages)* 052314
Fangjian Guo, Dan Yang, Zimo Yang, Zhi-Dan Zhao, and Tao Zhou

Interacting opinion and disease dynamics in multiplex networks: Discontinuous phase transition and nonmonotonic consensus times *(20 pages)* 052315
Fátima Velásquez-Rojas and Federico Vazquez

Alliance formation with exclusion in the spatial public goods game *(8 pages)* 052316
Attila Szolnoki and Xiaojie Chen

Epidemic extinction paths in complex networks *(10 pages)* 052317
Jason Hindes and Ira B. Schwartz

Random walks on activity-driven networks with attractiveness *(8 pages)* 052318
Laura Alessandretti, Kaiyuan Sun, Andrea Baronchelli, and Nicola Perra

Entropy of international trades *(8 pages)* 052319
Chang-Young Oh and D.-S. Lee

Multiscale model for pedestrian and infection dynamics during air travel *(7 pages)* 052320
Sirish Namilae, Pierrot Derjany, Anuj Mubayi, Mathew Scotch, and Ashok Srinivasan

PART B

Biological Physics

Torque and buckling in stretched intertwined double-helix DNAs *(16 pages)* 052401
Sumitabha Brahmachari and John F. Marko

(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 5** **MAY 2017**

Synchronization of fluctuating delay-coupled chaotic networks *(11 pages)* 052210
Manuel Jiménez-Martín, Javier Rodríguez-Laguna, Otti D'Huys, Javier de la Rubia, and Elka Korutcheva

Dynamics of a bistable Miura-origami structure *(11 pages)* 052211
Hongbin Fang, Suyi Li, Huimin Ji, and K. W. Wang

Spontaneous exchange of leader-laggard relationship in mutually coupled synchronized semiconductor lasers *(12 pages)* 052212
Kazutaka Kanno, Takuya Hida, Atsushi Uchida, and Masatoshi Bunsen

Chaos in the band structure of a soft Sinai lattice *(11 pages)* 052213
Max D. Porter, Aaron Barr, Ariel Barr, and L. E. Reichl

Localized dark solitons and vortices in defocusing media with spatially inhomogeneous nonlinearity *(8 pages)* . . . 052214
Jianhua Zeng and Boris A. Malomed

Intrinsic flow structure and multifractality in two-dimensional bacterial turbulence *(8 pages)* 052215
Lipo Wang (王利坡) and Yongxiang Huang (黄永祥)

Two-dimensional localized chaotic patterns in parametrically driven systems *(6 pages)* 052216
Deterlino Urzagasti, David Laroze, and Harald Pleiner

Dynamics of interacting electrons under effect of a Morse potential *(10 pages)* 052217
J. L. L. dos Santos, M. O. Sales, A. Ranciaro Neto, and F. A. B. F. de Moura

Dynamics of spiral waves rotating around an obstacle and the existence of a minimal obstacle *(7 pages)* 052218
Xiang Gao, Xia Feng, Teng-Chao Li, Shixian Qu, Xingang Wang, and Hong Zhang

Emergence of chaos in starlike networks of dissipative nonlinear oscillators by localized parametric excitations *(11 pages)* 052219
R. Chacón, A. Martínez García-Hoz, and J. A. Martínez

Pattern of a confined chemical garden controlled by injection speed *(7 pages)* 052220
Shu Wagatsuma, Takuro Higashi, Yutaka Sumino, and Ayumi Achiwa

Networks and Complex Systems

Simon's fundamental rich-get-richer model entails a dominant first-mover advantage *(7 pages)* 052301
Peter Sheridan Dodds, David Rushing Dewhurst, Fletcher F. Hazlehurst, Colin M. Van Oort, Lewis Mitchell, Andrew J. Reagan, Jake Ryland Williams, and Christopher M. Danforth

Extortion provides alternative routes to the evolution of cooperation in structured populations *(7 pages)* 052302
Xiongrui Xu, Zhihai Rong, Zhi-Xi Wu, Tao Zhou, and Chi Kong Tse

General expression for the component size distribution in infinite configuration networks *(8 pages)* 052303
Ivan Kryven

Noise focusing in neuronal tissues: Symmetry breaking and localization in excitable networks with quenched disorder *(8 pages)* 052304
Javier G. Orlandi and Jaume Casademunt

Optimal cost for strengthening or destroying a given network *(8 pages)* 052305
Amikam Patron, Reuven Cohen, Daqing Li, and Shlomo Havlin

(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 5** **MAY 2017**

Condensation of Lee-Yang zeros in scalar field theory *(6 pages)* 052145
N. G. Antoniou, F. K. Diakonos, X. N. Maintas, and C. E. Tsagkarakis

Six-vertex model and Schramm-Loewner evolution *(5 pages)* 052146
Richard Kenyon, Jason Miller, Scott Sheffield, and David B. Wilson

Quantum Monte Carlo study of the spin-1/2 honeycomb Heisenberg model with mixed antiferromagnetic and ferromagnetic interactions in external magnetic fields *(11 pages)* 052147
Yi-Zhen Huang and Gang Su

Nondivergent and negative susceptibilities around critical points of a long-range Hamiltonian system with two order parameters *(14 pages)* 052148
Yoshiyuki Y. Yamaguchi and Daiki Sawai

Localization in random bipartite graphs: Numerical and empirical study *(14 pages)* 052149
František Slanina

Zero-temperature coarsening in the Ising model with asymmetric second-neighbor interactions in two dimensions *(8 pages)* 052150
Pratik Mullick and Parongama Sen

Nonlinear Dynamics and Chaos

Reducing microwave absorption with fast frequency modulation *(5 pages)* 052201
Juehang Qin and A. Hubler

Nonuniversality in the spectral properties of time-reversal-invariant microwave networks and quantum graphs *(8 pages)* 052202
Barbara Dietz, Vitalii Yunko, Małgorzata Białous, Szymon Bauch, Michał Ławniczak, and Leszek Sirko

Qualitative changes in phase-response curve and synchronization at the saddle-node-loop bifurcation *(12 pages)* 052203
Janina Hesse, Jan-Hendrik Schleimer, and Susanne Schreiber

Splitting in the pinning-depinning transition of fronts in long-delayed bistable systems *(7 pages)* 052204
Francesco Marino, Giovanni Giacomelli, and Stephane Barland

Noise-induced transitions in a double-well excitable oscillator *(7 pages)* 052205
Vladimir V. Semenov

Recurrence measure of conditional dependence and applications *(8 pages)* 052206
Antônio M. T. Ramos, Alejandro Builes-Jaramillo, Germán Poveda, Bedartha Goswami, Elbert E. N. Macau, Jürgen Kurths, and Norbert Marwan

Hierarchical structure in sharply divided phase space for the piecewise linear map *(8 pages)* 052207
Akira Akaishi, Kazuki Aoki, and Akira Shudo

Pattern formation in a reaction-diffusion system of Fitzhugh-Nagumo type before the onset of subcritical Turing bifurcation *(7 pages)* 052208
Maxim Kuznetsov, Andrey Kolobov, and Andrey Polezhaev

Probability of noise- and rate-induced tipping *(13 pages)* 052209
Paul Ritchie and Jan Sieber

(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 5** **MAY 2017**

Stationary engines in and beyond the linear response regime at the Carnot efficiency *(10 pages)* 052128
Naoto Shiraishi

Finite-size corrections in the random assignment problem *(15 pages)* 052129
Sergio Caracciolo, Matteo P. D'Achille, Enrico M. Malatesta, and Gabriele Sicuro

Diffusion-driven self-assembly of rodlike particles: Monte Carlo simulation on a square lattice *(11 pages)* 052130
Nikolai I. Lebovka, Yuri Yu. Tarasevich, Volodymyr A. Gigiberiya, and Nikolai V. Vygornitskii

Approximate probabilistic cellular automata for the dynamics of single-species populations under discrete logisticlike growth with and without weak Allee effects *(9 pages)* 052131
J. Ricardo G. Mendonça and Yeva Gevorgyan

Entropy of diluted antiferromagnetic Ising models on frustrated lattices using the Wang-Landau method *(8 pages)* 052132
Yuriy Shevchenko, Konstantin Nefedev, and Yutaka Okabe

Dual time scales in simulated annealing of a two-dimensional Ising spin glass *(12 pages)* 052133
Shanon J. Rubin, Na Xu, and Anders W. Sandvik

Double diffusivity model under stochastic forcing *(10 pages)* 052134
Amit K. Chattopadhyay and Elias C. Aifantis

Phase transitions at high energy vindicate negative microcanonical temperature *(12 pages)* 052135
P. Buonsante, R. Franzosi, and A. Smerzi

𝔖 Local time of Lévy random walks: A path integral approach *(9 pages)* 052136
Václav Zatloukal

Work distributions for random sudden quantum quenches *(8 pages)* 052137
Marcin Łobejko, Jerzy Łuczka, and Peter Talkner

Heat fluctuations of Brownian oscillators in nonstationary processes: Fluctuation theorem and condensation transition *(14 pages)* 052138
A. Crisanti, A. Sarracino, and M. Zannetti

Nonscaling displacement distributions as may be seen in fluorescence correlation spectroscopy *(8 pages)* 052139
S. M. J. Khadem and I. M. Sokolov

Effect of antifreeze protein on heterogeneous ice nucleation based on a two-dimensional random-field Ising model *(6 pages)* 052140
Zhen Dong, Jianjun Wang, and Xin Zhou

Charge and spin current statistics of the open Hubbard model with weak coupling to the environment *(9 pages)* 052141
Berislav Buča and Tomaž Prosen

Microscopic derivation of the hydrodynamics of active-Brownian-particle suspensions *(10 pages)* 052142
Stefano Steffenoni, Gianmaria Falasco, and Klaus Kroy

Limiting the stroke of a Schmitt trigger with multiplicative noise *(7 pages)* 052143
Gabriel A. Zarza, Sergio E. Mangioni, Javier Fernandez Acevedo, and Roberto R. Deza

Origin of the inverse energy cascade in two-dimensional quantum turbulence *(8 pages)* 052144
Audun Skaugen and Luiza Angheluta

(Continued)

𝔖 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 5** **MAY 2017**

Experimental investigations and phase-field simulations of triple-phase-separation kinetics within liquid ternary Co-Cu-Pb immiscible alloys *(15 pages)* 052111
Y. H. Wu, W. L. Wang, N. Yan, and B. Wei

Composition law of κ-entropy for statistically independent systems *(5 pages)* 052112
G. Kaniadakis, A. M. Scarfone, A. Sparavigna, and T. Wada

Viscosity of a classical gas: The rare-collision versus the frequent-collision regime *(7 pages)* 052113
A. G. Magner, M. I. Gorenstein, and U. V. Grygoriev

Estimating higher-order structure functions from geophysical turbulence time series: Confronting the curse of the limited sample size *(11 pages)* 052114
Adam W. DeMarco and Sukanta Basu

Universal spatiotemporal scaling of distortions in a drifting lattice *(8 pages)* 052115
Pritha Dolai, Abhik Basu, and Aditi Simha

Measuring effective temperatures in a generalized Gibbs ensemble *(8 pages)* 052116
Laura Foini, Andrea Gambassi, Robert Konik, and Leticia F. Cugliandolo

Numerical study of the F model with domain-wall boundaries *(14 pages)* 052117
Rick Keesman and Jules Lamers

Capturing Brownian dynamics with an on-lattice model of hard-sphere diffusion *(9 pages)* 052118
Claudia Cianci, Stephen Smith, and Ramon Grima

Cavity master equation for the continuous time dynamics of discrete-spin models *(14 pages)* 052119
E. Aurell, G. Del Ferraro, E. Domínguez, and R. Mulet

Similarity law for Widom lines and coexistence lines *(5 pages)* 052120
D. T. Banuti, M. Raju, and M. Ihme

Global stability and H theorem in lattice models with nonconservative interactions *(12 pages)* 052121
C. A. Plata and A. Prados

Breakdown of the Stokes-Einstein relation in pure Lennard-Jones fluids: From gas to liquid via supercritical states *(6 pages)* 052122
Norikazu Ohtori, Shohei Miyamoto, and Yoshiki Ishii

Two coupled, driven Ising spin systems working as an engine *(6 pages)* 052123
Debarshi Basu, Joydip Nandi, A. M. Jayannavar, and Rahul Marathe

Colored percolation *(9 pages)* 052124
Sumanta Kundu and S. S. Manna

Large-scale structure of randomly jammed spheres *(10 pages)* 052125
Atsushi Ikeda, Ludovic Berthier, and Giorgio Parisi

Variance of permutation entropy and the influence of ordinal pattern selection *(9 pages)* 052126
Douglas J. Little and Deb M. Kane

Evolution of moments and correlations in nonrenewal escape-time processes *(13 pages)* 052127
Wilhelm Braun, Rüdiger Thul, and André Longtin

(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 5** **MAY 2017**

Fluid Dynamics

Mechanism of unconfined dust explosions: Turbulent clustering and radiation-induced ignition *(5 pages)* . . . . . 051101(R)
Michael Liberman, Nathan Kleeorin, Igor Rogachevskii, and Nils Erland L. Haugen

Plasma Physics

Plasma high-order-harmonic generation from ultraintense laser pulses *(5 pages)* . . . . . 051201(R)
Suo Tang, Naveen Kumar, and Christoph H. Keitel

Measurement of the shell decompression in direct-drive inertial-confinement-fusion implosions *(5 pages)* . . . . . 051202(R)
D. T. Michel, S. X. Hu, A. K. Davis, V. Yu. Glebov, V. N. Goncharov, I. V. Igumenshchev, P. B. Radha, C. Stoeckl, and D. H. Froula

Computational Physics

Nearly maximally predictive features and their dimensions *(6 pages)* . . . . . 051301(R)
Sarah E. Marzen and James P. Crutchfield

ARTICLES

Statistical Physics

Critical behavior of the two-dimensional Ising model with a slit *(6 pages)* 052101
Xintian Wu

Lévy flights versus Lévy walks in bounded domains *(13 pages)* 052102
Bartłomiej Dybiec, Ewa Gudowska-Nowak, Eli Barkai, and Alexander A. Dubkov

Multiple random walks on complex networks: A harmonic law predicts search time *(9 pages)* 052103
Tongfeng Weng, Jie Zhang, Michael Small, and Pan Hui

Temperature distribution and heat radiation of patterned surfaces at short wavelengths *(7 pages)* 052104
Thorsten Emig

One-dimensional irreversible aggregation with dynamics of a totally asymmetric simple exclusion process *(10 pages)* 052105
N. Zh. Bunzarova and N. C. Pesheva

Dynamics of a mechanical system with multiple degrees of freedom out of thermal equilibrium *(8 pages)* 052106
A. Feigel

Anomalous diffusion on a fractal mesh *(10 pages)* 052107
Trifce Sandev, Alexander Iomin, and Holger Kantz

Asymptotic prime partitions of integers *(9 pages)* 052108
Johann Bartel, R. K. Bhaduri, Matthias Brack, and M. V. N. Murthy

Kinetic percolation *(6 pages)* 052109
W. R. Heinson, A. Chakrabarti, and C. M. Sorensen

Memory-induced diffusive-superdiffusive transition: Ensemble and time-averaged observables *(11 pages)* 052110
Adrián A. Budini

(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 5 PARTS A AND B — *CONTENTS* — **MAY 2017**

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)–052320, and Part B pages 052401–053309.

PART A

RAPID COMMUNICATIONS

Statistical Physics

Energy-dissipation anomaly in systems of localized waves *(5 pages)* . . . . . 050101(R)
Basile Gallet

Quantum-to-classical transition in the work distribution for chaotic systems *(4 pages)* . . . . . 050102(R)
Ignacio García-Mata, Augusto J. Roncaglia, and Diego A. Wisniacki

Driven Brownian particle as a paradigm for a nonequilibrium heat bath: Effective temperature and cyclic work extraction *(6 pages)* . . . . . 050103(R)
R. Wulfert, M. Oechsle, T. Speck, and U. Seifert

Nonlinear Dynamics and Chaos

Coherent oscillations of driven rf SQUID metamaterials *(5 pages)* . . . . . 050201(R)
Melissa Trepanier, Daimeng Zhang, Oleg Mukhanov, V. P. Koshelets, Philipp Jung, Susanne Butz, Edward Ott, Thomas M. Antonsen, Alexey V. Ustinov, and Steven M. Anlage

Polymers

Solvent-dependent critical properties of polymer adsorption *(5 pages)* . . . . . 050501(R)
João A. Plascak, Paulo H. L. Martins, and Michael Bachmann

Colloids, Complex Fluids, and Active Matter

Nonmonotonic dynamic correlations in quasi-two-dimensional confined glass-forming liquids *(5 pages)* . . . . . 050601(R)
Baicheng Mei, Yuyuan Lu, Lijia An, Hongfei Li, and Liang Wang

Granular Materials

Collisional dissipation rate in shearing flows of granular liquid crystals *(5 pages)* . . . . . 050901(R)
Diego Berzi, Nha Thai-Quang, Yu Guo, and Jennifer Curtis

Copyright 2017 by American Physical Society

2470-0045(201705)95:5:B;1-2

(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).