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 100, NUMBER 5
PARTS A AND B

CONTENTS

NOVEMBER 2019

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)–052315, and Part B pages 052401–057001.

PART A

RAPID COMMUNICATIONS

Statistical Physics

Multiparameter universality and directional nonuniversality of exact anisotropic critical correlation functions of the two-dimensional Ising universality class *(7 pages)* . . . . . 050101(R)
Volker Dohm

Learning a local symmetry with neural networks *(6 pages)* . . . . . 050102(R)
A. Decelle, V. Martin-Mayor, and B. Seoane

Surprising variants of Cauchy's formula for mean chord length *(5 pages)* . . . . . 050103(R)
Prabodh Shukla and Diana Thongjaomayum

Networks and Complex Systems

Nonuniversal opinion dynamics driven by opposing external influences *(5 pages)* . . . . . 050301(R)
Deepak Bhat and S. Redner

Biological Physics

Critical size of neural population for reliable information transmission *(5 pages)* . . . . . 050401(R)
Lubomir Kostal and Ryota Kobayashi

Translational control of gene expression via interacting feedback loops *(6 pages)* . . . . . 050402(R)
Liang Wang, M. Carmen Romano, and Fordyce A. Davidson

Colloids, Complex Fluids, and Active Matter

Charge regulation radically modifies electrostatics in membrane stacks *(6 pages)* . . . . . 050601(R)
Arghya Majee, Markus Bier, Ralf Blossey, and Rudolf Podgornik

Crossover of the effective charge in ionic thermoresponsive hydrogel particles *(5 pages)* . . . . . 050602(R)
A. Moncho-Jordá and M. Quesada-Pérez

Stochastic thermodynamics for self-propelled particles *(6 pages)* . . . . . 050603(R)
Grzegorz Szamel

Copyright 2019 by American Physical Society

(Continued)

2470-0045(201911)100:5:A;1-4

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 100, NUMBER 5 NOVEMBER 2019

Solid Mechanics

Continuum theory of bending-to-stretching transition *(5 pages)* . . . . . 051001(R)
O. U. Salman, G. Vitale, and L. Truskinovsky

Isolated frequencies at which nonlinear materials behave linearly *(5 pages)* . . . . . 051002(R)
Matthew D. Fronk and Michael J. Leamy

Fluid Dynamics

Rotating magnetic nanorods detect minute fluctuations of magnetic field *(5 pages)* . . . . . 051101(R)
Vaibhav Palkar, Pavel Aprelev, Arthur Salamatin, Artis Brasovs, Olga Kuksenok, and Konstantin G. Kornev

ARTICLES

Statistical Physics

Performance optimization of low-dissipation thermal machines revisited *(6 pages)* 052101
Ramandeep S. Johal

Nonintegrability and thermalization of one-dimensional diatomic lattices *(7 pages)* 052102
Weicheng Fu, Yong Zhang, and Hong Zhao

Drift-diffusion processes resulting from elimination of fast variables under inhomogeneous conditions *(9 pages)* 052103
Paul E. Lammert

Percolation of aligned rigid rods on two-dimensional triangular lattices *(11 pages)* 052104
P. Longone, P. M. Centres, and A. J. Ramirez-Pastor

Optimized sampling of mixed-state observables *(14 pages)* 052105
Marec W. Heger, Christiane P. Koch, and Daniel M. Reich

Criticality of the $O(2)$ model with cubic anisotropies from nonperturbative renormalization *(9 pages)* 052106
Andrzej Chlebicki and Pawel Jakubczyk

DNA breathing dynamics under periodic forcing: Study of several distribution functions of relevant Brownian functionals *(15 pages)* 052107
Ashutosh Dubey and Malay Bandyopadhyay

Critical properties of cluster size distribution in an asymmetric diffusion-aggregation model *(8 pages)* 052108
Jean-Yves Fortin

Heat conduction in harmonic chains with Lévy-type disorder *(8 pages)* 052109
I. F. Herrera-González and J. A. Méndez-Bermúdez

Particle pinning suppresses spinodal criticality in the shear-banding instability *(5 pages)* 052110
Bhanu Prasad Bhowmik, Smarajit Karmakar, Itamar Procaccia, and Corrado Rainone

Kardar-Parisi-Zhang universality of the Nagel-Schreckenberg model *(10 pages)* 052111
Jan de Gier, Andreas Schadschneider, Johannes Schmidt, and Gunter M. Schütz

Turbidity data obtained from image analysis in near critical hydrogen *(15 pages)* 052112
Ana Oprisan, Gurunath Gandikota, Denis Chatain, Yves Garrabos, and Daniel Beysens

(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 100, NUMBER 5** **NOVEMBER 2019**

Flip motion of solitary wave in an Ising-type Vicsek model *(8 pages)* 052113
Hidetsugu Sakaguchi and Kazuya Ishibashi

Random sequential adsorption on Euclidean, fractal, and random lattices *(8 pages)* 052114
P. M. Pasinetti, L. S. Ramirez, P. M. Centres, A. J. Ramirez-Pastor, and G. A. Cwilich

Free energy of a general computation *(7 pages)* 052115
Ämin Baumeler and Stefan Wolf

Apparent violations of the second law in two-level systems *(5 pages)* 052116
Christoph Streißnig and Holger Kantz

Generalized diffusion of quantum Brownian motion *(7 pages)* 052117
Pedro J. Colmenares

Zeros of partition functions in the NPT ensemble *(6 pages)* 052118
Timur Aslyamov and Iskander Akhatov

Unusual changeover in the transition nature of local-interaction Potts models *(7 pages)* 052119
Nir Schreiber, Reuven Cohen, Simi Haber, Gideon Amir, and Baruch Barzel

Interface growth driven by a single active particle *(14 pages)* 052120
Prachi Bisht and Mustansir Barma

Single-file transport in periodic potentials: The Brownian asymmetric simple exclusion process *(14 pages)* 052121
Dominik Lips, Artem Ryabov, and Philipp Maass

Truncated Lévy motion through path integrals and applications to nondiffusive suprathermal ion transport *(14 pages)* 052122
F. Manke, M. Baquero-Ruiz, I. Furno, O. Chellaï, A. Fasoli, and P. Ricci

From power law to Anderson localization in nonlinear Schrödinger equation with nonlinear randomness *(8 pages)* 052123
Alexander Iomin

Stochastic thermodynamics of a harmonically trapped colloid in linear mixed flow *(12 pages)* 052124
Asawari Pagare and Binny J. Cherayil

Nonequilibrium chemical potentials of steady-state lattice gas models in contact: A large-deviation approach *(22 pages)* 052125
Jules Guioth and Eric Bertin

Finite-time performance of a quantum heat engine with a squeezed thermal bath *(8 pages)* 052126
Jianhui Wang, Jizhou He, and Yongli Ma

Three heats in a strongly coupled system and bath *(11 pages)* 052127
Chulan Kwon, Jaegon Um, Joonhyun Yeo, and Hyunggyu Park

Induced correlations and rupture of molecular chaos by anisotropic dissipative Janus hard disks *(9 pages)* 052128
Antonio Lasanta, Aurora Torrente, and Mariano López de Haro

Dynamics of quasiperiodically driven spin systems *(8 pages)* 052129
Sayak Ray, Subhasis Sinha, and Diptiman Sen

Model of magnetic friction obeying the Dieterich-Ruina law in the steady state *(5 pages)* 052130
Hisato Komatsu

(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 100, NUMBER 5** **NOVEMBER 2019**

Multidimensional elephant random walk with coupled memory *(10 pages)* 052131
Vitor M. Marquioni

Structural behavior of fluids from the vapor and liquid region to the supercritical phase *(5 pages)* 052132
James Losey and Richard J. Sadus

Hidden complexity in Life-like rules *(6 pages)* 052133
Miguel Melgarejo, Marco Alzate, and Nelson Obregon

Particle transport at arbitrary timescales with Poisson-distributed collisions *(14 pages)* 052134
M. Baquero-Ruiz, F. Manke, I. Furno, A. Fasoli, and P. Ricci

Ensemble inequivalence in the Blume-Emery-Griffiths model near a fourth-order critical point *(9 pages)* 052135
V. V. Prasad, Alessandro Campa, David Mukamel, and Stefano Ruffo

Work statistics for sudden quenches in interacting quantum many-body systems *(12 pages)* 052136
Eric G. Arrais, Diego A. Wisniacki, Augusto J. Roncaglia, and Fabricio Toscano

Thermodynamic uncertainty relations including measurement and feedback *(8 pages)* 052137
Patrick P. Potts and Peter Samuelsson

Universal and nonuniversal neural dynamics on small world connectomes: A finite-size scaling analysis *(6 pages)* 052138
Mahdi Zarepour, Juan I. Perotti, Orlando V. Billoni, Dante R. Chialvo, and Sergio A. Cannas

Direct evaluation of dynamical large-deviation rate functions using a variational ansatz *(16 pages)* 052139
Daniel Jacobson and Stephen Whitelam

Derivation of an exact, nonequilibrium framework for nucleation: Nucleation is *a priori* neither diffusive nor Markovian *(7 pages)* 052140
Anja Kuhnhold, Hugues Meyer, Graziano Amati, Philipp Pelagejcev, and Tanja Schilling

Continuous stochastic processes with nonlocal memory *(7 pages)* 052141
S. S. Melnyk, V. A. Yampol'skii, and O. V. Usatenko

Kinetic theory of one-dimensional homogeneous long-range interacting systems sourced by $1/N^2$ effects *(14 pages)* 052142
Jean-Baptiste Fouvry, Ben Bar-Or, and Pierre-Henri Chavanis

Analytical measure of temperature for nonlinear dynamical systems *(6 pages)* 052143
Yue Liu and Dahai He

Non-self-averaging in random trapping transport: The diffusion coefficient in the fluctuation regime *(9 pages)* . . . 052144
K. A. Pronin

Critical charge and density coupling in ionic spherical models *(20 pages)* 052145
Jean-Noël Aqua and Michael E. Fisher

Locating fixed points in the phase plane *(8 pages)* 052146
Yanhua Zhang, Yeyin Zhao, Lizhu Chen, Xue Pan, Mingmei Xu, Zhiming Li, Yu Zhou, and Yuanfang Wu

Run-and-tumble motion in one dimension with space-dependent speed *(6 pages)* 052147
L. Angelani and R. Garra

Nonlocal random walk over Floquet states of a dissipative nonlinear oscillator *(22 pages)* 052148
Yaxing Zhang and M. I. Dykman

(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 100, NUMBER 5** **NOVEMBER 2019**

Generalized Einstein relations and conditions for anomalous relaxation *(7 pages)* 052149
Jing-Dong Bao

Range of geometrical frustration in lattice spin models *(10 pages)* 052150
Pierre Ronceray and Bruno Le Floch

Nonlinear Dynamics and Chaos

State-dependent vulnerability of synchronization *(7 pages)* 052201
Everton S. Medeiros, Rene O. Medrano-T, Iberê L. Caldas, Tamás Tél, and Ulrike Feudel

Asymptotic relationship between homoclinic points and periodic orbit stability exponents *(6 pages)* 052202
Jizhou Li and Steven Tomsovic

Discrete-breather-assisted charge transport along DNA-like molecular wires *(9 pages)* 052203
A. P. Chetverikov, W. Ebeling, V. D. Lakhno, and M. G. Velarde

Rare events in mixed-mode oscillations from weakly coupled lasers *(14 pages)* 052204
Eusebius J. Doedel and Carlos L. Pando L.

Structure of resonance eigenfunctions for chaotic systems with partial escape *(11 pages)* 052205
Konstantin Clauß, Eduardo G. Altmann, Arnd Bäcker, and Roland Ketzmerick

Wannier basis method for the Kolmogorov-Arnold-Moser effect in quantum mechanics *(7 pages)* 052206
Chao Yin (尹超), Yu Chen (陈宇), and Biao Wu (吴飙)

Fractal structures in the parameter space of nontwist area-preserving maps *(8 pages)* 052207
A. C. Mathias, M. Mugnaine, M. S. Santos, J. D. Szezech Jr., I. L. Caldas, and R. L. Viana

Distribution of growth directions in meadows of clonal plants *(8 pages)* 052208
D. Ruiz-Reynés and D. Gomila

Solitary wave formation under the interplay between spatial inhomogeneity and nonlocality *(9 pages)* 052209
Konstantinos Dragonas and Yannis Kominis

Nucleation of spatiotemporal structures from defect turbulence in the two-dimensional complex Ginzburg-Landau equation *(15 pages)* 052210
Weigang Liu and Uwe C. Täuber

Noise-induced macroscopic oscillations in a network of synaptically coupled quadratic integrate-and-fire neurons *(9 pages)* 052211
Irmantas Ratas and Kestutis Pyragas

Revival and death of oscillation under mean-field coupling: Interplay of intrinsic and extrinsic filtering *(10 pages)* 052212
Krishna Kumar, Debabrata Biswas, Tanmoy Banerjee, Wei Zou, J. Kurths, and D. V. Senthilkumar

Dynamics of $A + B \to C$ reaction fronts under radial advection in three dimensions *(13 pages)* 052213
Alessandro Comolli, A. De Wit, and Fabian Brau

Simulation of geochemical banding: Theoretical modeling and fractal structure in acidization-diffusion-precipitation dynamics *(6 pages)* 052214
Mazen Al-Ghoul and Rabih Sultan

Hyperchaos synchronization using univariate impulse control *(8 pages)* 052215
Kun Tian, Chao Bai, Hai-Peng Ren, and Celso Grebogi

(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 100, NUMBER 5** **NOVEMBER 2019**

High-order rogue waves of a long-wave–short-wave model of Newell type *(11 pages)* 052216
Junchao Chen, Liangyuan Chen, Bao-Feng Feng, and Ken-ichi Maruno

Pattern formation in reaction-diffusion systems in the presence of non-Markovian diffusion *(9 pages)* 052217
Reza Torabi and Jörn Davidsen

Mechanism of dissipative soliton stabilization by nonlinear gradient terms *(10 pages)* 052218
Orazio Descalzi, Jaime Cisternas, and Helmut R. Brand

Rogue waves on the double-periodic background in the focusing nonlinear Schrödinger equation *(18 pages)* 052219
Jinbing Chen, Dmitry E. Pelinovsky, and Robert E. White

Networks and Complex Systems

Mechanism for explosive synchronization of neural networks *(8 pages)* 052301
B. R. R. Boaretto, R. C. Budzinski, T. L. Prado, and S. R. Lopes

Dynamical correlations and pairwise theory for the symbiotic contact process on networks *(9 pages)* 052302
Marcelo M. de Oliveira, Sidiney G. Alves, and Silvio C. Ferreira

Early-warning signals using dynamical network markers selected by covariance *(9 pages)* 052303
Tadayoshi Matsumori, Hiroyuki Sakai, and Kazuyuki Aihara

Cooperator-driven and defector-driven punishments: How do they influence cooperation? *(25 pages)* 052304
Pengbi Cui (崔鹏碧), Zhi-Xi Wu, Tao Zhou, and Xiaojie Chen

High-order couplings in geometric complex networks of neurons *(6 pages)* 052305
A. Tlaie, I. Leyva, and I. Sendiña-Nadal

Asymmetry in interdependence makes a multilayer system more robust against cascading failures *(11 pages)* 052306
Run-Ran Liu, Chun-Xiao Jia, and Ying-Cheng Lai

Replicator population dynamics of group interactions: Broken symmetry, thresholds for metastability, and macroscopic behavior *(10 pages)* 052307
Emmanuel Artiges, Carlos Gracia-Lázaro, Luis Mario Floría, and Yamir Moreno

Exploring the solution landscape enables more reliable network community detection *(7 pages)* 052308
Joaquín Calatayud, Rubén Bernardo-Madrid, Magnus Neuman, Alexis Rojas, and Martin Rosvall

Giant component in a configuration-model power-law graph with a variable number of links *(15 pages)* 052309
Heung Kyung Kim, Mi Jin Lee, Matthieu Barbier, Sung-Gook Choi, Min Seok Kim, Hyung-Ha Yoo, and Deok-Sun Lee

Characterizing nonstationary coherent states in globally coupled conformist and contrarian oscillators *(14 pages)* 052310
Tian Qiu, S. Boccaletti, Zonghua Liu, and Shuguang Guan

Efficient spread-size approximation of opinion spreading in general social networks *(17 pages)* 052311
Byeongjin Choe, Yishi Lin, Sungsu Lim, John C. S. Lui, and Kyomin Jung

Machine learning dynamical phase transitions in complex networks *(11 pages)* 052312
Qi Ni, Ming Tang, Ying Liu, and Ying-Cheng Lai

Latent geometry and dynamics of proximity networks *(15 pages)* 052313
Fragkiskos Papadopoulos and Marco Antonio Rodríguez Flores

(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 100, NUMBER 5 NOVEMBER 2019

Network desynchronization by non-Gaussian fluctuations *(11 pages)* 052314
Jason Hindes, Philippe Jacquod, and Ira B. Schwartz

Eigenvalue repulsion and eigenvector localization in sparse non-Hermitian random matrices *(20 pages)* 052315
Grace H. Zhang and David R. Nelson

PART B

Biological Physics

Spatial propagation of electrical signals in circular biofilms: A combined experimental and agent-based fire-diffuse-fire study *(10 pages)* 052401
J. A. Blee, I. S. Roberts, and T. A. Waigh

Investigation of chemical noise in multisite phosphorylation chain using linear noise approximation *(10 pages)* 052402
Soutrick Das and Debashis Barik

Dynamics of particle uptake at cell membranes *(18 pages)* 052403
Felix Frey, Falko Ziebert, and Ulrich S. Schwarz

Phase behavior of blocky charge lattice polymers: Crystals, liquids, sheets, filaments, and clusters *(17 pages)* 052404
Nicholas A. S. Robichaud, Ivan Saika-Voivod, and Stefan Wallin

Loop formation and translational diffusion of intrinsically disordered proteins *(12 pages)* 052405
Steffen Mühle, Man Zhou, Arindam Ghosh, and Jörg Enderlein

Single-cell stochastic gene expression kinetics with coupled positive-plus-negative feedback *(16 pages)* 052406
Chen Jia, Le Yi Wang, George G. Yin, and Michael Q. Zhang

Nonautonomous dynamics of acute cell injury *(18 pages)* 052407
Donald J. DeGracia, Doaa Taha, Fika Tri Anggraini, and Zhi-Feng Huang

Mechanical conditions for stable symmetric cell constriction *(16 pages)* 052408
Elena Beltrán-Heredia, Francisco Monroy, and Francisco J. Cao-García

Role of substrate-product frustration on enzyme functional dynamics *(9 pages)* 052409
Jianyang Kong, Jiachen Li, Jiajun Lu, Wenfei Li, and Wei Wang

Magnetic polymer models for epigenetics-driven chromosome folding *(10 pages)* 052410
Davide Colì, Enzo Orlandini, Davide Michieletto, and Davide Marenduzzo

Weak selection can filter environmental noise in the evolution of animal behavior *(8 pages)* 052411
Cong Li, Xiu-Deng Zheng, Tian-Jiao Feng, Ming-Yang Wang, Sabin Lessard, and Yi Tao

Packing of semiflexible polymers into viral capsid in crowded environments *(9 pages)* 052412
N. Al-Naamani and I. Ali

Polymers

Dumbbell kinetic theory for polymers in a combination of flow and external electric field *(9 pages)* 052501
Angelo C. Setaro and Patrick T. Underhill

(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 100, NUMBER 5 NOVEMBER 2019

Phase behavior of disk-coil block copolymers under cylindrical confinement: Curvature-induced structural frustrations *(7 pages)* 052502
Min Young Ha, Ji Ho Ryu, Eugene N. Cho, Junwon Choi, YongJoo Kim, and Won Bo Lee

Colloids, Complex Fluids, and Active Matter

Rigorously solvable model for the electrical conductivity of dispersions of hard-core–penetrable-shell particles and its applications *(14 pages)* 052601
M. Ya. Sushko and A. K. Semenov

Microphase separation in a two-dimensional colloidal system with competing attractive critical Casimir and repulsive magnetic dipole interactions *(8 pages)* 052602
Kevin Marolt, Michael Zimmermann, and Roland Roth

Design strategies for engineering soluto-inertial suspension interactions *(12 pages)* 052603
Anirudha Banerjee, Douglas R. Vogus, and Todd M. Squires

Phase coexistence of active Brownian particles *(15 pages)* 052604
Sophie Hermann, Philip Krinninger, Daniel de las Heras, and Matthias Schmidt

From normal diffusion to superdiffusion: Photothermal heating of plasmonic core-shell microgels *(12 pages)* 052605
Nico Carl, Julian Sindram, Markus Gallei, Stefan U. Egelhaaf, and Matthias Karg

Coupling of long-wavelength density fluctuations to orientations in cellulose nanocrystal suspensions under external fields *(11 pages)* 052606
Kyongok Kang, Pascal Bertsch, and Peter Fischer

Two-step relaxation and the breakdown of the Stokes-Einstein relation in glass-forming liquids *(8 pages)* 052607
Baicheng Mei, Yuyuan Lu, Lijia An, and Zhen-Gang Wang

Tuning and jamming reduced to their minima *(6 pages)* 052608
Miguel Ruiz-García, Andrea J. Liu, and Eleni Katifori

Seeding approach to bubble nucleation in superheated Lennard-Jones fluids *(9 pages)* 052609
P. Rosales-Pelaez, M. I. Garcia-Cid, C. Valeriani, C. Vega, and E. Sanz

Ramifications of disorder on active particles in one dimension *(14 pages)* 052610
Ydan Ben Dor, Eric Woillez, Yariv Kafri, Mehran Kardar, and Alexandre P. Solon

Liquid Crystals

Uniform distortions and generalized elasticity of liquid crystals *(12 pages)* 052701
Epifanio G. Virga

Chiral nematic liquid crystals in torus-shaped and cylindrical cavities *(8 pages)* 052702
Charlie R. Wand and Martin A. Bates

Helicoids in chiral liquid crystals under external fields *(12 pages)* 052703
G. De Matteis, L. Martina, C. Naya, and V. Turco

Elucidation of the de Vries behavior in terms of the orientational order parameter, apparent tilt angle, and field-induced tilt angle for smectic liquid crystals by polarized infrared spectroscopy *(11 pages)* 052704
Neelam Yadav, V. Swaminathan, V. P. Panov, R. Dhar, and J. K. Vij

(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 100, NUMBER 5 NOVEMBER 2019

Films and Interfaces

Microscopic determination of correlations in the fluid interfacial region in the presence of liquid-gas asymmetry *(10 pages)* 052801
A. O. Parry and C. Rascón

Slope selection in unstable multilayer growth in 1 + 1 dimensions: Step flow models with downward funneling *(17 pages)* 052802
Ian Johnson, Christian Ratsch, Frederic Gibou, and Dionisios Margetis

Enhanced fluctuation for pinned surface nanobubbles *(6 pages)* 052803
Zhenjiang Guo and Xianren Zhang

Hierarchical crack patterns of metal films sputter deposited on soft elastic substrates *(10 pages)* 052804
Senjiang Yu, Long Ma, Linghui He, and Yong Ni

Two-step unconventional protocol for epitaxial growth in one dimension with hindered reactions *(13 pages)* 052805
Julián A. Sánchez, Diego Luis González, and T. L. Einstein

Granular Materials

Inhomogeneous cooling state of a strongly confined granular gas at low density *(13 pages)* 052901
J. Javier Brey, M. I. García de Soria, and P. Maynar

Granular segregation induced by a moving subsurface blade *(10 pages)* 052902
Vidushi Dwivedi, Julio M. Ottino, Richard M. Lueptow, and Paul B. Umbanhowar

Random sequential adsorption of particles with tetrahedral symmetry *(8 pages)* 052903
Piotr Kubala, Michał Cieśla, and Robert M. Ziff

Solid Mechanics

System-size-dependent avalanche statistics in the limit of high disorder *(9 pages)* 053001
Viktória Kádár and Ferenc Kun

Tantalum strength at extreme strain rates from impact-driven Richtmyer-Meshkov instabilities *(13 pages)* 053002
Michael B. Prime, William T. Buttler, Saryu J. Fensin, David R. Jones, Justin L. Brown, Robert S. King, Ruben Manzanares, Daniel T. Martinez, John I. Martinez, Jeremy R. Payton, and Derek W. Schmidt

Birth and decay of tensional wrinkles in hyperelastic sheets *(10 pages)* 053003
Andreea Panaitescu, Meng Xin, Benny Davidovitch, Julien Chopin, and Arshad Kudrolli

Intermediate asymptotics on dynamical impact of solid sphere on militextured surface *(7 pages)* 053004
Hirokazu Maruoka

Isomorph invariance of dynamics of sheared glassy systems *(15 pages)* 053005
Yonglun Jiang, Eric R. Weeks, and Nicholas P. Bailey

Fluid Dynamics

Energy and enstrophy spectra and fluxes for the inertial-dissipation range of two-dimensional turbulence *(10 pages)* 053101
Akanksha Gupta, Rohith Jayaram, Anando G. Chaterjee, Shubhadeep Sadhukhan, Ravi Samtaney, and Mahendra K. Verma

(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 100, NUMBER 5** **NOVEMBER 2019**

Nanocatalytic chemohydrodynamic instability: Deposition effects *(9 pages)* 053102
B. Dastvareh, J. Azaiez, and P. A. Tsai

Lagrangian coherent sets in turbulent Rayleigh-Bénard convection *(15 pages)* 053103
Christiane Schneide, Martin Stahn, Ambrish Pandey, Oliver Junge, Péter Koltai, Kathrin Padberg-Gehle, and Jörg Schumacher

Stability of a jet moving in a rectangular microchannel *(12 pages)* 053104
M. G. Cabezas, M. A. Herrada, and José M. Montanero

Determination of energy flux rate in homogeneous ferrohydrodynamic turbulence using two-point statistics *(6 pages)* 053105
Sukhdev Mouraya and Supratik Banerjee

Harmonic and subharmonic waves on the surface of a vibrated liquid drop *(12 pages)* 053106
Ivan S. Maksymov and Andrey Pototsky

Dynamics of two-dimensional flow around a circular cylinder with flexible filaments attached *(10 pages)* 053107
Jian Deng, Xuerui Mao, and Fangfang Xie

Two jets during the impact of viscous droplets onto a less-viscous liquid pool *(9 pages)* 053108
Quan Ding, Tianyou Wang, and Zhizhao Che

Interfacial dynamics and pinch-off singularities for axially symmetric Darcy flow *(14 pages)* 053109
Liam C. Morrow, Michael C. Dallaston, and Scott W. McCue

Generation of bursting magnetic fields by nonperiodic torsional flows *(11 pages)* 053110
Juan Sánchez Umbría and Marta Net

Evolution of Gaussian wave packets in capillary jets *(15 pages)* 053111
F. J. García, H. González, F. J. Gómez-Aguilar, A. A. Castrejón-Pita, and J. R. Castrejón-Pita

Plasma Physics

Negative entropy-production rate in Rayleigh-Bénard convection in two-dimensional Yukawa liquids *(9 pages)* 053201
Pawandeep Kaur and Rajaraman Ganesh

Modeling and diagnostics for plasma discharge capillaries *(12 pages)* 053202
A. Curcio, F. Bisesto, G. Costa, A. Biagioni, M. P. Anania, R. Pompili, M. Ferrario, and M. Petrarca

Spatiotemporal visualization of the terahertz emission during high-power laser-matter interaction *(7 pages)* 053203
A. Gopal, A. Woldegeorgis, S. Herzer, and M. Almassarani

Modeling terahertz emission from the target rear side during intense laser-solid interactions *(10 pages)* 053204
A. Woldegeorgis, S. Herzer, M. Almassarani, S. Marathapalli, and A. Gopal

Ultrafast wave-particle energy transfer in the collapse of standing whistler waves *(10 pages)* 053205
Takayoshi Sano, Masayasu Hata, Daiki Kawahito, Kunioki Mima, and Yasuhiko Sentoku

Magnetosonic shock waves in magnetized quantum plasma with the evolution of spin-up and spin-down electrons *(11 pages)* 053206
Zakia Rahim, Muhammad Adnan, and Anisa Qamar

(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 100, NUMBER 5 NOVEMBER 2019

High-quality high-order harmonic generation through preplasma truncation *(8 pages)* 053207
B. Y. Li, F. Liu, M. Chen, Z. Y. Chen, X. H. Yuan, S. M. Weng, T. Jin, S. G. Rykovanov, J. W. Wang, Z. M. Sheng, and J. Zhang

Computational Physics

Time propagation of the coupled Maxwell and Kohn-Sham equations using the Riemann-Silberstein formalism *(14 pages)* 053301
Cody Covington, Daniel Kidd, Haley Buckner, Heiko Appel, and Kálmán Varga

Fast logarithmic Fourier-Laplace transform of nonintegrable functions *(13 pages)* 053302
Johannes Lang and Bernhard Frank

Fifth-order finite-difference scheme for Fokker-Planck equations with drift-admitting jumps *(7 pages)* 053303
Yaming Chen and Xiaogang Deng

Thermodynamic consistency of a pseudopotential lattice Boltzmann fluid with interface curvature *(21 pages)* 053304
Jingwei Huang, Xiaolong Yin, and John Killough

Unfolding a quantum master equation into a system of real-valued equations: Computationally effective expansion over the basis of SU(*N*) generators *(9 pages)* 053305
A. Liniov, I. Meyerov, E. Kozinov, V. Volokitin, I. Yusipov, M. Ivanchenko, and S. Denisov

Nonintrusive reduced order modeling framework for quasigeostrophic turbulence *(25 pages)* 053306
Sk. M. Rahman, S. Pawar, O. San, A. Rasheed, and T. Iliescu

Confinement effects on the dynamics of a rigid particle in a nanochannel *(17 pages)* 053307
Alberto Gubbiotti, Mauro Chinappi, and Carlo Massimo Casciola

Spectral Galerkin solver for intense beam Vlasov equilibria in nonlinear constant focusing channels *(9 pages)* . . . 053308
Chad E. Mitchell, Robert D. Ryne, and Kilean Hwang

Noise can speed Markov chain Monte Carlo estimation and quantum annealing *(18 pages)* 053309
Brandon Franzke and Bart Kosko

Optimizing performance of metamaterial wormhole superabsorbers *(10 pages)* 053310
Hugo R. L. Ferreira, Nuno G. B. Brás, and Stanislav I. Maslovski

Taming a nonconvex landscape with dynamical long-range order: Memcomputing Ising benchmarks *(9 pages)* . . . 053311
Forrest Sheldon, Fabio L. Traversa, and Massimiliano Di Ventra

Calculation of tensorial flow properties on pore level: Exploring the influence of boundary conditions on the permeability of three-dimensional stochastic reconstructions *(16 pages)* 053312
Kirill M. Gerke, Marina V. Karsanina, and Regina Katsman

Implementation of contact angles in pseudopotential lattice Boltzmann simulations with curved boundaries *(12 pages)* 053313
Q. Li, Y. Yu, and Kai H. Luo

Improved algorithm for estimating pore size distribution from pore space images of porous media *(9 pages)* 053314
Shuaibing Song, Qile Ding, and Jingna Wei

High-order acoustic vortex field generation based on a metasurface *(7 pages)* 053315
Zhongyi Guo, Hongjun Liu, Hong Zhou, Keya Zhou, Shaomeng Wang, Fei Shen, Yubin Gong, Jun Gao, Shutian Liu, and Kai Guo

(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 100, NUMBER 5** **NOVEMBER 2019**

Nested multiresolution hierarchical simulated annealing algorithm for porous media reconstruction *(21 pages)* . . . 053316
Laurent Lemmens, Bart Rogiers, Diederik Jacques, Marijke Huysmans, Rudy Swennen, Janos L. Urai, Guillaume Desbois, and Eric Laloy

Origin of spurious oscillations in lattice Boltzmann simulations of oscillatory noncontinuum gas flows *(9 pages)* 053317
Yong Shi, Daniel R. Ladiges, and John E. Sader

COMMENTS

Comment on "Acoustic deformation for the extraction of mechanical properties of lipid vesicle populations" *(2 pages)* 057001
Philip L. Marston

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).