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 96, NUMBER 5
PARTS A AND B

CONTENTS

NOVEMBER 2017

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)–052316, and Part B pages 052401–059903(E).

PART A

RAPID COMMUNICATIONS

Statistical Physics

Entropy, specific heat, susceptibility, and Rushbrooke inequality in percolation *(5 pages)* . . . . . 050101(R)
M. K. Hassan, D. Alam, Z. I. Jitu, and M. M. Rahman

Direct verification of the fluctuation-dissipation relation in viscously coupled oscillators *(5 pages)* . . . . . 050102(R)
Shuvojit Paul, Abhrajit Laskar, Rajesh Singh, Basudev Roy, R. Adhikari, and Ayan Banerjee

From quenched disorder to continuous time random walk *(5 pages)* . . . . . 050103(R)
Stanislav Burov

Networks and Complex Systems

Optimal paths on the road network as directed polymers *(5 pages)* . . . . . 050301(R)
A. P. Solon, G. Bunin, S. Chu, and M. Kardar

Colloids, Complex Fluids, and Active Matter

Discontinuous fluidization transition in time-correlated assemblies of actively deforming particles *(5 pages)* . . . . . 050601(R)
Elsen Tjhung and Ludovic Berthier

Granular Materials

Sidewall-friction-driven ordering transition in granular channel flows: Implications for granular rheology *(5 pages)* . . . . . 050901(R)
Sandip Mandal and D. V. Khakhar

Computational Physics

Exploring cluster Monte Carlo updates with Boltzmann machines *(7 pages)* . . . . . 051301(R)
Lei Wang

Copyright 2017 by American Physical Society

(Continued)

2470-0045(201711)96:5:A;1-D

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 96, NUMBER 5 NOVEMBER 2017

ARTICLES

Statistical Physics

Inherent stress correlations in a quiescent two-dimensional liquid: Static analysis including finite-size effects *(13 pages)* 052101
Anaël Lemaître

Dynamic scaling in the two-dimensional Ising spin glass with normal-distributed couplings *(9 pages)* 052102
Na Xu, Kai-Hsin Wu, Shanon J. Rubin, Ying-Jer Kao, and Anders W. Sandvik

Optimal dephasing for ballistic energy transfer in disordered linear chains *(10 pages)* 052103
Yang Zhang, G. Luca Celardo, Fausto Borgonovi, and Lev Kaplan

Field dynamics inference via spectral density estimation *(10 pages)* 052104
Philipp Frank, Theo Steininger, and Torsten A. Enßlin

Resonances in a periodically driven bosonic system *(10 pages)* 052105
Anton Quelle and Cristiane Morais Smith

Experimental realization of a minimal microscopic heat engine *(8 pages)* 052106
Aykut Argun, Jalpa Soni, Lennart Dabelow, Stefano Bo, Giuseppe Pesce, Ralf Eichhorn, and Giovanni Volpe

Thermodynamic cost for classical counterdiabatic driving *(5 pages)* 052107
Alessandro Bravetti and Diego Tapias

Constraint percolation on hyperbolic lattices *(10 pages)* 052108
Jorge H. Lopez and J. M. Schwarz

Entropic nonadditivity, H theorem, and nonlinear Klein-Kramers equations *(7 pages)* 052109
M. A. F. dos Santos and E. K. Lenzi

Magnetization plateau as a result of the uniform and gradual electron doping in a coupled spin-electron double-tetrahedral chain *(16 pages)* 052110
Lucia Gálisová

Inferring low-dimensional microstructure representations using convolutional neural networks *(12 pages)* 052111
Nicholas Lubbers, Turab Lookman, and Kipton Barros

Exact solution of the hidden Markov processes *(4 pages)* 052112
David B. Saakian

Crossover between liquidlike and gaslike behavior in CH_4 at 400 K *(8 pages)* 052113
D. Smith, M. A. Hakeem, P. Parisiades, H. E. Maynard-Casely, D. Foster, D. Eden, D. J. Bull, A. R. L. Marshall, A. M. Adawi, R. Howie, A. Sapelkin, V. V. Brazhkin, and J. E. Proctor

Stochastic thermodynamics of quantum maps with and without equilibrium *(12 pages)* 052114
Felipe Barra and Cristóbal Lledó

Power output for a nonlinear Brownian machine *(8 pages)* 052115
Lucianno A. C. A. Defaveri, Welles A. M. Morgado, and Sílvio M. Duarte Queirós

Noise-driven current reversal and stabilization in the tilted ratchet potential subject to tempered stable Lévy noise *(10 pages)* 052116
Mathew L. Zuparic, Alexander C. Kalloniatis, and Dale O. Roberts

(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 96, NUMBER 5** **NOVEMBER 2017**

Dynamical transition on the periodic Lorentz gas: Stochastic and deterministic approaches *(12 pages)* 052117
Rafael Mateus Feliczaki, Eduardo Vicentini, and Pedro Pablo González-Borrero

Fluctuating hydrodynamics, current fluctuations, and hyperuniformity in boundary-driven open quantum chains *(12 pages)* 052118
Federico Carollo, Juan P. Garrahan, Igor Lesanovsky, and Carlos Pérez-Espigares

Universal features of cluster numbers in percolation *(7 pages)* 052119
Stephan Mertens, Iwan Jensen, and Robert M. Ziff

Stochastic thermodynamics of periodically driven systems: Fluctuation theorem for currents and unification of two classes *(11 pages)* 052120
Somrita Ray and Andre C. Barato

Roughness-enhanced transport in a tilted ratchet driven by Lévy noise *(9 pages)* 052121
Yongge Li, Yong Xu, and Jürgen Kurths

Entropy production and volume contraction in thermostated Hamiltonian dynamics *(4 pages)* 052122
John D. Ramshaw

Confined sandpile in two dimensions: Percolation and singular diffusion *(7 pages)* 052123
R. S. Pires, A. A. Moreira, H. A. Carmona, and J. S. Andrade, Jr.

Quantum fluctuations of entropy production for fermionic systems in the Landauer-Büttiker state *(10 pages)* 052124
Mihail Mintchev, Luca Santoni, and Paul Sorba

Kibble-Zurek scaling of the irreversible entropy production *(6 pages)* 052125
Sebastian Deffner

Enabling the self-contained refrigerator to work beyond its limits by filtering the reservoirs *(10 pages)* 052126
Zi-chen He, Xin-yun Huang, and Chang-shui Yu

Mapping of the Bak, Tang, and Wiesenfeld sandpile model on a two-dimensional Ising-correlated percolation lattice to the two-dimensional self-avoiding random walk *(11 pages)* 052127
J. Cheraghalizadeh, M. N. Najafi, H. Dashti-Naserabadi, and H. Mohammadzadeh

Adiabatic cooling processes in frustrated magnetic systems with pyrochlore structure *(10 pages)* 052128
E. Jurčišinová and M. Jurčišin

Geometric phaselike effects in a quantum heat engine *(7 pages)* 052129
Sajal Kumar Giri and Himangshu Prabal Goswami

Partition function zeros of the p-state clock model in the complex temperature plane *(7 pages)* 052130
Dong-Hee Kim

Kinetics and thermodynamics of a driven open quantum system *(9 pages)* 052132
Juzar Thingna, Felipe Barra, and Massimiliano Esposito

Anomalies in the equilibrium and nonequilibrium properties of correlated ions in complex molecular environments *(22 pages)* 052133
Sathiya Mahakrishnan, Subrata Chakraborty, and Amrendra Vijay

Persistent Sinai-type diffusion in Gaussian random potentials with decaying spatial correlations *(14 pages)* 052134
Igor Goychuk, Vasyl O. Kharchenko, and Ralf Metzler

(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 96, NUMBER 5** **NOVEMBER 2017**

Stochastic thermodynamics for a periodically driven single-particle pump *(7 pages)* 052135
Alexandre Rosas, Christian Van den Broeck, and Katja Lindenberg

Universal Gaussian behavior of driven lattice gases at short times *(12 pages)* 052136
Valerio Volpati, Urna Basu, Sergio Caracciolo, and Andrea Gambassi

Stationary uphill currents in locally perturbed zero-range processes *(13 pages)* 052137
Emilio N. M. Cirillo and Matteo Colangeli

Detection of transition times from single-particle-tracking trajectories *(5 pages)* 052138
Takuma Akimoto and Eiji Yamamoto

Response and correlation functions of nonlinear systems in equilibrium states *(7 pages)* 052139
Lubo Xu (续路波) and Lei Wang (王雷)

Transient subdiffusion from an Ising environment *(9 pages)* 052140
G. Muñoz-Gil, C. Charalambous, M. A. García-March, M. F. Garcia-Parajo, C. Manzo, M. Lewenstein, and A. Celi

Current quantization and fractal hierarchy in a driven repulsive lattice gas *(7 pages)* 052141
Pietro Rotondo, Alessandro Luigi Sellerio, Pietro Glorioso, Sergio Caracciolo, Marco Cosentino Lagomarsino, and Marco Gherardi

Nonlinear Dynamics and Chaos

Direct determination approach for the multifractal detrending moving average analysis *(11 pages)* 052201
Hai-Chuan Xu, Gao-Feng Gu, and Wei-Xing Zhou

Delay-induced wave instabilities in single-species reaction-diffusion systems *(11 pages)* 052202
Andereas Otto, Jian Wang, and Günter Radons

Effect of the correlation between internal noise and external noise on logical stochastic resonance in bistable systems *(6 pages)* 052203
Lei Zhang, Wenbin Zheng, Fei Xie, and Aiguo Song

Extreme events in the forced Liénard system *(9 pages)* 052204
S. Leo Kingston, K. Thamilmaran, Pinaki Pal, Ulrike Feudel, and Syamal K. Dana

Mode locking in systems of globally coupled phase oscillators *(8 pages)* 052205
Sebastian Eydam and Matthias Wolfrum

Locality of interactions for planar memristive circuits *(6 pages)* 052206
F. Caravelli

Dispersion of the intrinsic neuronal periods affects the relationship of the entrainment range to the coupling strength in the suprachiasmatic nucleus *(9 pages)* 052207
Changgui Gu, Huijie Yang, and Man Wang

Flat bands and compactons in mechanical lattices *(22 pages)* 052208
Nathan Perchikov and O. V. Gendelman

Asymmetric couplings enhance the transition from chimera state to synchronization *(9 pages)* 052209
Changhai Tian, Hongjie Bi, Xiyun Zhang, Shuguang Guan, and Zonghua Liu

(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 96, NUMBER 5** **NOVEMBER 2017**

Oscillation collapse in coupled quantum van der Pol oscillators *(7 pages)* 052210
Kenta Ishibashi and Rina Kanamoto

Finite-range Coulomb gas models of banded random matrices and quantum kicked rotors *(7 pages)* 052211
Akhilesh Pandey, Avanish Kumar, and Sanjay Puri

Statistical independence of the initial conditions in chaotic mixing *(12 pages)* 052212
J. M. García de la Cruz, J. C. Vassilicos, and L. Rossi

Recurrence due to periodic multisoliton fission in the defocusing nonlinear Schrödinger equation *(11 pages)* 052213
Guo Deng, Sitai Li, Gino Biondini, and Stefano Trillo

Multiplexing topologies and time scales: The gains and losses of synchrony *(6 pages)* 052214
Sergey Makovkin, Anil Kumar, Alexey Zaikin, Sarika Jalan, and Mikhail Ivanchenko

Detecting the chaotic nature in a transitional boundary layer using symbolic information-theory quantifiers *(10 pages)* 052215
Wen Zhang, Peiqing Liu, Hao Guo, and Jinjun Wang

Transition to synchrony in degree-frequency correlated Sakaguchi-Kuramoto model *(8 pages)* 052216
Prosenjit Kundu, Pitambar Khanra, Chittaranjan Hens, and Pinaki Pal

Crossover between the Gaussian orthogonal ensemble, the Gaussian unitary ensemble, and Poissonian statistics *(6 pages)* 052217
Frank Schweiner, Jeanine Laturner, Jörg Main, and Günter Wunner

Nonreciprocal wave transmission through an extended discrete nonlinear Schrödinger dimer *(9 pages)* 052218
Muhammad Abdul Wasay

Speed-of-light pulses in the massless nonlinear Dirac equation with a potential *(10 pages)* 052219
Niurka R. Quintero, Franz G. Mertens, Fred Cooper, Avadh Saxena, and A. R. Bishop

Directionality indices: Testing information transfer with surrogate correction *(13 pages)* 052220
Beth Jelfs and Rosa H. M. Chan

Correlations in eigenfunctions of quantum chaotic systems with sparse Hamiltonian matrices *(8 pages)* 052221
Jiaozi Wang and Wen-ge Wang

Rayleigh-Taylor instability and vortex rings in coupled Gross-Pitaevskii equations *(6 pages)* 052222
Hidetsugu Sakaguchi and Hiroomi Chono

Nonlinear dynamics of a buoyancy-induced turbulent fire *(7 pages)* 052223
Kazushi Takagi, Hiroshi Gotoda, Isao T. Tokuda, and Takaya Miyano

Pathways to equilibrium orientation fluctuations in finite stripe-forming systems *(14 pages)* 052224
Christian Riesch, Günter Radons, and Robert Magerle

Networks and Complex Systems

Dynamics of functional failures and recovery in complex road networks *(16 pages)* 052301
Xianyuan Zhan, Satish V. Ukkusuri, and P. Suresh C. Rao

Sampling of temporal networks: Methods and biases *(9 pages)* 052302
Luis E. C. Rocha, Naoki Masuda, and Petter Holme

(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 96, NUMBER 5** **NOVEMBER 2017**

Beyond the faster-is-slower effect *(9 pages)* 052303
I. M. Sticco, F. E. Cornes, G. A. Frank, and C. O. Dorso

Finite connected components in infinite directed and multiplex networks with arbitrary degree distributions *(12 pages)* 052304
Ivan Kryven

Stochastic dynamics of genetic broadcasting networks *(9 pages)* 052305
Davit A. Potoyan and Peter G. Wolynes

Population equations for degree-heterogenous neural networks *(14 pages)* 052306
M. Kähne, I. M. Sokolov, and S. Rüdiger

Hierarchy measurement for modeling network dynamics under directed attacks *(8 pages)* 052307
M. Rubinson, N. Levit-Binnun, A. Peled, J. Naim-Feil, D. Freche, and E. Moses

Cusps enable line attractors for neural computation *(7 pages)* 052308
Zhuocheng Xiao, Jiwei Zhang, Andrew T. Sornborger, and Louis Tao

Fast and slow domino regimes in transient network dynamics *(6 pages)* 052309
Peter Ashwin, Jennifer Creaser, and Krasimira Tsaneva-Atanasova

Spectral signatures of activity-dependent neural feedback in the corticothalamic system *(13 pages)* 052310
N. Roy, P. Sanz-Leon, and P. A. Robinson

Hierarchical benchmark graphs for testing community detection algorithms *(9 pages)* 052311
Zhao Yang, Juan I. Perotti, and Claudio J. Tessone

Evolving power grids with self-organized intermittent strain releases: An analogy with sandpile models and earthquakes *(12 pages)* 052312
Ho Fai Po, Chi Ho Yeung, An Zeng, and K. Y. Michael Wong

Finding multiple core-periphery pairs in networks *(19 pages)* 052313
Sadamori Kojaku and Naoki Masuda

Unified mean-field framework for susceptible-infected-susceptible epidemics on networks, based on graph partitioning and the isoperimetric inequality *(18 pages)* 052314
K. Devriendt and P. Van Mieghem

Zealotry effects on opinion dynamics in the adaptive voter model *(10 pages)* 052315
Pascal P. Klamser, Marc Wiedermann, Jonathan F. Donges, and Reik V. Donner

Infection dynamics on spatial small-world network models *(7 pages)* 052316
Bryan Iotti, Alberto Antonioni, Seth Bullock, Christian Darabos, Marco Tomassini, and Mario Giacobini

PART B

Biological Physics

Particle transport across a channel via an oscillating potential *(7 pages)* 052401
Yizhou Tan, Jannes Gladrow, Ulrich F. Keyser, Leonardo Dagdug, and Stefano Pagliara

Rigidity-induced scale invariance in polymer ejection from capsid *(10 pages)* 052402
R. P. Linna, P. M. Suhonen, and J. Piili

(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 96, NUMBER 5** **NOVEMBER 2017**

Spreading of nonmotile bacteria on a hard agar plate: Comparison between agent-based and stochastic simulations *(9 pages)* 052403
Navdeep Rana, Pushpita Ghosh, and Prasad Perlekar

Morphodynamics of a growing microbial colony driven by cell death *(8 pages)* 052404
Pushpita Ghosh and Herbert Levine

Three-body interactions improve contact prediction within direct-coupling analysis *(10 pages)* 052405
Michael Schmidt and Kay Hamacher

Surface deformation during an action potential in pearled cells *(8 pages)* 052406
Matan Mussel, Christian Fillafer, Gal Ben-Porath, and Matthias F. Schneider

Synchrony-induced modes of oscillation of a neural field model *(12 pages)* 052407
Jose M. Esnaola-Acebes, Alex Roxin, Daniele Avitabile, and Ernest Montbrió

Minimal model of directed cell motility on patterned substrates *(11 pages)* 052408
Matthew S. Mizuhara, Leonid Berlyand, and Igor S. Aranson

Forces in inhomogeneous open active-particle systems *(13 pages)* 052409
Nitzan Razin, Raphael Voituriez, Jens Elgeti, and Nir S. Gov

Theory of corticothalamic brain activity in a spherical geometry: Spectra, coherence, and correlation *(13 pages)* 052410
K. N. Mukta, J. N. MacLaurin, and P. A. Robinson

Twitching motility of bacteria with type-IV pili: Fractal walks, first passage time, and their consequences on microcolonies *(7 pages)* 052411
Konark Bisht, Stefan Klumpp, Varsha Banerjee, and Rahul Marathe

Physics behind the mechanical nucleosome positioning code *(15 pages)* 052412
Martijn Zuiddam, Ralf Everaers, and Helmut Schiessel

Polymers

Influence of topographically patterned angled guidelines on directed self-assembly of block copolymers *(13 pages)* 052501
Nathan Rebello, Vaidyanathan Sethuraman, Gregory Blachut, Christopher J. Ellison, C. Grant Willson, and Venkat Ganesan

Crystallization of finite-extensible nonlinear elastic Lennard-Jones coarse-grained polymers *(10 pages)* 052502
Julien Morthomas, Claudio Fusco, Zengqiang Zhai, Olivier Lame, and Michel Perez

Colloids, Complex Fluids, and Active Matter

Activity-driven changes in the mechanical properties of fire ant aggregations *(8 pages)* 052601
Michael Tennenbaum and Alberto Fernandez-Nieves

Perturbation theory for water with an associating reference fluid *(6 pages)* 052602
Bennett D. Marshall

Active nematic gels as active relaxing solids *(8 pages)* 052603
Stefano S. Turzi

Sound-mediated stable configurations for polystyrene particles *(6 pages)* 052604
Mudi Wang, Chunyin Qiu, Shenwei Zhang, Runzhou Han, Manzhu Ke, and Zhengyou Liu

(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 96, NUMBER 5** **NOVEMBER 2017**

Pressure and flow of exponentially self-correlated active particles *(9 pages)* 052605
Cato Sandford, Alexander Y. Grosberg, and Jean-François Joanny

Improved understanding of the acoustophoretic focusing of dense suspensions in a microchannel *(10 pages)* 052606
S. Karthick and A. K. Sen

Dynamics of a magnetic active Brownian particle under a uniform magnetic field *(12 pages)* 052607
Glenn C. Vidal-Urquiza and Ubaldo M. Córdova-Figueroa

Flow properties and hydrodynamic interactions of rigid spherical microswimmers *(10 pages)* 052608
Tapan Chandra Adhyapak and Sara Jabbari-Farouji

Modified mean-field theory of the magnetic properties of concentrated, high-susceptibility, polydisperse ferrofluids *(15 pages)* 052609
Anna Yu. Solovyova, Ekaterina A. Elfimova, Alexey O. Ivanov, and Philip J. Camp

Effective viscosity of a suspension of flagellar-beating microswimmers: Three-dimensional modeling *(8 pages)* 052610
Levan Jibuti, Walter Zimmermann, Salima Rafaï, and Philippe Peyla

Liquid Crystals

Electrically induced structure transition in nematic liquid crystal droplets with conical boundary conditions *(5 pages)* 052701
V. Yu. Rudyak, M. N. Krakhalev, V. S. Sutormin, O. O. Prishchepa, V. Ya. Zyryanov, J.-H. Liu, A. V. Emelyanenko, and A. R. Khokhlov

Effect of polymer network on thermodynamic stability and switching behavior of the smectic-C^*_α phase *(9 pages)* 052702
Magdalena Knapkiewicz, Mariola Sądej, Wojciech Kuczyński, and Adam Rachocki

Dielectric properties of liquid crystalline dimer mixtures exhibiting the nematic and twist-bend nematic phases *(10 pages)* 052703
Nina Trbojevic, Daniel J. Read, and Mamatha Nagaraj

Orientation-shape coupling between liquid crystal and membrane through the anchoring effect *(10 pages)* 052704
Shun Okushima and Toshihiro Kawakatsu

Laser-excited motion of liquid crystals confined in a microsized volume with a free surface *(10 pages)* 052705
A. V. Zakharov and P. V. Maslennikov

Films and Interfaces

Confinement effects in premelting dynamics *(10 pages)* 052801
Satyajit Pramanik and John S. Wettlaufer

Topological defects in two-dimensional orientation-field models for grain growth *(15 pages)* 052802
Bálint Korbuly, Mathis Plapp, Hervé Henry, James A. Warren, László Gránásy, and Tamás Pusztai

Extracting the equation of state of lattice gases from random sequential adsorption simulations by means of the Gibbs adsorption isotherm *(7 pages)* 052803
Shaghayegh Darjani, Joel Koplik, and Vincent Pauchard

Granular Materials

Energy nonequipartition in gas mixtures of inelastic rough hard spheres: The tracer limit *(9 pages)* 052901
Francisco Vega Reyes, Antonio Lasanta, Andrés Santos, and Vicente Garzó

(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 96, NUMBER 5** **NOVEMBER 2017**

☞ Local and global avalanches in a two-dimensional sheared granular medium *(13 pages)* 052902
Jonathan Barés, Dengming Wang, Dong Wang, Thibault Bertrand, Corey S. O'Hern, and Robert P. Behringer

Theory-based design of sintered granular composites triples three-phase boundary in fuel cells *(10 pages)* 052903
Shahar Amitai, Antonio Bertei, and Raphael Blumenfeld

Headward growth and branching in subterranean channels *(11 pages)* 052904
Arshad Kudrolli, Nikolay Ionkin, and Andreea Panaitescu

Subjamming transition in binary sphere mixtures *(11 pages)* 052905
Ishan Prasad, Christian Santangelo, and Gregory Grason

Analytical mesoscale modeling of aeolian sand transport *(15 pages)* 052906
Marc Lämmel and Klaus Kroy

Solid Mechanics

Role of matrix behavior in compressive fracture of bovine cortical bone *(10 pages)* 053001
Ashwij Mayya, Anuradha Banerjee, and R. Rajesh

Fluid-driven fracture propagation in heterogeneous media: Probability distributions of fracture trajectories *(10 pages)* 053002
David Santillán, Juan-Carlos Mosquera, and Luis Cueto-Felgueroso

Geometry and the onset of rigidity in a disordered network *(6 pages)* 053003
Mathijs F. J. Vermeulen, Anwesha Bose, Cornelis Storm, and Wouter G. Ellenbroek

Evolution of the pore size distribution in sheared binary glasses *(11 pages)* 053004
Nikolai V. Priezjev and Maxim A. Makeev

Thermodynamic theory of dislocation-enabled plasticity *(12 pages)* 053005
J. S. Langer

Fluid Dynamics

Instabilities of an annulus flow between rotating cylinders in a helical magnetic field *(11 pages)* 053101
Yurong Zhao, Jianjun Tao, and Xiangming Xiong

Flow instabilities due to the interfacial formation of surfactant–fatty acid material in a Hele-Shaw cell *(6 pages)* 053102
Zahra Niroobakhsh, Matthew Litman, and Andrew Belmonte

Numerical design of a T-shaped microfluidic device for deformability-based separation of elastic capsules and soft beads *(10 pages)* 053103
M. M. Villone, M. Trofa, M. A. Hulsen, and P. L. Maffettone

Interaction of a planar reacting shock wave with an isotropic turbulent vorticity field *(20 pages)* 053104
César Huete, Tai Jin, Daniel Martínez-Ruiz, and Kun Luo

Nonhelical turbulence and the inverse transfer of energy: A parameter study *(12 pages)* 053105
Johannes Reppin and Robi Banerjee

Shock-wave-like structures induced by an exothermic neutralization reaction in miscible fluids *(6 pages)* 053106
Dmitry Bratsun, Alexey Mizev, Elena Mosheva, and Konstantin Kostarev

(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 96, NUMBER 5** **NOVEMBER 2017**

Carpet cloak for water waves *(7 pages)* 053107
Zhenyu Wang, Chunyang Li, Razafizana Zatianina, Pei Zhang, and Yongqiang Zhang

Emergence of chaos in a viscous solution of rods *(4 pages)* 053108
Emmanuel L. C. VI M. Plan, Stefano Musacchio, and Dario Vincenzi

Front propagation in a regular vortex lattice: Dependence on the vortex structure *(20 pages)* 053109
E. Beauvier, S. Bodea, and A. Pocheau

Marangoni effect on small-amplitude capillary waves in viscous fluids *(10 pages)* 053110
Li Shen, Fabian Denner, Neal Morgan, Berend van Wachem, and Daniele Dini

Turbulent diffusion of chemically reacting flows: Theory and numerical simulations *(8 pages)* 053111
T. Elperin, N. Kleeorin, M. Liberman, A. N. Lipatnikov, I. Rogachevskii, and R. Yu

Deceleration of one-dimensional mixing by discontinuous mappings *(8 pages)* 053112
Hannah Kreczak, Rob Sturman, and Mark C. T. Wilson

Kinetic-contact-driven gigantic energy transfer in a two-dimensional Lennard-Jones fluid confined to a rotating pore *(12 pages)* 053113
Paweł Karbowniczek and Agnieszka Chrzanowska

Role of red cells and plasma composition on blood sessile droplet evaporation *(8 pages)* 053114
Luca Lanotte, Didier Laux, Benoît Charlot, and Manouk Abkarian

Nonlinear and subharmonic stability analysis in film-driven morphological patterns *(14 pages)* 053115
Matteo Bernard Bertagni and Carlo Camporeale

Exact relations for energy transfer in self-gravitating isothermal turbulence *(8 pages)* 053116
Supratik Banerjee and Alexei G. Kritsuk

Plasma Physics

Time-dependent Tonks-Langmuir model is unstable *(10 pages)* 053201
T. E. Sheridan and S. D. Baalrud

Experimental determination of phase transitions by means of configurational entropies in finite Yukawa balls *(8 pages)* 053202
Matthias Mulsow and André Melzer

Deciphering the kinetic structure of multi-ion plasma shocks *(6 pages)* 053203
Brett D. Keenan, Andrei N. Simakov, Luis Chacón, and William T. Taitano

Parametric pulse amplification by acoustic quasimodes in electron-positron plasma *(7 pages)* 053204
F. Schluck, G. Lehmann, and K. H. Spatschek

Alternative derivation of exact law for compressible and isothermal magnetohydrodynamics turbulence *(8 pages)* 053205
N. Andrés and F. Sahraoui

Isochoric, isobaric, and ultrafast conductivities of aluminum, lithium, and carbon in the warm dense matter regime *(15 pages)* 053206
M. W. C. Dharma-wardana, D. D. Klug, L. Harbour, and Laurent J. Lewis

(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 96, NUMBER 5 NOVEMBER 2017

Plasma q-plate for generation and manipulation of intense optical vortices *(7 pages)* 053207
Kenan Qu, Qing Jia, and Nathaniel J. Fisch

Viscosity of two-dimensional strongly coupled dusty plasma modified by a perpendicular magnetic field *(8 pages)* 053208
Yan Feng, Wei Lin, and M. S. Murillo

Effects of group velocity and multiplasmon resonances on the modulation of Langmuir waves in a degenerate plasma *(12 pages)* 053209
Amar P. Misra, Debjani Chatterjee, and Gert Brodin

Ideal radiation source for plasma spectroscopy generated by laser ablation *(6 pages)* 053210
Jörg Hermann, David Grojo, Emanuel Axente, Christoph Gerhard, Miloš Burger, and Valentin Craciun

℘ Inverse Bremsstrahlung current drive *(7 pages)* 053211
Vadim R. Munirov and Nathaniel J. Fisch

Computational Physics

Improved locality of the phase-field lattice-Boltzmann model for immiscible fluids at high density ratios *(14 pages)* 053301
Abbas Fakhari, Travis Mitchell, Christopher Leonardi, and Diogo Bolster

Multichannel scattering problem with a nonseparable angular part as a boundary-value problem *(8 pages)* 053302
Shahpoor Saeidian and Vladimir S. Melezhik

℘ Hypothesis testing of scientific Monte Carlo calculations *(6 pages)* 053303
Markus Wallerberger and Emanuel Gull

Lattice Boltzmann model capable of mesoscopic vorticity computation *(21 pages)* 053304
Cheng Peng, Zhaoli Guo, and Lian-Ping Wang

Discrete Boltzmann modeling of Rayleigh-Taylor instability in two-component compressible flows *(12 pages)* . . . 053305
Chuandong Lin, Aiguo Xu, Guangcai Zhang, Kai Hong Luo, and Yingjun Li

Relaxation, thermalization, and Markovian dynamics of two spins coupled to a spin bath *(17 pages)* 053306
H. De Raedt, F. Jin, M. I. Katsnelson, and K. Michielsen

Consistent forcing scheme in the cascaded lattice Boltzmann method *(8 pages)* 053307
Linlin Fei and Kai Hong Luo

Benchmarking of three-dimensional multicomponent lattice Boltzmann equation *(6 pages)* 053308
X. Xu, K. Burgin, M. A. Ellis, and I. Halliday

Orbitals for classical arbitrary anisotropic colloidal potentials *(11 pages)* 053309
Martin Girard, Trung Dac Nguyen, and Monica Olvera de la Cruz

Corrected simulations for one-dimensional diffusion processes with naturally occurring boundaries *(14 pages)* . . . 053310
Hassan Shafiey, Xinjun Gan, and David Waxman

Scalable and fast heterogeneous molecular simulation with predictive parallelization schemes *(13 pages)* 053311
Horacio V. Guzman, Christoph Junghans, Kurt Kremer, and Torsten Stuehn

Single-cone finite-difference schemes for the (2+1)-dimensional Dirac equation in general electromagnetic textures *(15 pages)* 053312
Walter Pötz

(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 96, NUMBER 5** **NOVEMBER 2017**

Computation of the asymptotic states of modulated open quantum systems with a numerically exact realization of the quantum trajectory method *(10 pages)* 053313
V. Volokitin, A. Liniov, I. Meyerov, M. Hartmann, M. Ivanchenko, P. Hänggi, and S. Denisov

COMMENTS

Comment on "Troublesome aspects of the Renyi-MaxEnt treatment" *(2 pages)* 056101
Thomas Oikonomou and G. Baris Bagci

Reply to "Comment on 'Troublesome aspects of the Renyi-MaxEnt treatment' " *(3 pages)* 056102
A. Plastino, M. C. Rocca, and F. Pennini

ERRATA

Publisher's Note: Metal nanospheres under intense continuous-wave illumination: A unique case of nonperturbative nonlinear nanophotonics [Phys. Rev. E **96**, 012212 (2017)] *(1 page)* . . . . . 059901(E)
I. Gurwich and Y. Sivan

Erratum: Aging Wiener-Khinchin theorem and critical exponents of $1/f^{\beta}$ noise [Phys. Rev. E **94**, 052130 (2016)] *(1 page)* . . . . . 059902(E)
N. Leibovich, A. Dechant, E. Lutz, and E. Barkai

Publisher's Note: Discovering phases, phase transitions, and crossovers through unsupervised machine learning: A critical examination [Phys. Rev. E **95**, 062122 (2017)] *(1 page)* . . . . . 059903(E)
Wenjian Hu, Rajiv R. P. Singh, and Richard T. Scalettar