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 4 PARTS A AND B — ***CONTENTS*** — **APRIL 2017**

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 040201(R)–042324, and Part B pages 042401–049902(E).

PART A

RAPID COMMUNICATIONS

Nonlinear Dynamics and Chaos

Collective dynamics out of thermodynamic equilibrium *(5 pages)* . . . . . 040201(R)
Gordon Robb and Antonio Politi

Networks and Complex Systems

Optimization of synchronizability in multiplex networks by rewiring one layer *(5 pages)* . . . . . 040301(R)
Sanjiv K. Dwivedi, Murilo S. Baptista, and Sarika Jalan

Biological Physics

Effect of fractional blood flow on plasma skimming in the microvasculature *(6 pages)* . . . . . 040401(R)
Jiho Yang, Sung Sic Yoo, and Tae-Rin Lee

Plasma Physics

Instability onset and scaling laws of an auto-oscillating turbulent flow in a complex plasma *(5 pages)* . . . . . 041201(R)
M. Schwabe, S. Zhdanov, and C. Räth

ARTICLES

Statistical Physics

Long-time predictability in disordered spin systems following a deep quench *(11 pages)* 042101
J. Ye, R. Gheissari, J. Machta, C. M. Newman, and D. L. Stein

Minimum energetic cost to maintain a target nonequilibrium state *(6 pages)* 042102
Jordan M. Horowitz, Kevin Zhou, and Jeremy L. England

Information thermodynamics for feedback processes with the appearance of overshooting *(8 pages)* 042103
Chulan Kwon

Quantum resonant activation *(13 pages)* 042104
Luca Magazzù, Peter Hänggi, Bernardo Spagnolo, and Davide Valenti

Copyright 2017 by American Physical Society

2470-0045(201704)95:4:A;1-7

(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 4** **APRIL 2017**

Nonequilibrium critical dynamics of the two-dimensional Ashkin-Teller model at the Baxter line *(14 pages)* 042105
H. A. Fernandes, R. da Silva, A. A. Caparica, and J. R. Drugowich de Felício

Tricritical behavior of nonequilibrium Ising spins in fluctuating environments *(7 pages)* 042106
Jong-Min Park and Jae Dong Noh

Ising spin glasses in two dimensions: Universality and nonuniversality *(13 pages)* 042107
P. H. Lundow and I. A. Campbell

Thermal conductance of a two-level atom coupled to two quantum harmonic oscillators *(5 pages)* 042108
Pedro H. Guimarães, Gabriel T. Landi, and Mário J. de Oliveira

Criteria for infinite avalanches in the zero-temperature nonequilibrium random-field Ising model on a Bethe lattice *(5 pages)* 042109
Prabodh Shukla and Diana Thongjaomayum

Interpolation between low and high temperatures of the specific heat for spin systems *(12 pages)* 042110
Heinz-Jürgen Schmidt, Andreas Hauser, Andre Lohmann, and Johannes Richter

Quantum entanglement and temperature fluctuations *(7 pages)* 042111
Kamel Ourabah and Mouloud Tribeche

Percolation in three-dimensional fracture networks for arbitrary size and shape distributions *(14 pages)* 042112
J.-F. Thovert, V. V. Mourzenko, and P. M. Adler

Heat transport along a chain of coupled quantum harmonic oscillators *(4 pages)* 042113
Mário J. de Oliveira

Modeling and statistical analysis of non-Gaussian random fields with heavy-tailed distributions *(9 pages)* 042114
Mohsen Ghasemi Nezhadhaghighi and Abbas Nakhlband

Quantum corrections of the truncated Wigner approximation applied to an exciton transport model *(13 pages)* . . . 042115
Anton Ivanov and Heinz-Peter Breuer

Nonequilibrium nature of adaptation in bacterial chemotaxis: A fluctuation-dissipation theorem approach *(6 pages)* 042116
Chen Jia

Restoration of dimensional reduction in the random-field Ising model at five dimensions *(8 pages)* 042117
Nikolaos G. Fytas, Víctor Martín-Mayor, Marco Picco, and Nicolas Sourlas

Deffuant model on a ring with repelling mechanism and circular opinions *(7 pages)* 042118
Guodong Chen, Hongyan Cheng, Changwei Huang, Wenchen Han, Qionglin Dai, Haihong Li, and Junzhong Yang

Generalized balance equations for charged particle transport via localized and delocalized states: Mobility, generalized Einstein relations, and fractional transport *(13 pages)* 042119
Peter W. Stokes, Bronson Philippa, Daniel Cocks, and Ronald D. White

Manipulation and amplification of the Casimir force through surface fields using helicity *(22 pages)* 042120
Daniel Dantchev and Joseph Rudnick

Driven flow with exclusion and spin-dependent transport in graphenelike structures *(12 pages)* 042121
S. L. A. de Queiroz and R. B. Stinchcombe

(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).

CONTENTS - *Continued*

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 95, NUMBER 4** **APRIL 2017**

Statistical properties of the one-dimensional Burridge-Knopoff model of earthquakes obeying the rate- and state-dependent friction law *(14 pages)* 042122
Hikaru Kawamura, Yushi Ueda, Shingo Kakui, Shouji Morimoto, and Takumi Yamamoto

Effects of a local defect on one-dimensional nonlinear surface growth *(7 pages)* 042123
Hyungjoon Soh, Yongjoo Baek, Meesoon Ha, and Hawoong Jeong

Transient exchange fluctuation theorems for heat using a Hamiltonian framework: Classical and quantum regimes *(8 pages)* 042124
P. S. Pal, Sourabh Lahiri, and A. M. Jayannavar

Devil's staircase continuum in the chiral clock spin glass with competing ferromagnetic-antiferromagnetic and left-right chiral interactions *(8 pages)* 042125
Tolga Çağlar and A. Nihat Berker

Statistical physics of the symmetric group *(10 pages)* 042126
Mobolaji Williams

Anomalous temperature-dependent heat transport in one-dimensional momentum-conserving systems with soft-type interparticle interaction *(7 pages)* 042127
Daxing Xiong

Solution of the Lindblad equation for spin helix states *(11 pages)* 042128
V. Popkov and G. M. Schütz

Mechanism for Hall conductance of two-band systems against decoherence *(10 pages)* 042129
H. Z. Shen, Hong Li, Y. F. Peng, and X. X. Yi

How the site degree influences quantum probability on inhomogeneous substrates *(11 pages)* 042130
A. M. C. Souza, R. F. S. Andrade, N. A. M. Araújo, A. Vezzani, and H. J. Herrmann

Critical behavior of the two-dimensional nonequilibrium zero-temperature random field Ising model on a triangular lattice *(9 pages)* 042131
Sanja Janićević, Svetislav Mijatović, and Djordje Spasojević

Kramers problem for a dimer: Effect of noise correlations *(6 pages)* 042132
R. K. Singh

Explosive percolation on a scale-free multifractal weighted planar stochastic lattice *(7 pages)* 042133
M. M. Rahman and M. K. Hassan

Localized growth and branching random walks with time correlations *(11 pages)* 042134
Thomas Gueudré

Temperature of a single chaotic eigenstate *(8 pages)* 042135
Fausto Borgonovi, Francesco Mattiotti, and Felix M. Izrailev

Applications of the first digit law to measure correlations *(8 pages)* 042136
R. Gramm, J. Yost, Q. Su, and R. Grobe

Convergence radius of perturbative Lindblad-driven nonequilibrium steady states *(5 pages)* 042137
Humberto C. F. Lemos and Tomaž Prosen

(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 4** **APRIL 2017**

Resonance phonon approach to phonon relaxation time and mean free path in one-dimensional nonlinear lattices *(6 pages)* 042138
Lubo Xu (续路波) and Lei Wang (王雷)

Steepest-entropy-ascent nonequilibrium quantum thermodynamic framework to model chemical reaction rates at an atomistic level *(19 pages)* 042139
G. P. Beretta, Omar Al-Abbasi, and M. R. von Spakovsky

Thermodynamics of complexity and pattern manipulation *(20 pages)* 042140
Andrew J. P. Garner, Jayne Thompson, Vlatko Vedral, and Mile Gu

Anomalous scaling of stochastic processes and the Moses effect *(11 pages)* 042141
Lijian Chen, Kevin E. Bassler, Joseph L. McCauley, and Gemunu H. Gunaratne

Destruction of Anderson localization in quantum nonlinear Schrödinger lattices *(4 pages)* 042142
Alexander V. Milovanov and Alexander Iomin

Complementary mode analyses between sub- and superdiffusion *(7 pages)* 042143
Takuya Saito and Takahiro Sakaue

Nonlinear Dynamics and Chaos

Interactions of localized wave structures and dynamics in the defocusing coupled nonlinear Schrödinger equations *(12 pages)* 042201
Guoqiang Zhang, Zhenya Yan, Xiao-Yong Wen, and Yong Chen

Scaling dependence and synchronization of forced mercury beating heart systems *(7 pages)* 042202
Animesh Biswas, Dibyendu Das, and P. Parmananda

Stationary patterns in star networks of bistable units: Theory and application to chemical reactions *(8 pages)* 042203
Nikos E. Kouvaris, Michael Sebek, Albert Iribarne, Albert Díaz-Guilera, and István Z. Kiss

Landau-Zener tunneling of solitons *(5 pages)* 042204
Vazha Loladze and Ramaz Khomeriki

Spatiotemporal canards in neural field equations *(8 pages)* 042205
D. Avitabile, M. Desroches, and E. Knobloch

Intermittency-induced criticality in a resistor-inductor-diode circuit *(8 pages)* 042206
Stelios M. Potirakis, Yiannis Contoyiannis, Fotios K. Diakonos, and Michael P. Hanias

Finite-size scaling in the Kuramoto model *(8 pages)* 042207
Tommaso Coletta, Robin Delabays, and Philippe Jacquod

Mixing and the fractal geometry of piecewise isometries *(11 pages)* 042208
Paul P. Park, Thomas F. Lynn, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow

Interaction of Airy-Gaussian beams in photonic lattices with defects *(9 pages)* 042209
Zhiwei Shi, Jing Xue, Xing Zhu, Ying Xiang, and Huagang Li

Avalanches dynamics in reaction fronts in disordered flows *(8 pages)* 042210
T. Chevalier, A. K. Dubey, S. Atis, A. Rosso, D. Salin, and L. Talon

Rogue waves in nonlocal media *(7 pages)* 042211
Theodoros P. Horikis and Mark J. Ablowitz

(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 4** **APRIL 2017**

Soliton excitations on a continuous-wave background in the modulational instability regime with fourth-order effects *(8 pages)* 042212
Liang Duan, Li-Chen Zhao, Wen-Hao Xu, Chong Liu, Zhan-Ying Yang, and Wen-Li Yang

Metastable memristive lines for signal transmission and information processing applications *(6 pages)* 042213
Valeriy A. Slipko and Yuriy V. Pershin

Robustness of free and pinned spiral waves against breakup by electrical forcing in excitable chemical media *(7 pages)* 042214
Metinee Phantu, Malee Sutthiopad, Jiraporn Luengviriya, Stefan C. Müller, and Chaiya Luengviriya

Intermittent feedback induces attractor selection *(6 pages)* 042215
Kiran Yadav, Neeraj Kumar Kamal, and Manish Dev Shrimali

Proportional-integral control of propagating wave segments in excitable media *(7 pages)* 042216
Hisatoshi Katsumata, Keiji Konishi, and Naoyuki Hara

Generation of higher-order rogue waves from multibreathers by double degeneracy in an optical fiber *(26 pages)* 042217
Lihong Wang, Jingsong He, Hui Xu, Ji Wang, and Kuppuswamy Porsezian

Control of amplitude chimeras by time delay in oscillator networks *(14 pages)* 042218
Aleksandar Gjurchinovski, Eckehard Schöll, and Anna Zakharova

Networks and Complex Systems

Spontaneous symmetry breaking due to the trade-off between attractive and repulsive couplings *(11 pages)* 042301
K. Sathiyadevi, S. Karthiga, V. K. Chandrasekar, D. V. Senthilkumar, and M. Lakshmanan

Reconstructing the structure of directed and weighted networks of nonlinear oscillators *(6 pages)* 042302
Francesco Alderisio, Gianfranco Fiore, and Mario di Bernardo

Correlations induced by depressing synapses in critically self-organized networks with quenched dynamics *(8 pages)* 042303
João Guilherme Ferreira Campos, Ariadne de Andrade Costa, Mauro Copelli, and Osame Kinouchi

First-order phase transition in a majority-vote model with inertia *(6 pages)* 042304
Hanshuang Chen, Chuansheng Shen, Haifeng Zhang, Guofeng Li, Zhonghuai Hou, and Jürgen Kurths

Noise-induced polarization switching in complex networks *(10 pages)* 042305
Jan O. Haerter, Albert Díaz-Guilera, and M. Ángeles Serrano

Spreading dynamics of forget-remember mechanism *(11 pages)* 042306
Shengfeng Deng and Wei Li

Emergent community agglomeration from data set geometry *(11 pages)* 042307
Chenchao Zhao and Jun S. Song

Symmetry breaking by heating in a continuous opinion model *(7 pages)* 042308
Celia Anteneodo and Nuno Crokidakis

Fame and obsolescence: Disentangling growth and aging dynamics of patent citations *(7 pages)* 042309
K. W. Higham, M. Governale, A. B. Jaffe, and U. Zülicke

(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 4** **APRIL 2017**

Central loops in random planar graphs *(12 pages)* 042310
Benjamin Lion and Marc Barthelemy

Asymptotic scaling properties and estimation of the generalized Hurst exponents in financial data *(16 pages)* 042311
R. J. Buonocore, T. Aste, and T. Di Matteo

How to desynchronize quorum-sensing networks *(9 pages)* 042312
Giovanni Russo

Statistical inference for community detection in signed networks *(8 pages)* 042313
Xuehua Zhao, Bo Yang, Xueyan Liu, and Huiling Chen

Role of generosity and forgiveness: Return to a cooperative society *(11 pages)* 042314
Hye Jin Park, Beom Jun Kim, and Hyeong-Chai Jeong

Causal influence in linear Langevin networks without feedback *(9 pages)* 042315
Andrea Auconi, Andrea Giansanti, and Edda Klipp

Spatial uniformity in the power-grid system *(7 pages)* 042316
Mi Jin Lee and Beom Jun Kim

Community detection, link prediction, and layer interdependence in multilayer networks *(10 pages)* 042317
Caterina De Bacco, Eleanor A. Power, Daniel B. Larremore, and Cristopher Moore

Controllability of giant connected components in a directed network *(12 pages)* 042318
Xueming Liu, Linqiang Pan, H. Eugene Stanley, and Jianxi Gao

Simulating competitive egress of noncircular pedestrians *(8 pages)* 042319
R. C. Hidalgo, D. R. Parisi, and I. Zuriguel

Explosive spreading on complex networks: The role of synergy *(10 pages)* 042320
Quan-Hui Liu, Wei Wang, Ming Tang, Tao Zhou, and Ying-Cheng Lai

Random versus maximum entropy models of neural population activity *(5 pages)* 042321
Ulisse Ferrari, Tomoyuki Obuchi, and Thierry Mora

Nonbacktracking expansion of finite graphs *(12 pages)* 042322
G. Timár, R. A. da Costa, S. N. Dorogovtsev, and J. F. F. Mendes

Mean-field equations for neuronal networks with arbitrary degree distributions *(13 pages)* 042323
Duane Q. Nykamp, Daniel Friedman, Sammy Shaker, Maxwell Shinn, Michael Vella,
Albert Compte, and Alex Roxin

Weakly coupled map lattice models for multicellular patterning and collective normalization of abnormal
single-cell states *(10 pages)* 042324
Vladimir García-Morales, José A. Manzanares, and Salvador Mafe

PART B

Biological Physics

Evolutionary fields can explain patterns of high-dimensional complexity in ecology *(8 pages)* 042401
James Wilsenach, Pietro Landi, and Cang Hui

(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 4** **APRIL 2017**

Sugar export limits size of conifer needles *(8 pages)* 042402
Hanna Rademaker, Maciej A. Zwieniecki, Tomas Bohr, and Kaare H. Jensen

General neck condition for the limit shape of budding vesicles *(11 pages)* 042403
Pan Yang, Qiang Du, and Z. C. Tu

Limiting similarity of competitive species and demographic stochasticity *(7 pages)* 042404
Xiu-Deng Zheng, Ling-Ling Deng, Wei-Ya Qiang, Ross Cressman, and Yi Tao

Stable swarming using adaptive long-range interactions *(10 pages)* 042405
Dan Gorbonos and Nir S. Gov

Fractal dimension and universality in avascular tumor growth *(9 pages)* 042406
Fabiano L. Ribeiro, Renato Vieira dos Santos, and Angélica S. Mata

Embryonic metabolism of the ornithischian dinosaurs *Protoceratops andrewsi* and *Hypacrosaurus stebingeri* and implications for calculations of dinosaur egg incubation times *(12 pages)* 042407
Scott A. Lee

Kinetic discrimination of a polymerase in the presence of obstacles *(9 pages)* 042408
Ilana Bogod and Saar Rahav

Entrainment range of the suprachiasmatic nucleus affected by the difference in the neuronal amplitudes abetween the light-sensitive and light-insensitive regions *(6 pages)* 042409
Changgui Gu, Huijie Yang, and Zhongyuan Ruan

Critical dynamics of Hopf bifurcations in the corticothalamic system: Transitions from normal arousal states to epileptic seizures *(14 pages)* 042410
Dong-Ping Yang and P. A. Robinson

J-shaped stress-strain diagram of collagen fibers: Frame tension of triangulated surfaces with fixed boundaries *(11 pages)* 042411
Yu Takano and Hiroshi Koibuchi

Multiple binding sites for transcriptional repressors can produce regular bursting and enhance noise suppression *(10 pages)* 042412
Iván M. Lengyel and Luis G. Morelli

Dissociation rates from single-molecule pulling experiments under large thermal fluctuations or large applied force *(7 pages)* 042413
Masoud Abkenar, Thomas H. Gray, and Alessio Zaccone

Ecological communities with Lotka-Volterra dynamics *(8 pages)* 042414
Guy Bunin

Polymers

Theoretical models for magneto-sensitive elastomers: A comparison between continuum and dipole approaches *(12 pages)* 042501
Dirk Romeis, Philipp Metsch, Markus Kästner, and Marina Saphiannikova

Modeling intra- and intermolecular correlations for linear and branched polymers using a modified test-chain self-consistent field theory *(11 pages)* 042502
Renfeng Hu, David T. Wu, and Dapeng Wang

(Continued)

The editors and referees of PRE find these papers to be of particular interest, importance, or clarity. Please see our Announcement Phys. Rev. E 89, 010001 (2014).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 95, NUMBER 4** **APRIL 2017**

Criticality and mechanical enhancement in composite fiber networks *(7 pages)* 042503
Jan Maarten van Doorn, Luuk Lageschaar, Joris Sprakel, and Jasper van der Gucht

Colloids, Complex Fluids, and Active Matter

Low-frequency dielectric response of charged oblate spheroidal particles immersed in an electrolyte *(25 pages)* 042601
Chang-Yu Hou, Denise E. Freed, and Pabitra N. Sen

Nonmonotonic DNA-length-dependent mobility in pluronic gels *(14 pages)* 042602
Seungyong You, Ling Wei, Sachin Shanbhag, and David H. Van Winkle

Self-organization of charged particles in circular geometry *(11 pages)* 042603
R. G. Nazmitdinov, A. Puente, M. Cerkaski, and M. Pons

Optimal strengthening of particle-loaded liquid foams *(6 pages)* 042604
F. Gorlier, Y. Khidas, A. Fall, and O. Pitois

Electrophoresis of a polarizable charged colloid with hydrophobic surface: A numerical study *(10 pages)* 042605
Somnath Bhattacharyya and Partha Sarathi Majee

Flow and evolution of ice-sucrose crystal mushes *(14 pages)* 042606
Andrew J. Gilbert, Felix K. Oppong, and Robert S. Farr

Dewetting-mediated pattern formation inside the coffee ring *(8 pages)* 042607
Weibin Li, Ding Lan, and Yuren Wang

Active rotational and translational microrheology beyond the linear spring regime *(7 pages)* 042608
Lachlan J. Gibson, Shu Zhang, Alexander B. Stilgoe, Timo A. Nieminen, and Halina Rubinsztein-Dunlop

Dynamic stabilization of Janus sphere *trans*-dimers *(7 pages)* 042609
Joel N. Johnson, Amir Nourhani, Robert Peralta, Christopher McDonald, Benjamin Thiesing, Christopher J. Mann, Paul E. Lammert, and John G. Gibbs

Critical behavior of hard squares in strong confinement *(10 pages)* 042610
Péter Gurin, Gerardo Odriozola, and Szabolcs Varga

Liquid Crystals

Fast-switching chiral nematic liquid-crystal mode with polymer-sustained twisted vertical alignment *(6 pages)* . . . 042701
Kai-Han Chang, Vinay Joshi, and Liang-Chy Chien

Decomposition of strongly charged topological defects *(9 pages)* 042702
Samo Kralj, Bryce S. Murray, and Charles Rosenblatt

Phase behavior of the thermotropic melt of asymmetric V-shaped molecules *(13 pages)* 042703
M. A. Aliev, N. Yu. Kuzminyh, and E. A. Ugolkova

Traveling waves and worms in ac-driven electroconvection under external multiplicative noise *(9 pages)* 042704
Jong-Hoon Huh

Direct observation of coupling between orientation and flow fluctuations in a nematic liquid crystal at equilibrium *(6 pages)* 042705
Hiroshi Orihara, Nobutaka Sakurai, Yuji Sasaki, and Tomoyuki Nagaya

(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 4** **APRIL 2017**

Films and Interfaces

Optimal detrended fluctuation analysis as a tool for the determination of the roughness exponent of the mounded surfaces *(6 pages)* 042801
Edwin E. Mozo Luis, Thiago A. de Assis, and Silvio C. Ferreira

Dynamic scaling of island size distribution in submonolayer one-dimensional growth *(8 pages)* 042802
Jason R. Albia and Marvin A. Albao

Nucleation and growth of a core-shell composite nucleus by diffusion *(7 pages)* 042803
Masao Iwamatsu

Critical nucleus size for crystallization of supercooled liquids in two dimensions *(6 pages)* 042804
Tomoko Mizuguchi, Yuki Higeta, and Takashi Odagaki

Effects of film growth kinetics on grain coarsening and grain shape *(11 pages)* 042805
F. D. A. Aarão Reis

Equilibrium of fluid membranes endowed with orientational order *(8 pages)* 042806
Jaya Kumar Alageshan, Buddhapriya Chakrabarti, and Yashodhan Hatwalne

Granular Materials

Crater formation during raindrop impact on sand *(8 pages)* 042901
Rianne de Jong, Song-Chuan Zhao (赵松川), and Devaraj van der Meer

Dynamic phases, clustering, and chain formation for driven disk systems in the presence of quenched disorder *(13 pages)* 042902
Y. Yang, D. McDermott, C. J. Olson Reichhardt, and C. Reichhardt

Mechanics of a granular skin *(10 pages)* 042903
Somnath Karmakar, Anit Sane, S. Bhattacharya, and Shankar Ghosh

Compaction of noncohesive and cohesive granular materials under vibrations: Experiments and stochastic model *(6 pages)* 042904
J.-E. Mathonnet, P. Sornay, M. Nicolas, and B. Dalloz-Dubrujeaud

Solid Mechanics

Effect of composition and pressure on the shear strength of sodium silicate glasses: An atomic scale simulation study *(15 pages)* 043001
Gergely Molnár, Patrick Ganster, and Anne Tanguy

Damage cluster distributions in numerical concrete at the mesoscale *(12 pages)* 043002
Okan Yılmaz, Peter Michael Derlet, and Jean-François Molinari

Fluid Dynamics

Outcomes of the collapse of a large bubble in water at high ambient pressures *(13 pages)* 043101
Jonathan R. Sukovich, Phillip A. Anderson, Ashwinkumar Sampathkumar, D. Felipe Gaitan, Yuri A. Pishchalnikov, and R. Glynn Holt

Interaction of toroidal swimmers in Stokes flow *(12 pages)* 043102
Jianjun Huang and Lisa Fauci

(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 4** **APRIL 2017**

Dispersive transport and symmetry of the dispersion tensor in porous media *(13 pages)* 043103
Steven R. Pride, Donald W. Vasco, Eirik G. Flekkoy, and Ran Holtzman

Counterexamples to Moffatt's statements on vortex knots *(14 pages)* 043104
Oleg Bogoyavlenskij

Parallelization of microfluidic flow-focusing devices *(6 pages)* 043105
Esther Amstad, Xiaoming Chen, Max Eggersdorfer, Noa Cohen, Thomas E. Kodger, Carolyn L. Ren, and David A. Weitz

Chaotic Lagrangian models for turbulent relative dispersion *(9 pages)* 043106
Guglielmo Lacorata and Angelo Vulpiani

Slip length of confined liquid with small roughness of solid-liquid interfaces *(9 pages)* 043107
Li Wan and Yunmi Huang

Optimal subgrid scheme for shell models of turbulence *(12 pages)* 043108
Luca Biferale, Alexei A. Mailybaev, and Giorgio Parisi

Size dependence of static polymer droplet behavior from many-body dissipative particle dynamics simulation *(10 pages)* 043109
Naoki Kadoya and Noriyoshi Arai

Highly pressurized partially miscible liquid-liquid flow in a micro-T-junction. I. Experimental observations *(15 pages)* 043110
Ning Qin, John Z. Wen, and Carolyn L. Ren

Highly pressurized partially miscible liquid-liquid flow in a micro-T-junction. II. Theoretical justifications and modeling *(9 pages)* 043111
Ning Qin, John Z. Wen, and Carolyn L. Ren

Hysteresis in relative permeabilities suffices for propagation of saturation overshoot: A quantitative comparison with experiment *(10 pages)* 043112
R. Steinle and R. Hilfer

Surface switching statistics of rotating fluid: Disk-rim gap effects *(8 pages)* 043113
Yuji Tasaka and Makoto Iima

Plasma Physics

Equation of state, phonons, and lattice stability of ultrafast warm dense matter *(11 pages)* 043201
L. Harbour, M. W. C. Dharma-wardana, D. D. Klug, and L. J. Lewis

Molecular dynamics studies of electron-ion temperature equilibration in hydrogen plasmas within the coupled-mode regime *(20 pages)* 043202
Lorin X. Benedict, Michael P. Surh, Liam G. Stanton, Christian R. Scullard, Alfredo A. Correa, John I. Castor, Frank R. Graziani, Lee A. Collins, Ondřej Čertík, Joel D. Kress, and Michael S. Murillo

Multiparticle collision simulations of two-dimensional one-component plasmas: Anomalous transport and dimensional crossovers *(12 pages)* 043203
Pierfrancesco Di Cintio, Roberto Livi, Stefano Lepri, and Guido Ciraolo

Thermodynamic state variables in quasiequilibrium ultracold neutral plasma *(10 pages)* 043204
Sanat Kumar Tiwari, Nathaniel R. Shaffer, and Scott D. Baalrud

(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 4** **APRIL 2017**

First-principles simulations of warm dense lithium fluoride *(11 pages)* 043205
K. P. Driver and B. Militzer

Comparative study of noise in low-current Townsend discharge in nitrogen and argon *(7 pages)* 043206
Yu. A. Astrov, A. N. Lodygin, L. M. Portsel, and E. V. Beregulin

Relativistic laser hosing instability suppression and electron acceleration in a preformed plasma channel *(8 pages)* 043207
T. W. Huang, C. T. Zhou, H. Zhang, S. Z. Wu, B. Qiao, X. T. He, and S. C. Ruan

Moment fluid equations for ions in weakly ionized plasma *(10 pages)* 043208
I. L. Semenov

Impact of the dipole contribution on the terahertz emission of air-based plasma induced by tightly focused femtosecond laser pulses *(8 pages)* 043209
Alexander P. Shkurinov, Anton S. Sinko, Peter M. Solyankin, Alexander V. Borodin, Mikhail N. Esaulkov, Vladimir V. Annenkov, Igor A. Kotelnikov, Igor V. Timofeev, and Xi-Cheng Zhang

First-principles equation-of-state table of silicon and its effects on high-energy-density plasma simulations *(8 pages)* 043210
S. X. Hu (胡素兴), R. Gao, Y. Ding, L. A. Collins, and J. D. Kress

Influence of collective nonideal shielding on fusion reaction in partially ionized classical nonideal plasmas *(5 pages)* 043211
Myoung-Jae Lee and Young-Dae Jung

Computational Physics

Analysis of force treatment in the pseudopotential lattice Boltzmann equation method *(7 pages)* 043301
Lin Zheng, Qinglan Zhai, and Song Zheng

Numerical heating of electrons in particle-in-cell simulations of fully magnetized plasmas *(10 pages)* 043302
M. Horký, W. J. Miloch, and V. A. Delong

Classification framework for partially observed dynamical systems *(21 pages)* 043303
Yuan Shen, Peter Tino, and Krasimira Tsaneva-Atanasova

Modeling mass transfer and reaction of dilute solutes in a ternary phase system by the lattice Boltzmann method *(21 pages)* 043304
Yu-Hang Fu, Lin Bai, Kai-Hong Luo, Yong Jin, and Yi Cheng

Machine learning applied to proton radiography of high-energy-density plasmas *(12 pages)* 043305
Nicholas F. Y. Chen, Muhammad Firmansyah Kasim, Luke Ceurvorst, Naren Ratan, James Sadler, Matthew C. Levy, Raoul Trines, Robert Bingham, and Peter Norreys

Numerical analysis of the lattice Boltzmann method for simulation of linear acoustic waves *(15 pages)* 043306
Dattaraj B. Dhuri, Shravan M. Hanasoge, Prasad Perlekar, and Johan O. A. Robertsson

Description of order-disorder transitions based on the phase-field-crystal model *(10 pages)* 043307
Yunhao Huang, Jincheng Wang, Zhijun Wang, Junjie Li, and Can Guo

Gauge-free cluster variational method by maximal messages and moment matching *(15 pages)* 043308
Eduardo Domínguez, Alejandro Lage-Castellanos, Roberto Mulet, and Federico Ricci-Tersenghi

(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 4** **APRIL 2017**

Effect of internal mass in the lattice Boltzmann simulation of moving solid bodies by the smoothed-profile method *(10 pages)* 043309
Yasushi Mino, Hiroyuki Shinto, Shohei Sakai, and Hideto Matsuyama

Thermohydrodynamics of an evaporating droplet studied using a multiphase lattice Boltzmann method *(13 pages)* 043310
Ahad Zarghami and Harry E. A. Van den Akker

Forcing scheme analysis for the axisymmetric lattice Boltzmann method under incompressible limit *(19 pages)* 043311
Liangqi Zhang, Shiliang Yang, Zhong Zeng, Jie Chen, Linmao Yin, and Jia Wei Chew

Alternative extrapolation-based symmetry boundary implementations for the axisymmetric lattice Boltzmann method *(13 pages)* 043312
Liangqi Zhang, Shiliang Yang, Zhong Zeng, Jie Chen, Lingquan Wang, and Jia Wei Chew

ERRATA

Publisher's Note: Dynamics and thermodynamics of systems with long-range dipole-type interactions [Phys. Rev. E **95**, 022110 (2017)] *(1 page)* . . . . . 049901(E)
Boris Atenas and Sergio Curilef

Publisher's Note: Effect of the salt-induced micellar microstructure on the nonlinear shear flow behavior of ionic cetylpyridinium chloride surfactant solutions [Phys. Rev. E **95**, 032603 (2017)] *(1 page)* . . . . . 049902(E)
D. Gaudino, R. Pasquino, H. Kriegs, N. Szekely, W. Pyckhout-Hintzen, M. P. Lettinga, and N. Grizzuti

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).