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 94, NUMBER 4
PARTS A AND B

CONTENTS

OCTOBER 2016

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 040101(R)–042427, and Part B pages 042501–046202.

PART A

RAPID COMMUNICATIONS

Statistical Physics

Equilibrium free-energy differences at different temperatures from a single set of nonequilibrium transitions *(5 pages)* . . . . . 040101(R)
Puneet Kumar Patra and Baidurya Bhattacharya

Direct calculation of the critical Casimir force in a binary fluid *(5 pages)* . . . . . 040102(R)
Francesco Puosi, David Lopes Cardozo, Sergio Ciliberto, and Peter C. W. Holdsworth

Kinetic equation and nonequilibrium entropy for a quasi-two-dimensional gas *(4 pages)* . . . . . 040103(R)
J. Javier Brey, Pablo Maynar, and M. I. García de Soria

Networks and Complex Systems

Pairwise network information and nonlinear correlations *(6 pages)* . . . . . 040301(R)
Elliot A. Martin, Jaroslav Hlinka, and Jörn Davidsen

Biological Physics

Types and concentrations of metal ions affect local structure and dynamics of RNA *(6 pages)* . . . . . 040401(R)
Jun Wang and Yi Xiao

Colloids, Complex Fluids, and Active Matter

Gelation transitions of colloidal systems with bridging attractions *(6 pages)* . . . . . 040601(R)
Guangcui Yuan, Junhua Luo, Charles C. Han, and Yun Liu

Fluid Dynamics

Streamwise decay of localized states in channel flow *(5 pages)* . . . . . 041101(R)
Stefan Zammert and Bruno Eckhardt

Copyright 2016 by American Physical Society

(Continued)

2470-0045(201610)94:4:A;1-M

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 94, NUMBER 4** **OCTOBER 2016**

ARTICLES

Statistical Physics

Out-of-equilibrium stationary states, percolation, and subcritical instabilities in a fully nonconservative system *(10 pages)* 042101
Mathieu Génois, Pascal Hersen, Eric Bertin, Sylvain Courrech du Pont, and Guillaume Grégoire

Efficient quantum transport in disordered interacting many-body networks *(12 pages)* 042102
Adrian Ortega, Thomas Stegmann, and Luis Benet

Symmetry group and group representations associated with the thermodynamic covariance principle *(17 pages)* 042103
Giorgio Sonnino, Jarah Evslin, Alberto Sonnino, György Steinbrecher, and Enrique Tirapegui

Phase transitions and multicritical behavior in the Ising model with dipolar interactions *(8 pages)* 042104
M. A. Bab, C. M. Horowitz, M. L. Rubio Puzzo, and G. P. Saracco

Universal behavior of coupled order parameters below three dimensions *(16 pages)* 042105
Julia Borchardt and Astrid Eichhorn

Thermodynamics of slow solutions to the gas-piston equations *(6 pages)* 042106
G. Gubbiotti and D. Chiuchiù

Anisotropy of a cubic ferromagnet at criticality *(8 pages)* 042107
A. Kudlis and A. I. Sokolov

Thermally induced passage and current of particles in a highly unstable optical potential *(9 pages)* 042108
Artem Ryabov, Pavel Zemánek, and Radim Filip

Universality class of site and bond percolation on multifractal scale-free planar stochastic lattice *(10 pages)* 042109
M. K. Hassan and M. M. Rahman

Thermodynamically consistent Langevin dynamics with spatially correlated noise predicting frictionless regime and transient attraction effect *(7 pages)* 042110
M. Majka and P. F. Góra

Electrical conductivity of a monolayer produced by random sequential adsorption of linear k-mers onto a square lattice *(10 pages)* 042112
Yuri Yu. Tarasevich, Valeria A. Goltseva, Valeri V. Laptev, and Nikolai I. Lebovka

Piezothermal effect in a spinning gas *(5 pages)* 042113
V. I. Geyko and N. J. Fisch

Superexponential fluctuation relation for dichotomous work reservoir systems *(15 pages)* 042114
Sílvio M. Duarte Queirós

Lattice model of reduced jamming by a barrier *(12 pages)* 042115
Emilio N. M. Cirillo, Oleh Krehel, Adrian Muntean, and Rutger van Santen

Blockage-induced condensation controlled by a local reaction *(4 pages)* 042116
Emilio N. M. Cirillo, Matteo Colangeli, and Adrian Muntean

Role of the range of the interactions in thermal conduction *(5 pages)* 042117
Carlos Olivares and Celia Anteneodo

(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 94, NUMBER 4** **OCTOBER 2016**

Resummed mean-field inference for strongly coupled data *(20 pages)* 042118
Hugo Jacquin and A. Rançon

Analysis of etching at a solid-solid interface *(7 pages)* 042119
Washington S. Alves, Evandro A. Rodrigues, Henrique A. Fernandes, Bernardo A. Mello, Fernando A. Oliveira, and Ismael V. L. Costa

Pattern formation with repulsive soft-core interactions: Discrete particle dynamics and Dean-Kawasaki equation *(13 pages)* 042120
Jean-Baptiste Delfau, Hélène Ollivier, Cristóbal López, Bernd Blasius, and Emilio Hernández-García

Stochastic transport in the presence of spatial disorder: Fluctuation-induced corrections to homogenization *(14 pages)* 042121
Matthew J. Russell, Oliver E. Jensen, and Tobias Galla

Energy rectification in quantum graded spin chains: Analysis of the *XXZ* model *(10 pages)* 042122
Lucas Schuab, Emmanuel Pereira, and Gabriel T. Landi

Comparing the influence of distinct kinds of temporal disorder in a low-dimensional absorbing transition model *(9 pages)* 042123
C. M. D. Solano, M. M. de Oliveira, and C. E. Fiore

Grand-canonical condensate fluctuations in weakly interacting Bose-Einstein condensates of light *(12 pages)* 042124
Christoph Weiss and Jacques Tempere

From network reliability to the Ising model: A parallel scheme for estimating the joint density of states *(7 pages)* 042125
Yihui Ren, Stephen Eubank, and Madhurima Nath

Liquid-liquid critical point in a simple analytical model of water *(5 pages)* 042126
Tomaz Urbic

Hamiltonian analogs of combustion engines: A systematic exception to adiabatic decoupling *(11 pages)* 042127
Lukas Gilz, Eike Thesing, and James R. Anglin

Inverse Gaussian and its inverse process as the subordinators of fractional Brownian motion *(11 pages)* 042128
A. Wyłomańska, A. Kumar, R. Połoczański, and P. Vellaisamy

Stochastic Fokker-Planck equation in random environments *(10 pages)* 042129
Paul C. Bressloff

Exact spectral densities of complex noise-plus-structure random matrices *(11 pages)* 042130
Jacek Grela and Thomas Guhr

Role of Ito's lemma in sampling pinned diffusion paths in the continuous-time limit *(8 pages)* 042131
P. J. Malsom and F. J. Pinski

Random walks with fractally correlated traps: Stretched exponential and power-law survival kinetics *(12 pages)* 042132
Dan Plyukhin and Alex V. Plyukhin

Numerical analysis of homogeneous and inhomogeneous intermittent search strategies *(33 pages)* 042133
Karsten Schwarz, Yannick Schröder, and Heiko Rieger

(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 94, NUMBER 4** **OCTOBER 2016**

Distribution of residence times as a marker to distinguish different pathways for quantum transport *(5 pages)* 042134
Samuel L. Rudge and Daniel S. Kosov

Controlling heat flows among three reservoirs asymmetrically coupled to two two-level systems *(10 pages)* 042135
Zhong-Xiao Man, Nguyen Ba An, and Yun-Jie Xia

Ordered phase of the O(N) model within the nonperturbative renormalization group *(17 pages)* 042136
Marcela Peláez and Nicolás Wschebor

Phase transition in the parametric natural visibility graph *(8 pages)* 042137
A. A. Snarskii and I. V. Bezsudnov

Directed percolation with a conserved field and the depinning transition *(8 pages)* 042138
Hans-Karl Janssen and Olaf Stenull

Rhythmic behavior in a two-population mean-field Ising model *(7 pages)* 042139
Francesca Collet, Marco Formentin, and Daniele Tovazzi

Memory effect in the upper bound of the heat flux induced by quantum fluctuations *(5 pages)* 042140
T. Koide

Two-dimensional quantum percolation with binary nonzero hopping integrals *(11 pages)* 042141
Brianna S. Dillon Thomas and Hisao Nakanishi

Nonlinear Dynamics and Chaos

Detrended fluctuation analysis and the difference between external drifts and intrinsic diffusionlike nonstationarity *(10 pages)* 042201
Marc Höll, Holger Kantz, and Yu Zhou

Tunable φ Josephson junction ratchet *(5 pages)* 042202
R. Menditto, H. Sickinger, M. Weides, H. Kohlstedt, D. Koelle, R. Kleiner, and E. Goldobin

Calculation of mutual information for nonlinear communication channel at large signal-to-noise ratio *(15 pages)* 042203
I. S. Terekhov, A. V. Reznichenko, and S. K. Turitsyn

Small chimera states without multistability in a globally delay-coupled network of four lasers *(8 pages)* 042204
André Röhm, Fabian Böhm, and Kathy Lüdge

Observability coefficients for predicting the class of synchronizability from the algebraic structure of the local oscillators *(12 pages)* 042205
Irene Sendiña-Nadal, Stefano Boccaletti, and Christophe Letellier

Nonlinear dynamics and intermittency in a turbulent reacting wake with density ratio as bifurcation parameter *(13 pages)* 042206
Suhas Suresha, R. I. Sujith, Benjamin Emerson, and Tim Lieuwen

Cross-section fluctuations in chaotic scattering systems *(17 pages)* 042207
Torleif E. O. Ericson, Barbara Dietz, and Achim Richter

Transport of chaotic trajectories from regions distant from or near to structures of regular motion of the Fermi-Ulam model *(9 pages)* 042208
Nilson B. de Faria, Daniel S. Tavares, Wenderson C. S. de Paula, Edson D. Leonel, and Denis G. Ladeira

(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 94, NUMBER 4** **OCTOBER 2016**

Stable and unstable periodic orbits in the one-dimensional lattice ϕ^4 theory *(11 pages)* 042209
Kenichiro Aoki

Traveling phase waves in asymmetric networks of noisy chaotic attractors *(8 pages)* 042210
Thomas K. DM. Peron, Jürgen Kurths, Francisco A. Rodrigues, Lutz Schimansky-Geier, and Bernard Sonnenschein

Long-range correlations in rectangular cavities containing pointlike perturbations *(7 pages)* 042211
Małgorzata Białous, Vitalii Yunko, Szymon Bauch, Michał Ławniczak, Barbara Dietz, and Leszek Sirko

Effects of time-delayed feedback on the properties of self-sustained oscillators *(9 pages)* 042212
S. Risau-Gusman

Diversity of coupled oscillators can enhance their synchronization *(10 pages)* 042213
Ghazal Montaseri and Michael Meyer-Hermann

Randomness evaluation for an optically injected chaotic semiconductor laser by attractor reconstruction *(12 pages)* 042214
Xiao-Zhou Li, Jun-Ping Zhuang, Song-Sui Li, Jian-Bo Gao, and Sze-Chun Chan

Oscillatory motion of a camphor grain in a one-dimensional finite region *(8 pages)* 042215
Yuki Koyano, Tatsunari Sakurai, and Hiroyuki Kitahata

Parametric autoresonant excitation of the nonlinear Schrödinger equation *(10 pages)* 042216
L. Friedland and A. G. Shagalov

Possibility of short-term probabilistic forecasts for large earthquakes making good use of the limitations of existing catalogs *(14 pages)* 042217
Yoshito Hirata, Koji Iwayama, and Kazuyuki Aihara

Analytical and numerical study of travelling waves using the Maxwell-Cattaneo relaxation model extended to reaction-advection-diffusion systems *(19 pages)* 042218
V. A. Sabelnikov, N. N. Petrova, and A. N. Lipatnikov

Spike latency and response properties of an excitable micropillar laser *(8 pages)* 042219
F. Selmi, R. Braive, G. Beaudoin, I. Sagnes, R. Kuszelewicz, T. Erneux, and S. Barbay

Breathers and rogue waves excited by all-magnonic spin-transfer torque *(5 pages)* 042220
Zai-Dong Li, Qiu-Yan Li, Tian-Fu Xu, and Peng-Bin He

Symmetric and asymmetric optical multipeak solitons on a continuous wave background in the femtosecond regime *(9 pages)* 042221
Chong Liu, Zhan-Ying Yang, Li-Chen Zhao, Liang Duan, Guangye Yang, and Wen-Li Yang

Lévy-noise-induced transport in a rough triple-well potential *(9 pages)* 042222
Yongge Li, Yong Xu, Jürgen Kurths, and Xiaole Yue

Differential-flow-induced transition of traveling wave patterns and wave splitting *(9 pages)* 042223
Shyamolina Ghosh, Shibashis Paul, and Deb Shankar Ray

Self-attraction into spinning eigenstates of a mobile wave source by its emission back-reaction *(9 pages)* 042224
Matthieu Labousse, Stéphane Perrard, Yves Couder, and Emmanuel Fort

Billiard with a handle *(8 pages)* 042225
D. M. Naplekov and V. V. Yanovsky

(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 94, NUMBER 4** **OCTOBER 2016**

Control of birhythmicity through conjugate self-feedback: Theory and experiment *(7 pages)* 042226
Debabrata Biswas, Tanmoy Banerjee, and Jürgen Kurths

Networks and Complex Systems

Bifurcation transitions in gap-junction-coupled neurons *(7 pages)* 042301
Annabelle Shaffer, Allison L. Harris, Rosangela Follmann, and Epaminondas Rosa, Jr.

"Hits" emerge through self-organized coordination in collective response of free agents *(8 pages)* 042302
Anindya S. Chakrabarti and Sitabhra Sinha

Effect of interacting second- and third-order stimulus-dependent correlations on population-coding asymmetries *(15 pages)* 042303
Lisandro Montangie and Fernando Montani

Cascading failures in interdependent networks with finite functional components *(8 pages)* 042304
M. A. Di Muro, S. V. Buldyrev, H. E. Stanley, and L. A. Braunstein

Universality of market superstatistics *(14 pages)* 042305
Mateusz Denys, Tomasz Gubiec, Ryszard Kutner, Maciej Jagielski, and H. Eugene Stanley

Population dynamics, information transfer, and spatial organization in a chemical reaction network under spatial confinement and crowding conditions *(8 pages)* 042306
Giovanni Bellesia and Benjamin B. Bales

Multifractal cross-correlation effects in two-variable time series of complex network vertex observables *(6 pages)* 042307
Paweł Oświęcimka, Lorenzo Livi, and Stanisław Drożdż

Sampling methods for the quasistationary regime of epidemic processes on regular and complex networks *(11 pages)* 042308
Renan S. Sander, Guilherme S. Costa, and Silvio C. Ferreira

Network exploration using true self-avoiding walks *(4 pages)* 042309
Yup Kim, Seokjong Park, and Soon-Hyung Yook

Feedback control stabilization of critical dynamics via resource transport on multilayer networks: How glia enable learning dynamics in the brain *(8 pages)* 042310
Yogesh S. Virkar, Woodrow L. Shew, Juan G. Restrepo, and Edward Ott

Cooperation driven by success-driven group formation *(8 pages)* 042311
Attila Szolnoki and Xiaojie Chen

Stochastic inference with spiking neurons in the high-conductance state *(14 pages)* 042312
Mihai A. Petrovici, Johannes Bill, Ilja Bytschok, Johannes Schemmel, and Karlheinz Meier

Input-output relationship in social communications characterized by spike train analysis *(11 pages)* 042313
Takaaki Aoki, Taro Takaguchi, Ryota Kobayashi, and Renaud Lambiotte

Oslo model, hyperuniformity, and the quenched Edwards-Wilkinson model *(18 pages)* 042314
Peter Grassberger, Deepak Dhar, and P. K. Mohanty

Modeling region-based interconnection for interdependent networks *(14 pages)* 042315
Xiangrong Wang, Robert E. Kooij, and Piet Van Mieghem

(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 94, NUMBER 4** **OCTOBER 2016**

Multiplexity and multireciprocity in directed multiplexes *(20 pages)* 042316
Valerio Gemmetto, Tiziano Squartini, Francesco Picciolo, Franco Ruzzenenti, and Diego Garlaschelli

Biological Physics

Myocardial architecture and patient variability in clinical patterns of atrial fibrillation *(7 pages)* 042401
Kishan A. Manani, Kim Christensen, and Nicholas S. Peters

Polymer models of the hierarchical folding of the Hox-B chromosomal locus *(8 pages)* 042402
Carlo Annunziatella, Andrea M. Chiariello, Simona Bianco, and Mario Nicodemi

Controlling segregation speed of entangled polymers by the shapes: A simple model for eukaryotic chromosome segregation *(8 pages)* 042403
Yuji Sakai, Masashi Tachikawa, and Atsushi Mochizuki

Species survival and scaling laws in hostile and disordered environments *(8 pages)* 042404
Rodrigo P. Rocha, Wagner Figueiredo, Samir Suweis, and Amos Maritan

Peptide binding landscapes: Specificity and homophilicity across sequence space in a lattice model *(12 pages)* . . . 042405
Joohyun Jeon and M. Scott Shell

Emergence of flagellar beating from the collective behavior of individual ATP-powered dyneins *(15 pages)* 042406
S. Namdeo and P. R. Onck

Strain-driven criticality underlies nonlinear mechanics of fibrous networks *(11 pages)* 042407
A. Sharma, A. J. Licup, R. Rens, M. Vahabi, K. A. Jansen, G. H. Koenderink, and F. C. MacKintosh

Dielectrophoretic label-free immunoassay for rare-analyte quantification in biological samples *(6 pages)* 042408
Logeeshan Velmanickam, Darrin Laudenbach, and Dharmakeerthi Nawarathna

Targeting functional motifs of a protein family *(13 pages)* 042409
Pradeep Bhadola and Nivedita Deo

Classification and predictions of RNA pseudoknots based on topological invariants *(7 pages)* 042410
Graziano Vernizzi, Henri Orland, and A. Zee

Inhibitory loop robustly induces anticipated synchronization in neuronal microcircuits *(8 pages)* 042411
Fernanda S. Matias, Leonardo L. Gollo, Pedro V. Carelli, Claudio R. Mirasso, and Mauro Copelli

Biasing effects of receptor-ligand complexes on protein-unfolding statistics *(6 pages)* 042412
Constantin Schoeler, Tobias Verdorfer, Hermann E. Gaub, and Michael A. Nash

Population dynamics in an intermittent refuge *(7 pages)* 042413
E. H. Colombo and C. Anteneodo

Uniform asymptotic approximation of diffusion to a small target: Generalized reaction models *(17 pages)* 042414
Samuel A. Isaacson, Ava J. Mauro, and Jay Newby

Analytical calculation of the lipid bilayer bending modulus *(11 pages)* 042415
Boris Kheyfets, Timur Galimzyanov, Anna Drozdova, and Sergei Mukhin

Optimal inference strategies and their implications for the linear noise approximation *(11 pages)* 042416
David Hartich and Udo Seifert

(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 94, NUMBER 4** **OCTOBER 2016**

Hybrid asymptotic-numerical approach for estimating first-passage-time densities of the two-dimensional narrow capture problem *(17 pages)* 042418
A. E. Lindsay, R. T. Spoonmore, and J. C. Tzou

Frequency modulation of stochastic gene expression bursts by strongly interacting small RNAs *(10 pages)* 042419
Niraj Kumar, Tao Jia, Kourosh Zarringhalam, and Rahul V. Kulkarni

Experimental observation of phase-flip transitions in the brain *(5 pages)* 042420
Nicholas M. Dotson and Charles M. Gray

Algebraic study of drifting spiral waves *(4 pages)* 042421
Marcel Wellner

Solution of classical evolutionary models in the limit when the diffusion approximation breaks down *(8 pages)* 042422
David B. Saakian and Chin-Kun Hu

Computational model for amoeboid motion: Coupling membrane and cytosol dynamics *(9 pages)* 042423
Adrian Moure and Hector Gomez

Effects of spatial diffusion on nonequilibrium steady states in a model for prebiotic evolution *(13 pages)* 042424
B. F. Intoy, A. Wynveen, and J. W. Halley

Comparison of cellular oscillations driven by noise or deterministic mechanisms under cell-size scaling *(18 pages)* 042425
Chong He, Keng-Hwee Chiam, and Lock Yue Chew

Curvature regulation of the ciliary beat through axonemal twist *(9 pages)* 042426
Pablo Sartori, Veikko F. Geyer, Jonathon Howard, and Frank Jülicher

Interplay between excitability type and distributions of neuronal connectivity determines neuronal network synchronization *(10 pages)* 042427
Sima Mofakham, Christian G. Fink, Victoria Booth, and Michal R. Zochowski

PART B

Polymers

Micromechanical model for isolated polymer-colloid clusters under tension *(17 pages)* 042501
Roozbeh Dargazany, Jiaqi Lin, Leila Khalili, Mikhail Itskov, Hsieh Chen, and Alfredo Alexander-Katz

Correlation-induced DNA adsorption on like-charged membranes *(17 pages)* 042502
Sahin Buyukdagli and Ralf Blossey

Design of block-copolymer-based micelles for active and passive targeting *(15 pages)* 042503
Jérôme G. J. L. Lebouille, Frans A. M. Leermakers, Martien A. Cohen Stuart, and Remco Tuinier

Colloids, Complex Fluids, and Active Matter

Dynamics of ellipsoidal tracers in swimming algal suspensions *(11 pages)* 042601
Ou Yang, Yi Peng, Zhengyang Liu, Chao Tang, Xinliang Xu, and Xiang Cheng

Active microrheology in a colloidal glass *(19 pages)* 042602
M. Gruber, G. C. Abade, A. M. Puertas, and M. Fuchs

(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 94, NUMBER 4** **OCTOBER 2016**

Waves of DNA: Propagating excitations in extended nanoconfined polymers *(9 pages)* 042603
Alexander R. Klotz, Hendrick W. de Haan, and Walter W. Reisner

Imaging grain boundary grooves in hard-sphere colloidal bicrystals *(9 pages)* 042604
Eric Maire, Emily Redston, Maria Persson Gulda, David A. Weitz, and Frans Spaepen

Yielding of glass under shear: A directed percolation transition precedes shear-band formation *(10 pages)* 042605
Gaurav Prakash Shrivastav, Pinaki Chaudhuri, and Jürgen Horbach

Vibrational properties of quasi-two-dimensional colloidal glasses with varying interparticle attraction *(7 pages)* 042606
Matthew D. Gratale, Xiaoguang Ma, Zoey S. Davidson, Tim Still, Piotr Habdas, and A. G. Yodh

Time-dependent electrohydrodynamics of a compressible viscoelastic capsule in the small-deformation limit *(9 pages)* 042607
Rochish M. Thaokar

Reanalysis of the electrode polarization in electrolytic cells limited by blocking electrodes *(4 pages)* 042608
J. Ross Macdonald and G. Barbero

Renormalized jellium model for colloidal mixtures *(9 pages)* 042609
María Isabel García de Soria, Carlos E. Álvarez, and Emmanuel Trizac

Inertial hydrodynamic ratchet: Rectification of colloidal flow in tubes of variable diameter *(8 pages)* 042610
František Slanina

Coarse-grained molecular dynamics simulation of binary charged lipid membranes: Phase separation and morphological dynamics *(11 pages)* 042611
Hiroaki Ito, Yuji Higuchi, and Naofumi Shimokawa

Decoupled length scales for diffusivity and viscosity in glass-forming liquids *(7 pages)* 042612
H. L. Peng and Th. Voigtmann

Rotating colloids in rotating magnetic fields: Dipolar relaxation and hydrodynamic coupling *(13 pages)* 042613
Anna C. H. Coughlan and Michael A. Bevan

Response of a doublet to a nearby dc electrode of uniform potential *(9 pages)* 042614
Christopher L. Wirth and Sri Harsha Nuthalapati

Charged plate in asymmetric electrolytes: One-loop renormalization of surface charge density and Debye length due to ionic correlations *(13 pages)* 042615
Mingnan Ding, Bing-Sui Lu, and Xiangjun Xing

Liquid Crystals

Relaxation with long-period oscillation in defect turbulence of planar nematic liquid crystals *(6 pages)* 042701
Takayuki Narumi, Yosuke Mikami, Tomoyuki Nagaya, Hirotaka Okabe, Kazuhiro Hara, and Yoshiki Hidaka

Computer simulation study of a mesogenic lattice model based on long-range dispersion interactions *(12 pages)* 042702
Silvano Romano

Bragg reflection band width and optical rotatory dispersion of cubic blue-phase liquid crystals *(8 pages)* 042703
Hiroyuki Yoshida, Konkanok Anucha, Yasuhiro Ogawa, Yuto Kawata, Masanori Ozaki, Jun-ichi Fukuda, and Hirotsugu Kikuchi

(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 94, NUMBER 4** **OCTOBER 2016**

Magnetically tunable selective reflection of light by heliconical cholesterics *(5 pages)* 042705
S. M. Salili, J. Xiang, H. Wang, Q. Li, D. A. Paterson, J. M. D. Storey, C. T. Imrie, O. D. Lavrentovich, S. N. Sprunt, J. T. Gleeson, and A. Jákli

Persistent quasiplanar nematic texture: Its properties and topological defects *(10 pages)* 042706
Pawel Pieranski, Maria Helena Godinho, and Simon Čopar

Numerical study of light-induced phase behavior of smectic solids *(14 pages)* 042707
Hayoung Chung, Jaesung Park, and Maenghyo Cho

Magnetic-field-induced stepwise director reorientation and untwisting of a planar cholesteric structure with finite anchoring energy *(15 pages)* 042708
A. N. Zakhlevnykh and V. S. Shavkunov

Self-assembly of colloidal particles in deformation landscapes of electrically driven layer undulations in cholesteric liquid crystals *(11 pages)* 042709
Michael C. M. Varney, Qiaoxuan Zhang, Bohdan Senyuk, and Ivan I. Smalyukh

Films and Interfaces

Stability of Cassie-Baxter wetting states on microstructured surfaces *(15 pages)* 042801
Hao-Yuan Guo, Bo Li, and Xi-Qiao Feng

Simultaneous observation of asymmetric speed-dependent capillary force hysteresis and slow relaxation of a suddenly stopped moving contact line *(12 pages)* 042802
Dongshi Guan, Yong Jian Wang, Elisabeth Charlaix, and Penger Tong

Size-dependent contact angle and the wetting and drying transition of a droplet adsorbed onto a spherical substrate: Line-tension effect *(9 pages)* 042803
Masao Iwamatsu

Interaction of polymer-coated silicon nanocrystals with lipid bilayers and surfactant interfaces *(9 pages)* 042804
Ahmed Elbaradei, Samuel L. Brown, Joseph B. Miller, Sylvio May, and Erik K. Hobbie

Polymorph selection and nucleation pathway in the crystallization of Hertzian spheres *(10 pages)* 042805
Wenze Ouyang, Cuiliu Fu, Zhiwei Sun, and Shenghua Xu

Analytical results for the wrinkling of graphene on nanoparticles *(9 pages)* 042806
M. Guedda, N. Alaa, and M. Benlahsen

Wetting hysteresis of nanodrops on nanorough surfaces *(8 pages)* 042807
Cheng-Chung Chang, Yu-Jane Sheng, and Heng-Kwong Tsao

Shape and coarsening dynamics of strained islands *(8 pages)* 042808
Guido Schifani, Thomas Frisch, Mederic Argentina, and Jean-Noël Aqua

Analytic height correlation function of rough surfaces derived from light scattering *(6 pages)* 042809
M. Zamani, F. Shafiei, S. M. Fazeli, M. C. Downer, and G. R. Jafari

Granular Materials

Binary mixtures of disks and elongated particles: Texture and mechanical properties *(12 pages)* 042901
Emilien Azéma, Itthichai Preechawuttipong, and Farhang Radjai

(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 94, NUMBER 4** **OCTOBER 2016**

Scaling of heat transfer and temperature distribution in granular flows in rotating drums *(5 pages)* 042902
B. Yohannes, H. Emady, K. Anderson, I. Paredes, M. Javed, W. Borghard, F. J. Muzzio, B. J. Glasser, and A. M. Cuitiño

Computer simulation of the effect of deformation on the morphology and flow properties of porous media *(17 pages)* 042903
Sahar Bakhshian and Muhammad Sahimi

Solid Mechanics

Evolution of a primary pulse in the granular dimers mounted on a linear elastic foundation: An analytical and numerical study *(15 pages)* 043001
Zaid Ahsan and K. R. Jayaprakash

Uncovering the deformation mechanisms of origami metamaterials by introducing generic degree-four vertices *(11 pages)* 043002
Hongbin Fang, Suyi Li, Huimin Ji, and K. W. Wang

Mesoscopic approach to subcritical fatigue crack growth *(13 pages)* 043003
Maycon S. Araújo, André P. Vieira, José S. Andrade, Jr., and Hans J. Herrmann

Fluid Dynamics

Multiscaling in superfluid turbulence: A shell-model study *(8 pages)* 043101
Vishwanath Shukla and Rahul Pandit

Diffusion in anisotropic fully developed turbulence: Turbulent Prandtl number *(14 pages)* 043102
E. Jurčišinová and M. Jurčišin

Connections between centrifugal, stratorotational, and radiative instabilities in viscous Taylor-Couette flow *(11 pages)* 043103
Colin Leclercq, Florian Nguyen, and Rich R. Kerswell

Extreme dissipation event due to plume collision in a turbulent convection cell *(8 pages)* 043104
Jörg Schumacher and Janet D. Scheel

Geometric effects on electrocapillarity in nanochannels with an overlapped electric double layer *(11 pages)* 043105
Jung A. Lee and In Seok Kang

Fingering instability and mixing of a blob in porous media *(13 pages)* 043106
Satyajit Pramanik and Manoranjan Mishra

Testing the limits of the spatial Markov model for upscaling transport: The role of nonmonotonic effective velocity autocorrelations *(12 pages)* 043107
Nicole L. Sund, Diogo Bolster, and David A. Benson

Heat and momentum transfer for magnetoconvection in a vertical external magnetic field *(7 pages)* 043108
Till Zürner, Wenjun Liu, Dmitry Krasnov, and Jörg Schumacher

Effect of the energy-spectrum law on clustering patterns for inertial particles subjected to gravity in kinematic simulation *(12 pages)* 043109
F. C. G. A. Nicolleau, M. Farhan, and A. F. Nowakowski

(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 94, NUMBER 4** **OCTOBER 2016**

Stability of thin liquid curtains *(8 pages)* 043110
E. S. Benilov, R. Barros, and S. B. G. O'Brien

Lift force due to odd Hall viscosity *(4 pages)* 043111
E. Kogan

Dynamic response of a thin sessile drop of conductive liquid to an abruptly applied or removed electric field *(13 pages)* 043112
L. T. Corson, N. J. Mottram, B. R. Duffy, S. K. Wilson, C. Tsakonas, and C. V. Brown

Beyond Darcy's law: The role of phase topology and ganglion dynamics for two-fluid flow *(10 pages)* 043113
Ryan T. Armstrong, James E. McClure, Mark A. Berrill, Maja Rücker, Steffen Schlüter, and Steffen Berg

Nonaxisymmetric disturbances in compound liquid jets falling under gravity *(8 pages)* 043114
Muhammad F. Afzaal and Jamal Uddin

Density profiles around $A + B \rightarrow C$ reaction-diffusion fronts in partially miscible systems: A general classification *(12 pages)* 043115
V. Loodts, P. M. J. Trevelyan, L. Rongy, and A. De Wit

Plasma Physics

Bifurcation and hysteresis of plasma edge transport in a flux-driven system *(5 pages)* 043201
B. Li, X. Y. Wang, C. K. Sun, A. Zhou, D. Liu, C. H. Ma, and X. G. Wang

Brewster angle and reflectivity of optically nonuniform dense plasmas *(8 pages)* 043202
G. Norman and I. Saitov

Chaos of energetic positron orbits in a dipole magnetic field and its potential application to a new injection scheme *(9 pages)* 043203
H. Saitoh, Z. Yoshida, Y. Yano, M. Nishiura, Y. Kawazura, J. Horn-Stanja, and T. Sunn Pedersen

Autoresonances of $m = 2$ diocotron oscillations in non-neutral electron plasmas *(6 pages)* 043204
K. Gomberoff, H. Higaki, C. Kaga, K. Ito, and H. Okamoto

Atomic bound state and scattering properties of effective momentum-dependent potentials *(14 pages)* 043205
Gautham Dharuman, John Verboncoeur, Andrew Christlieb, and Michael S. Murillo

Computational Physics

Topology-optimized carpet cloaks based on a level-set boundary expression *(5 pages)* 043301
Garuda Fujii and Tsuyoshi Ueta

Stabilizing the thermal lattice Boltzmann method by spatial filtering *(11 pages)* 043302
J. J. J. Gillissen

Explicit symplectic approximation of nonseparable Hamiltonians: Algorithm and long time performance *(10 pages)* 043303
Molei Tao

Comparison of the lattice Boltzmann equation and discrete unified gas-kinetic scheme methods for direct numerical simulation of decaying turbulent flows *(23 pages)* 043304
Peng Wang, Lian-Ping Wang, and Zhaoli 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 94, NUMBER 4** **OCTOBER 2016**

Size consistency in smoothed dissipative particle dynamics *(20 pages)* 043305
Gérôme Faure, Jean-Bernard Maillet, Julien Roussel, and Gabriel Stoltz

Lattice Boltzmann model for incompressible axisymmetric thermal flows through porous media *(12 pages)* 043306
Kods Grissa, Raoudha Chaabane, Zied Lataoui, Adel Benselama, Yves Bertin, and Abdelmajid Jemni

Data assimilation for massive autonomous systems based on a second-order adjoint method *(10 pages)* 043307
Shin-ichi Ito, Hiromichi Nagao, Akinori Yamanaka, Yuhki Tsukada, Toshiyuki Koyama, Masayuki Kano, and Junya Inoue

Magnetic phase transition in coupled spin-lattice systems: A replica-exchange Wang-Landau study *(5 pages)* 043308
Dilina Perera, Thomas Vogel, and David P. Landau

Numerical simulation of particulate flows using a hybrid of finite difference and boundary integral methods *(18 pages)* 043309
Amitabh Bhattacharya and Tejas Kesarkar

Polariton condensation threshold investigation through the numerical resolution of the generalized Gross-Pitaevskii equation *(9 pages)* 043310
Hamis Gargoubi, Thierry Guillet, Sihem Jaziri, Jalloul Balti, and Brahim Guizal

Solution to sign problems in models of interacting fermions and quantum spins *(8 pages)* 043311
Emilie Huffman and Shailesh Chandrasekharan

Improved dynamical scaling analysis using the kernel method for nonequilibrium relaxation *(9 pages)* 043312
Yuki Echinaka and Yukiyasu Ozeki

Revised Chapman-Enskog analysis for a class of forcing schemes in the lattice Boltzmann method *(8 pages)* 043313
Q. Li, P. Zhou, and H. J. Yan

Decoupled scheme based on the Hermite expansion to construct lattice Boltzmann models for the compressible Navier-Stokes equations with arbitrary specific heat ratio *(9 pages)* 043314
Kainan Hu, Hongwu Zhang, and Shaojuan Geng

Two-scale analysis of a tight gas sandstone *(13 pages)* 043316
Yang Song, C. A. Davy, Thang Nguyen Kim, D. Troadec, G. Hauss, L. Jeannin, and P. M. Adler

Solution of the nonlinear inverse scattering problem by T-matrix completion. I. Theory *(14 pages)* 043317
Howard W. Levinson and Vadim A. Markel

Solution of the nonlinear inverse scattering problem by T-matrix completion. II. Simulations *(15 pages)* 043318
Howard W. Levinson and Vadim A. Markel

Simulation of Rutherford backscattering spectrometry from arbitrary atom structures *(12 pages)* 043319
S. Zhang (张硕), K. Nordlund, F. Djurabekova, Y. Zhang, G. Velisa, and T. S. Wang

Simulation of dissolution in porous media in three dimensions with lattice Boltzmann, finite-volume, and surface-rescaling methods *(11 pages)* 043320
F. Gray, J. Cen, and E. S. Boek

Adaptive molecular resolution approach in Hamiltonian form: An asymptotic analysis *(11 pages)* 043321
Jinglong Zhu, Rupert Klein, and Luigi Delle Site

(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 94, NUMBER 4** **OCTOBER 2016**

☞ Monte Carlo method for critical systems in infinite volume: The planar Ising model *(20 pages)* 043322
Victor Herdeiro and Benjamin Doyon

Renormalized multicanonical sampling in multiple dimensions *(6 pages)* 043323
Yong Hwan Lee and David Yevick

COMMENTS

Comment on "Flow-induced arrest of spatiotemporal chaos and transition to a stationary pattern in the Gray-Scott model" *(3 pages)* 046201
Igal Berenstein, Carsten Beta, and Yannick De Decker

Reply to "Comment on 'Flow-induced arrest of spatiotemporal chaos and transition to a stationary pattern in the Gray-Scott model' " *(1 page)* 046202
Debojyoti Das

☞ 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).