PHYSICAL REVIEW E **THIRD SERIES, VOLUME 91, NUMBER 2** **FEBRUARY 2015**

Reply to "Comment on 'Casimir force in the O($n \to \infty$) model with free boundary conditions' " *(3 pages)* 026102
Daniel Dantchev, Jonathan Bergknoff, and Joseph Rudnick

Comment on "Calculations for the one-dimensional soft Coulomb problem and the hard Coulomb limit" *(2 pages)* 027301
M. A. Carrillo-Bernal, H. N. Núñez-Yépez, A. L. Salas-Brito, and Didier A. Solis

Reply to "Comment on 'Calculations for the one-dimensional soft Coulomb problem and the hard Coulomb limit'" *(3 pages)* 027302
Daniel H. Gebremedhin and Charles A. Weatherford

ERRATA

Erratum: Social significance of community structure: Statistical view [Phys. Rev. E **91**, 012801 (2015)] *(1 page)* . . . . . 029901(E)
Hui-Jia Li and Jasmine J. Daniels

Publisher's Note: Benchmark values for molecular two-electron integrals arising from the Dirac equation [Phys. Rev. E **91**, 023303 (2015)] *(1 page)* . . . . . 029902(E)
A. Bağcı and P. E. Hoggan

Publisher's Note: Active Brownian particles escaping a channel in single file [Phys. Rev. E **91**, 022109 (2015)] *(1 page)* . . . . . 029903(E)
Emanuele Locatelli, Fulvio Baldovin, Enzo Orlandini, and Matteo Pierno

Erratum: Efficiency of harvesting energy from colored noise by linear oscillators [Phys. Rev. E **88**, 022124 (2013)] *(2 pages)* . . . . . 029904(E)
Adrià Salvador Palau, Vicenç Méndez, Daniel Campos, and Werner Horsthemke

Publisher's Note: Generalization of Darcy's law for Bingham fluids in porous media: From flow-field statistics to the flow-rate regimes [Phys. Rev. E **91**, 023011 (2015)] *(1 page)* . . . . . 029905(E)
Thibaud Chevalier and Laurent Talon

Publisher's Note: Binding polynomial in molecular self-assembly [Phys. Rev. E **89**, 062138 (2014)] *(1 page)* . . . . 029906(E)
Andrew A. Mosunov, Kristina A. Rybakova, Olga V. Rogova, and Maxim P. Evstigneev

PHYSICAL REVIEW E THIRD SERIES, VOLUME 91, NUMBER 2 FEBRUARY 2015

Soliton transport in tubular networks: Transmission at vertices in the shrinking limit *(8 pages)* 023209
Hannes Uecker, Daniel Grieser, Zarif Sobirov, Doniyor Babajanov, and Davron Matrasulov

Bilinearization of the generalized coupled nonlinear Schrödinger equation with variable coefficients and gain and dark-bright pair soliton solutions *(11 pages)* 023210
Sushmita Chakraborty, Sudipta Nandy, and Abhijit Barthakur

Computational Physics

Multipseudopotential interaction: A solution for thermodynamic inconsistency in pseudopotential lattice Boltzmann models *(13 pages)* 023301
Sorush Khajepor, John Wen, and Baixin Chen

Phasing a segmented telescope *(12 pages)* 023302
Irina Paykin, Lee Yacobi, Joan Adler, and Erez N. Ribak

Benchmark values for molecular two-electron integrals arising from the Dirac equation *(10 pages)* 023303
A. Bağcı and P. E. Hoggan

Lattice Boltzmann formulation for conjugate heat transfer in heterogeneous media *(12 pages)* 023304
Hamid Karani and Christian Huber

Improved forcing scheme in pseudopotential lattice Boltzmann methods for multiphase flow at arbitrarily high density ratios *(12 pages)* 023305
Daniel Lycett-Brown and Kai H. Luo

Analysis of the phase transition in the two-dimensional Ising ferromagnet using a Lempel-Ziv string-parsing scheme and black-box data-compression utilities *(11 pages)* 023306
O. Melchert and A. K. Hartmann

Analysis and improvement of Brinkman lattice Boltzmann schemes: Bulk, boundary, interface. Similarity and distinctness with finite elements in heterogeneous porous media *(32 pages)* 023307
Irina Ginzburg, Goncalo Silva, and Laurent Talon

Free energies of molecular clusters determined by guided mechanical disassembly *(13 pages)* 023308
Hoi Yu Tang and Ian J. Ford

Meshless lattice Boltzmann method for the simulation of fluid flows *(12 pages)* 023310
S. Hossein Musavi and Mahmud Ashrafizaadeh

Detecting vortices in superconductors: Extracting one-dimensional topological singularities from a discretized complex scalar field *(12 pages)* 023311
Carolyn L. Phillips, Tom Peterka, Dmitry Karpeyev, and Andreas Glatz

Reaction rates for mesoscopic reaction-diffusion kinetics *(12 pages)* 023312
Stefan Hellander, Andreas Hellander, and Linda Petzold

Fluctuating multicomponent lattice Boltzmann model *(24 pages)* 023313
D. Belardinelli, M. Sbragaglia, L. Biferale, M. Gross, and F. Varnik

COMMENTS

Comment on "Casimir force in the O($n \to \infty$) model with free boundary conditions" *(3 pages)* 026101
H. W. Diehl, Daniel Grüneberg, Martin Hasenbusch, Alfred Hucht, Sergei B. Rutkevich, and Felix M. Schmidt

(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 91, NUMBER 2 FEBRUARY 2015

Plasma Physics

Permutation entropy and statistical complexity analysis of turbulence in laboratory plasmas and the solar wind *(7 pages)* 023101
P. J. Weck, D. A. Schaffner, M. R. Brown, and R. T. Wicks

Ion potential in warm dense matter: Wake effects due to streaming degenerate electrons *(16 pages)* 023102
Zhandos Moldabekov, Patrick Ludwig, Michael Bonitz, and Tlekkabul Ramazanov

Ion separation effects in mixed-species ablators for inertial-confinement-fusion implosions *(7 pages)* 023103
Peter Amendt, Claudio Bellei, J. Steven Ross, and Jay Salmonson

Role of charge transfer in heavy-ion-beam–plasma interactions at intermediate energies *(7 pages)* 023104
A. Ortner, A. Frank, A. Blažević, and M. Roth

Ab initio calculation of shocked xenon reflectivity *(10 pages)* 023105
G. Norman, I. Saitov, V. Stegailov, and P. Zhilyaev

Equations of state, transport properties, and compositions of argon plasma: Combination of self-consistent fluid variation theory and linear response theory *(11 pages)* 023106
W. L. Quan, Q. F. Chen, Z. J. Fu, X. W. Sun, J. Zheng, and Y. J. Gu

Self-generated magnetic dipoles in weakly magnetized beam-plasma system *(7 pages)* 023107
Qing Jia, Kunioki Mima, Hong-bo Cai, Toshihiro Taguchi, Hideo Nagatomo, and X. T. He

Practical expressions for the internal energy and pressure of Yukawa fluids *(5 pages)* 023108
Sergey A. Khrapak and Hubertus M. Thomas

Classical Physics

Symmetry breaking of solitons in two-dimensional complex potentials *(9 pages)* 023201
Jianke Yang

Symmetric solitonic excitations of the (1 + 1)-dimensional Abelian-Higgs classical vacuum *(7 pages)* 023202
F. K. Diakonos, G. C. Katsimiga, X. N. Maintas, and C. E. Tsagkarakis

Stability of optical solitons in parity-time-symmetric optical lattices with competing cubic and quintic nonlinearities *(9 pages)* 023203
Lijuan Ge, Ming Shen, Taocheng Zang, Chunlan Ma, and Lu Dai

Acoustic solitons in waveguides with Helmholtz resonators: Transmission line approach *(11 pages)* 023204
V. Achilleos, O. Richoux, G. Theocharis, and D. J. Frantzeskakis

Optical rogue waves associated with the negative coherent coupling in an isotropic medium *(5 pages)* 023205
Wen-Rong Sun, Bo Tian, Yan Jiang, and Hui-Ling Zhen

Conductivity of periodic composites made of matrix and polydispersed aggregates *(8 pages)* 023206
Quy Dong To and Guy Bonnet

Detecting radiation reaction at moderate laser intensities *(9 pages)* 023207
Thomas Heinzl, Chris Harvey, Anton Ilderton, Mattias Marklund, Stepan S. Bulanov, Sergey Rykovanov, Carl B. Schroeder, Eric Esarey, and Wim P. Leemans

Nonlinear resonances and energy transfer in finite granular chains *(8 pages)* 023208
Joseph Lydon, Georgios Theocharis, and Chiara Daraio

(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 91, NUMBER 2** **FEBRUARY 2015**

Normal velocity freeze-out of the Richtmyer-Meshkov instability when a rarefaction is reflected *(12 pages)* 023005
J. G. Wouchuk and T. Sano

Marangoni instability of a liquid film flow with viscous dissipation *(9 pages)* 023006
Michele Celli, Antonio Barletta, and Leonardo S. de B. Alves

Wall-mode instability in plane shear flow of viscoelastic fluid over a deformable solid *(11 pages)* 023007
Paresh Chokshi, Piyush Bhade, and V. Kumaran

Dewetting films with inclined contact lines *(7 pages)* 023008
Peng Gao, Lei Li, and Xi-Yun Lu

Non-Newtonian flow effects on the coalescence and mixing of initially stationary droplets of shear-thinning fluids *(10 pages)* 023009
Kai Sun, Tianyou Wang, Peng Zhang, and Chung K. Law

Numerical and experimental study of an invisibility carpet in a water channel *(7 pages)* 023010
Guillaume Dupont, Olivier Kimmoun, Bernard Molin, Sebastien Guenneau, and Stefan Enoch

Generalization of Darcy's law for Bingham fluids in porous media: From flow-field statistics to the flow-rate regimes *(5 pages)* 023011
Thibaud Chevalier and Laurent Talon

Optimal design of Purcell's three-link swimmer *(6 pages)* 023012
Laetitia Giraldi, Pierre Martinon, and Marta Zoppello

Numerical investigation of dynamic effects for sliding drops on wetting defects *(10 pages)* 023013
Andrea Cavalli, Michiel Musterd, and Frieder Mugele

Self-propulsion of a spherical electric or magnetic microbot in a polar viscous fluid *(6 pages)* 023014
B. U. Felderhof

Free-path distribution and Knudsen-layer modeling for gaseous flows in the transition regime *(7 pages)* 023015
Quy Dong To, Céline Léonard, and Guy Lauriat

Saffman-Taylor fingers with kinetic undercooling *(9 pages)* 023016
Bennett P. J. Gardiner, Scott W. McCue, Michael C. Dallaston, and Timothy J. Moroney

Resonant and antiresonant bouncing droplets *(5 pages)* 023017
M. Hubert, D. Robert, H. Caps, S. Dorbolo, and N. Vandewalle

Decoupling translational and rotational effects on the phase synchronization of rotating helices *(10 pages)* 023018
Jonathan H. Tu, Murat Arcak, and Michel M. Maharbiz

Low-to-moderate Reynolds number swirling flow in an annular channel with a rotating end wall *(16 pages)* 023019
Laurent Davoust, Jean-Luc Achard, and Laurent Drazek

Azimuthal field instability in a confined ferrofluid *(8 pages)* 023020
Eduardo O. Dias and José A. Miranda

Bidirectional energy cascade in surface capillary waves *(9 pages)* 023021
L. V. Abdurakhimov, M. Arefin, G. V. Kolmakov, A. A. Levchenko, Yu. V. Lvov, and I. A. Remizov

(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 91, NUMBER 2** **FEBRUARY 2015**

Robustness of chimera states for coupled FitzHugh-Nagumo oscillators *(13 pages)* 022917
Iryna Omelchenko, Astero Provata, Johanne Hizanidis, Eckehard Schöll, and Philipp Hövel

Noise robustness of unpredictability in a chaotic laser system: Toward reliable physical random bit generation *(6 pages)* 022918
Masanobu Inubushi, Kazuyuki Yoshimura, and Peter Davis

Breather solutions of the integrable quintic nonlinear Schrödinger equation and their interactions *(11 pages)* 022919
A. Chowdury, D. J. Kedziora, A. Ankiewicz, and N. Akhmediev

Emergent hybrid synchronization in coupled chaotic systems *(6 pages)* 022920
E. Padmanaban, Stefano Boccaletti, and S. K. Dana

Characterization of the chaos-hyperchaos transition based on return times *(5 pages)* 022921
A. N. Pavlov, O. N. Pavlova, Y. K. Mohammad, and J. Kurths

Delay-induced remote synchronization in bipartite networks of phase oscillators *(7 pages)* 022922
Nirmal Punetha, Sangeeta Rani Ujjwal, Fatihcan M. Atay, and Ramakrishna Ramaswamy

Coarsening of stripe patterns: Variations with quench depth and scaling *(10 pages)* 022923
Ashwani K. Tripathi and Deepak Kumar

Localized vegetation patterns, fairy circles, and localized patches in arid landscapes *(8 pages)* 022924
D. Escaff, C. Fernandez-Oto, M. G. Clerc, and M. Tlidi

Dynamics and properties of waves in a modified Noguchi electrical transmission line *(10 pages)* 022925
F. B. Pelap, J. H. Kamga, S. B. Yamgoue, S. M. Ngounou, and J. E. Ndecfo

Analyzing long-term correlated stochastic processes by means of recurrence networks: Potentials and pitfalls *(8 pages)* 022926
Yong Zou, Reik V. Donner, and Jürgen Kurths

Dynamics of intracranial electroencephalographic recordings from epilepsy patients using univariate and bivariate recurrence networks *(18 pages)* 022927
Narayan Puthanmadam Subramaniyam and Jari Hyttinen

Stochastic mean-field formulation of the dynamics of diluted neural networks *(12 pages)* 022928
D. Angulo-Garcia and A. Torcini

Fluid Dynamics

Buoyancy-driven instabilities around miscible $A+B\rightarrow C$ reaction fronts: A general classification *(8 pages)* 023001
P. M. J. Trevelyan, C. Almarcha, and A. De Wit

Dynamics of viscous liquid bridges inside microchannels subject to external oscillatory flow *(10 pages)* 023002
Majid Ahmadlouydarab, Jalel Azaiez, and Zhangxin Chen

Evolution and stability of shock waves in dissipative gases characterized by activated inelastic collisions *(12 pages)* 023003
N. Sirmas and M. I. Radulescu

Observations of spontaneous oscillations in simple two-fluid networks *(5 pages)* 023004
Brian D. Storey, Deborah V. Hellen, Nathaniel J. Karst, and John B. Geddes

(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 91, NUMBER 2** **FEBRUARY 2015**

Critical noise of majority-vote model on complex networks *(6 pages)* 022816
Hanshuang Chen, Chuansheng Shen, Gang He, Haifeng Zhang, and Zhonghuai Hou

Chimera states in time-varying complex networks *(7 pages)* 022817
Arturo Buscarino, Mattia Frasca, Lucia Valentina Gambuzza, and Philipp Hövel

Explosive synchronization with partial degree-frequency correlation *(10 pages)* 022818
Rafael S. Pinto and Alberto Saa

Nonlinear Dynamics and Chaos

Impact of a leader on cluster synchronization *(5 pages)* 022901
Sarika Jalan, Aradhana Singh, Suman Acharyya, and Jürgen Kurths

Front propagation in channels with spatially modulated cross section *(8 pages)* 022902
S. Martens, J. Löber, and H. Engel

State transition induced by higher-order effects and background frequency *(5 pages)* 022904
Chong Liu, Zhan-Ying Yang, Li-Chen Zhao, and Wen-Li Yang

General approach for dealing with dynamical systems with spatiotemporal periodicities *(4 pages)* 022905
Jesús Casado-Pascual, José A. Cuesta, Niurka R. Quintero, and Renato Alvarez-Nodarse

Early effect in time-dependent, high-dimensional nonlinear dynamical systems with multiple resonances *(7 pages)* 022906
Youngyong Park, Younghae Do, Sebastian Altmeyer, Ying-Cheng Lai, and GyuWon Lee

Chimera states on the route from coherence to rotating waves *(5 pages)* 022907
Patrycja Jaros, Yuri Maistrenko, and Tomasz Kapitaniak

Linear instability of a zigzag pattern *(12 pages)* 022908
Tommy Dessup, Thibaud Maimbourg, Christophe Coste, and Michel Saint Jean

Chimera states on the surface of a sphere *(10 pages)* 022909
Mark J. Panaggio and Daniel M. Abrams

Charge flipping vortices in the discrete nonlinear Schrödinger trimer and hexamer *(11 pages)* 022910
Peter Jason and Magnus Johansson

Friction phenomena in the overdamped three-layer model *(6 pages)* 022911
Li-Ping Jia, Jasmina Tekić, Yang Yang, Cang-Long Wang, Wen-Shan Duan, and Lei Yang

Ultradiscrete kinks with supersonic speed in a layered crystal with realistic potentials *(12 pages)* 022912
J. F. R. Archilla, Yu. A. Kosevich, N. Jiménez, V. J. Sánchez-Morcillo, and L. M. García-Raffi

Shear-flow-controlled mode selection in a nonlinear autocatalytic medium *(5 pages)* 022913
S. G. Ayodele, D. Raabe, and F. Varnik

Encoding by control of the symbolic dynamics emitted by a chaotic laser *(9 pages)* 022914
Juan Carlos Martín

Partial synchronization and partial amplitude death in mesoscale network motifs *(12 pages)* 022915
Winnie Poel, Anna Zakharova, and Eckehard Schöll

Transitional behavior in hydrodynamically coupled oscillators *(7 pages)* 022916
S. Box, L. Debono, D. B. Phillips, and S. H. Simpson

(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 91, NUMBER 2** **FEBRUARY 2015**

PART B

Networks and Interdisciplinary Physics

Modeling spontaneous chiral symmetry breaking and deracemization phenomena: Discrete versus continuum approaches *(13 pages)* 022801
Celia Blanco, Josep M. Ribó, and David Hochberg

Detrended fluctuation analysis as a regression framework: Estimating dependence at different scales *(5 pages)* . . . 022802
Ladislav Kristoufek

Anomalous scaling in an age-dependent branching model *(6 pages)* 022803
Stephanie Keller-Schmidt, Murat Tuğrul, Víctor M. Eguíluz, Emilio Hernández-García, and Konstantin Klemm

Unambiguous reconstruction of network structure using avalanche dynamics *(12 pages)* 022804
Timothée Leleu and Kazuyuki Aihara

Sequential defense against random and intentional attacks in complex networks *(13 pages)* 022805
Pin-Yu Chen and Shin-Ming Cheng

Forest-fire model as a supercritical dynamic model in financial systems *(6 pages)* 022806
Deokjae Lee, Jae-Young Kim, Jeho Lee, and B. Kahng

Slow poisoning and destruction of networks: Edge proximity and its implications for biological and infrastructure networks *(5 pages)* 022807
Soumya Jyoti Banerjee, Saptarshi Sinha, and Soumen Roy

Flow and clogging of a sheep herd passing through a bottleneck *(7 pages)* 022808
A. Garcimartín, J. M. Pastor, L. M. Ferrer, J. J. Ramos, C. Martín-Gómez, and I. Zuriguel

Connectivity interplays with age in shaping contagion over networks with vital dynamics *(10 pages)* 022809
Carlo Piccardi, Alessandro Colombo, and Renato Casagrandi

Self-organized correlations lead to explosive synchronization *(10 pages)* 022810
Yang Chen, Zhoujian Cao, Shihong Wang, and Gang Hu

Effect of zealotry in high-dimensional opinion dynamics models *(10 pages)* 022811
Alex Waagen, Gunjan Verma, Kevin Chan, Ananthram Swami, and Raissa D'Souza

Fault-induced delayed voltage recovery in a long inhomogeneous power-distribution feeder *(9 pages)* 022812
Irina Stolbova, Scott Backhaus, and Michael Chertkov

Mean-field approximation for the Sznajd model in complex networks *(7 pages)* 022813
Maycon S. Araújo, Fabio S. Vannucchi, André M. Timpanaro, and Carmen P. C. Prado

Efficient algorithm to compute mutually connected components in interdependent networks *(6 pages)* 022814
S. Hwang, S. Choi, Deokjae Lee, and B. Kahng

Measuring graph similarity through continuous-time quantum walks and the quantum Jensen-Shannon divergence *(12 pages)* 022815
Luca Rossi, Andrea Torsello, and Edwin R. Hancock

(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 91, NUMBER 2** **FEBRUARY 2015**

Reproducible radiation-damage processes in proteins irradiated by intense x-ray pulses *(5 pages)* 022705
Stefan P. Hau-Riege and Brian J. Bennion

Vibronically coherent speed-up of the excitation energy transfer in the Fenna-Matthews-Olson complex *(6 pages)* 022706
P. Nalbach, C. A. Mujica-Martinez, and M. Thorwart

Theoretical analysis of discreteness-induced transition in autocatalytic reaction dynamics *(7 pages)* 022707
Nen Saito and Kunihiko Kaneko

Protein unfolding from free-energy calculations: Integration of the Gaussian network model with bond binding energies *(14 pages)* 022708
Amit Srivastava and Rony Granek

Effective rates from thermodynamically consistent coarse-graining of models for molecular motors with probe particles *(16 pages)* 022709
Eva Zimmermann and Udo Seifert

Differential growth of wrinkled biofilms *(17 pages)* 022710
D. R. Espeso, A. Carpio, and B. Einarsson

Competition between surface adsorption and folding of fibril-forming polypeptides *(5 pages)* 022711
Ran Ni, J. Mieke Kleijn, Sanne Abeln, Martien A. Cohen Stuart, and Peter G. Bolhuis

Effects of extracellular potassium diffusion on electrically coupled neuron networks *(10 pages)* 022712
Xing-Xing Wu and Jianwei Shuai

Line tension of multicomponent bilayer membranes *(8 pages)* 022713
Ashkan Dehghan, Kyle A. Pastor, and An-Chang Shi

Photoactivated biological processes as quantum measurements *(8 pages)* 022714
A. Imamoglu and K. B. Whaley

Charge regulation in ionic solutions: Thermal fluctuations and Kirkwood-Schumaker interactions *(13 pages)* 022715
Nataša Adžić and Rudolf Podgornik

Influence of ibuprofen on phospholipid membranes *(9 pages)* 022716
Sebastian Jaksch, Frederik Lipfert, Alexandros Koutsioubas, Stefan Mattauch, Olaf Holderer, Oxana Ivanova, Henrich Frielinghaus, Samira Hertrich, Stefan F. Fischer, and Bert Nickel

Detachment, futile cycling, and nucleotide pocket collapse in myosin-V stepping *(10 pages)* 022717
Neville J. Boon and Rebecca B. Hoyle

Statistics of a neuron model driven by asymmetric colored noise *(14 pages)* 022718
Finn Müller-Hansen, Felix Droste, and Benjamin Lindner

Modeling the electrical conduction in DNA nanowires: Charge transfer and lattice fluctuation theories *(10 pages)* 022719
S. Behnia and S. Fathizadeh

Polarization of cells and soft objects driven by mechanical interactions: Consequences for migration and chemotaxis *(10 pages)* 022720
M. Leoni and P. Sens

Influence of organelle geometry on the apparent binding kinetics of peripheral membrane proteins *(7 pages)* 022721
Julia Hoffmann, Rolf Fickentscher, and Matthias Weiss

(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 91, NUMBER 2** **FEBRUARY 2015**

Formation and arrangement of pits by a corrosive gas *(13 pages)* 022403
James Burridge and Robert Inkpen

Confined disclinations: Exterior versus material constraints in developable thin elastic sheets *(7 pages)* 022404
Efi Efrati, Luka Pocivavsek, Ruben Meza, Ka Yee C. Lee, and Thomas A. Witten

Localized microjetting in the collapse of surface macrocavities *(8 pages)* 022405
K. L. Olney, P.-H. Chiu, D. J. Benson, A. Higgins, M. Serge, and V. F. Nesterenko

Implications of interface conventions for morphometric thermodynamics *(11 pages)* 022406
Andreas Reindl, Markus Bier, and S. Dietrich

Interphase anisotropy effects on lamellar eutectics: A numerical study *(13 pages)* 022407
Supriyo Ghosh, Abhik Choudhury, Mathis Plapp, Sabine Bottin-Rousseau, Gabriel Faivre, and Silvère Akamatsu

Liquid Crystals

Molecular organization of nematic liquid crystals between concentric cylinders: Role of the elastic anisotropy *(7 pages)* 022501
C. Chiccoli, P. Pasini, L. R. Evangelista, R. T. Teixeira-Souza, and C. Zannoni

Polarization-stiffened ferroelectric liquid crystals: A thickness-independent bistable switching voltage with a lower limit of about 2 V and the transition to thresholdless switching *(11 pages)* 022502
Michael J. O'Callaghan

Anisotropy of the electro-optic Kerr effect in polymer-stabilized blue phases *(6 pages)* 022503
Yuto Kawata, Hiroyuki Yoshida, Shu Tanaka, Anucha Konkanok, Masanori Ozaki, and Hirotsugu Kikuchi

Polymers

Using a Péclet number for the translocation of a polymer through a nanopore to tune coarse-grained simulations to experimental conditions *(10 pages)* 022601
Hendrick W. de Haan, David Sean, and Gary W. Slater

Structuring of polymer solutions upon solvent evaporation *(6 pages)* 022602
C. Schaefer, P. van der Schoot, and J. J. Michels

Atomistic study of macroscopic analogs to short-chain molecules *(5 pages)* 022603
Kyle J. Welch, Clayton S. G. Kilmer, and Eric I. Corwin

Biological Physics

External forces influence the elastic coupling effects during cargo transport by molecular motors *(12 pages)* 022701
Florian Berger, Corina Keller, Stefan Klumpp, and Reinhard Lipowsky

Effective reaction rates in diffusion-limited phosphorylation-dephosphorylation cycles *(15 pages)* 022702
Paulina Szymańska, Marek Kochańczyk, Jacek Miękisz, and Tomasz Lipniacki

Cardiac contraction induces discordant alternans and localized block *(12 pages)* 022703
M. Radszuweit, E. Alvarez-Lacalle, M. Bär, and B. Echebarria

Aggregation-fragmentation model of robust concentration gradient formation *(8 pages)* 022704
Timothy E. Saunders

(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 91, NUMBER 2** **FEBRUARY 2015**

Statistics of conserved quantities in mechanically stable packings of frictionless disks above jamming *(10 pages)* 022207
Yegang Wu and S. Teitel

Colloids and Complex Fluids

Inherent structures, fragility, and jamming: Insights from quasi-one-dimensional hard disks *(12 pages)* 022301
Mahdi Zaeifi Yamchi, S. S. Ashwin, and Richard K. Bowles

Significance of thermal fluctuations and hydrodynamic interactions in receptor-ligand-mediated adhesive dynamics of a spherical particle in wall-bound shear flow *(12 pages)* 022302
K. V. Ramesh, R. Thaokar, J. Ravi Prakash, and R. Prabhakar

Electrophoresis of electrically neutral porous spheres induced by selective affinity of ions *(10 pages)* 022303
Yuki Uematsu

Dynamic simulation of sediment films of Yukawa-stabilized particles *(6 pages)* 022304
Damien D. Brewer and Satish Kumar

Swelling of *p*H-sensitive hydrogels *(15 pages)* 022305
A. D. Drozdov and J. deClaville Christiansen

Active swarms on a sphere *(13 pages)* 022306
Rastko Sknepnek and Silke Henkes

Ray-theory approach to electrical-double-layer interactions *(6 pages)* 022307
Ory Schnitzer

Impact of hydrodynamics on effective interactions in suspensions of active and passive matter *(7 pages)* 022308
Ryan C. Krafnick and Angel E. García

Liquid-vapor interface of the Stockmayer fluid in a uniform external field *(9 pages)* 022309
Stan G. Moore, Mark J. Stevens, and Gary S. Grest

Rotational dynamics of simple asymmetric molecules *(7 pages)* 022310
D. Fragiadakis and C. M. Roland

Formation and liquid permeability of dense colloidal cube packings *(11 pages)* 022311
Sonja I. R. Castillo, Dominique M. E. Thies-Weesie, and Albert P. Philipse

Quantum effects in the dynamics of deeply supercooled water *(10 pages)* 022312
A. L. Agapov, A. I. Kolesnikov, V. N. Novikov, R. Richert, and A. P. Sokolov

Transport and diffusion properties of interacting colloidal particles in two-dimensional microchannels with a periodic potential *(8 pages)* 022313
Ullrich Siems and Peter Nielaba

Films, Interfaces, and Solids

Atomistic mechanisms of intermittent plasticity in metals: Dislocation avalanches and defect cluster pinning *(7 pages)* 022401
Tomoaki Niiyama and Tomotsugu Shimokawa

Mesoscopic nucleation theory for confined systems: A one-parameter model *(16 pages)* 022402
Miguel A. Durán-Olivencia and James F. Lutsko

(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 91, NUMBER 2** **FEBRUARY 2015**

Asymptotic densities of ballistic Lévy walks *(9 pages)* 022131
D. Froemberg, M. Schmiedeberg, E. Barkai, and V. Zaburdaev

Fourier Monte Carlo renormalization-group approach to crystalline membranes *(12 pages)* 022132
A. Tröster

Energy landscape of the finite-size mean-field 2-spin spherical model and topology trivialization *(9 pages)* 022133
Dhagash Mehta, Jonathan D. Hauenstein, Matthew Niemerg, Nicholas J. Simm, and Daniel A. Stariolo

Vigorous thermal excitations in a double-tetrahedral chain of localized Ising spins and mobile electrons mimic a temperature-driven first-order phase transition *(9 pages)* 022134
Lucia Gálisová and Jozef Strečka

Consistent thermodynamic framework for interacting particles by neglecting thermal noise *(12 pages)* 022135
Fernando D. Nobre, Evaldo M. F. Curado, Andre M. C. Souza, and Roberto F. S. Andrade

Constitutive relation for nonlinear response and universality of efficiency at maximum power for tight-coupling heat engines *(8 pages)* 022136
Shiqi Sheng and Z. C. Tu

Nonextensive thermodynamic functions in the Schrödinger-Gibbs ensemble *(13 pages)* 022137
J. L. Alonso, A. Castro, J. Clemente-Gallardo, J. C. Cuchí, P. Echenique, J. G. Esteve, and F. Falceto

Phase diagram of fluid phases in ^{3}He-^{4}He mixtures *(14 pages)* 022138
N. Farahmand Bafi, A. Maciołek, and S. Dietrich

Harmonically bound Brownian motion in fluids under shear: Fokker-Planck and generalized Langevin descriptions *(15 pages)* 022139
Humberto Híjar

Leaf-excluded percolation in two and three dimensions *(6 pages)* 022140
Zongzheng Zhou, Xiao Xu, Timothy M. Garoni, and Youjin Deng

Granular Materials

Origin of a depth-independent drag force induced by stirring in granular media *(6 pages)* 022201
François Guillard, Yoël Forterre, and Olivier Pouliquen

Penetration depth scaling for impact into wet granular packings *(7 pages)* 022202
T. A. Brzinski III, J. Schug, K. Mao, and D. J. Durian

Bonded-cell model for particle fracture *(9 pages)* 022203
Duc-Hanh Nguyen, Emilien Azéma, Philippe Sornay, and Farhang Radjai

Numerical investigation of the cylinder movement in granular matter *(9 pages)* 022204
Xue Zhang, Daichao Sheng, George P. Kouretzis, Kristian Krabbenhoft, and Scott W. Sloan

Sound pulse broadening in stressed granular media *(8 pages)* 022205
Vincent Langlois and Xiaoping Jia

Phase transition and flow-rate behavior of merging granular flows *(7 pages)* 022206
Mao-Bin Hu, Qi-Yi Liu, Rui Jiang, Meiying Hou, and Qing-Song Wu

(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 91, NUMBER 2** **FEBRUARY 2015**

Active polymer translocation in the three-dimensional domain *(8 pages)* 022113
A. Fiasconaro, J. J. Mazo, and F. Falo

Stochastic thermodynamics of a tagged particle within a harmonic chain *(15 pages)* 022114
David Lacoste and Michael A. Lomholt

Exact results for a noise-induced bistable system *(8 pages)* 022115
Bahram Houchmandzadeh and Marcel Vallade

Scaling of the spanning threshold in gradient percolation *(9 pages)* 022116
Lincoln Paterson

Optimal recruitment strategies for groups of interacting walkers with leaders *(13 pages)* 022117
Ricardo Martínez-García, Cristóbal López, and Federico Vazquez

Scaling behavior near jamming in random sequential adsorption *(8 pages)* 022118
B. E. Purvis, L. Reeve, J. A. D. Wattis, and Y. Mao

Exactly solvable model of a coalescing random graph *(8 pages)* 022119
A. A. Lushnikov

Understanding the ideal glass transition: Lessons from an equilibrium study of hard disks in a channel *(15 pages)* 022120
M. J. Godfrey and M. A. Moore

Peer pressure: Enhancement of cooperation through mutual punishment *(6 pages)* 022121
Han-Xin Yang, Zhi-Xi Wu, Zhihai Rong, and Ying-Cheng Lai

Quantum spherical spins with local symmetry *(9 pages)* 022122
Pedro R. S. Gomes and P. F. Bienzobaz

Extreme-value statistics of work done in stretching a polymer in a gradient flow *(5 pages)* 022123
M. Vucelja, K. S. Turitsyn, and M. Chertkov

Translational diffusion of water inside hydrophobic carbon micropores studied by neutron spectroscopy and molecular dynamics simulation *(9 pages)* 022124
S. O. Diallo, L. Vlcek, E. Mamontov, J. K. Keum, Jihua Chen, J. S. Hayes Jr., and A. A. Chialvo

Emergence of jams in the generalized totally asymmetric simple exclusion process *(16 pages)* 022125
A. E. Derbyshev, A. M. Povolotsky, and V. B. Priezzhev

Fluctuations of work in nearly adiabatically driven open quantum systems *(13 pages)* 022126
S. Suomela, J. Salmilehto, I. G. Savenko, T. Ala-Nissila, and M. Möttönen

Anomalous velocity fluctuation in one-dimensional defect turbulence *(6 pages)* 022127
Yusuke Uchiyama, Takanori Kadoya, and Hidetoshi Konno

Friction and noise for a probe in a nonequilibrium fluid *(7 pages)* 022128
Christian Maes and Stefano Steffenoni

Exact finite-size corrections for the spanning-tree model under different boundary conditions *(10 pages)* 022129
N. Sh. Izmailian and R. Kenna

Brownian dynamics: From glassy to trivial *(8 pages)* 022130
Hugo Jacquin, Bongsoo Kim, Kyozi Kawasaki, and Frédéric van Wijland

(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 91, NUMBER 2 FEBRUARY 2015

Fluid Dynamics

Pair dispersion of turbulent premixed flame elements *(5 pages)* . . . . . 021001(R)
Swetaprovo Chaudhuri

Plasma Physics

High-density carbon capsule experiments on the national ignition facility *(5 pages)* . . . . . 021101(R)
J. S. Ross, D. Ho, J. Milovich, T. Döppner, J. McNaney, A. G. MacPhee, A. Hamza, J. Biener, H. F. Robey, E. L. Dewald, R. Tommasini, L. Divol, S. Le Pape, L. Berzak Hopkins, P. M. Celliers, O. Landen, N. B. Meezan, and A. J. Mackinnon

ARTICLES

Statistical Physics

Rectified motion in an asymmetric channel: The role of hydrodynamic interactions with walls *(6 pages)* 022101
Behzad Golshaei and Ali Najafi

Random walk model of subdiffusion in a system with a thin membrane *(9 pages)* 022102
Tadeusz Kosztołowicz

Active matter beyond mean-field: Ring-kinetic theory for self-propelled particles *(25 pages)* 022103
Yen-Liang Chou and Thomas Ihle

Families of Fokker-Planck equations and the associated entropic form for a distinct steady-state probability distribution with a known external force field *(5 pages)* 022104
Somayeh Asgarani

Third law of thermodynamics as a key test of generalized entropies *(7 pages)* 022105
E. P. Bento, G. M. Viswanathan, M. G. E. da Luz, and R. Silva

Competing reaction processes on a lattice as a paradigm for catalyst deactivation *(12 pages)* 022106
E. Abad and J. J. Kozak

Shear-stress relaxation and ensemble transformation of shear-stress autocorrelation functions *(8 pages)* 022107
J. P. Wittmer, H. Xu, and J. Baschnagel

Scaling phenomena driven by inhomogeneous conditions at first-order quantum transitions *(11 pages)* 022108
Massimo Campostrini, Jacopo Nespolo, Andrea Pelissetto, and Ettore Vicari

Active Brownian particles escaping a channel in single file *(8 pages)* 022109
Emanuele Locatelli, Fulvio Baldovin, Enzo Orlandini, and Matteo Pierno

Thermodynamic Casimir effect in films: The exchange cluster algorithm *(22 pages)* 022110
Martin Hasenbusch

Thermodynamic properties of supercritical carbon dioxide: Widom and Frenkel lines *(5 pages)* 022111
Yu. D. Fomin, V. N. Ryzhov, E. N. Tsiok, and V. V. Brazhkin

Complete graph asymptotics for the Ising and random-cluster models on five-dimensional grids with a cyclic boundary *(8 pages)* 022112
P. H. Lundow and K. Markström

(Continued)

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

PHYSICAL REVIEW E™

For editorial and subscription correspondence, please see inside front cover
(ISSN: 1539-3755)

PERIODICALS
Postmaster send address changes to:

APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 91, NUMBER 2
PARTS A AND B

CONTENTS

FEBRUARY 2015

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 020101(R)–022721, and Part B pages 022801–029906(E).

PART A

RAPID COMMUNICATIONS

Statistical Physics

Linear thermal circulator based on Coriolis forces *(5 pages)* . . . . . 020101(R)
Huanan Li and Tsampikos Kottos

Evidence of a one-step replica symmetry breaking in a three-dimensional Potts glass model *(4 pages)* . . . . . 020102(R)
Takashi Takahashi and Koji Hukushima

Colloids and Complex Fluids

Shear-accelerated crystallization in a supercooled atomic liquid *(5 pages)* . . . . . 020301(R)
Zhen Shao, Jonathan P. Singer, Yanhui Liu, Ze Liu, Huiping Li, Manesh Gopinadhan, Corey S. O'Hern, Jan Schroers, and Chinedum O. Osuji

Films, Interfaces, and Solids

Tuning surface wettability by designing hairy structures *(5 pages)* . . . . . 020401(R)
Han-Wen Pei, Hong Liu, Zhong-Yuan Lu, and You-Liang Zhu

Biological Physics

Gene regulation and noise reduction by coupling of stochastic processes *(5 pages)* . . . . . 020701(R)
Alexandre F. Ramos, José Eduardo M. Hornos, and John Reinitz

Networks and Interdisciplinary Physics

Reservoir computing with a single time-delay autonomous Boolean node *(5 pages)* . . . . . 020801(R)
Nicholas D. Haynes, Miguel C. Soriano, David P. Rosin, Ingo Fischer, and Daniel J. Gauthier

Nonlinear Dynamics and Chaos

Noisy localized structures induced by large noise *(5 pages)* . . . . . 020901(R)
Orazio Descalzi, Carlos Cartes, and Helmut R. Brand

Copyright 2015 by American Physical Society

(Continued)

1539-3755(201502)91:2:B;1-H

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).