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 87, NUMBER 2
PARTS A AND B

CONTENTS

FEBRUARY 2013

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 020101(R)-022604, and Part B pages 022701-029905(E).

PART A

RAPID COMMUNICATIONS

Statistical Physics

Scaling theory of heat transport in quasi-one-dimensional disordered harmonic chains *(5 pages)* . . . . . 020101(R)
Joshua D. Bodyfelt, Mei C. Zheng, Ragnar Fleischmann, and Tsampikos Kottos

Scale-invariant growth processes in expanding space *(5 pages)* . . . . . 020102(R)
Adnan Ali, Robin C. Ball, Stefan Grosskinsky, and Ellák Somfai

Anomalous field-induced growth of fluctuations in dynamics of a biased intruder moving in a quiescent medium *(5 pages)* . . . . . 020103(R)
Olivier Bénichou, Carlos Mejía-Monasterio, and Gleb Oshanin

Everlasting initial memory threshold for rare events in equilibration processes *(4 pages)* . . . . . 020104(R)
J. S. Lee, Chulan Kwon, and Hyunggyu Park

Superdiffusive trajectories in Brownian motion *(4 pages)* . . . . . 020105(R)
Jérôme Duplat, Simon Kheifets, Tongcang Li, Mark G. Raizen, and Emmanuel Villermaux

Weighted networks as randomly reinforced urn processes *(4 pages)* . . . . . 020106(R)
Guido Caldarelli, Alessandro Chessa, Irene Crimaldi, and Fabio Pammolli

Granular Materials

Rheology and shear band suppression in particle and chain mixtures *(4 pages)* . . . . . 020201(R)
I. Regev and C. Reichhardt

Colloids and Complex Fluids

Three-body fluctuation-induced interaction at fluid interfaces: A strong deviation from the pairwise summation *(5 pages)* . . . . . 020301(R)
Ehsan Noruzifar, Jef Wagner, and Roya Zandi

Copyright 2013 by American Physical Society

(Continued)

1539-3755(201302)87:2:A;1-L

PHYSICAL REVIEW E THIRD SERIES, VOLUME 87, NUMBER 2 FEBRUARY 2013

Films, Interfaces, and Crystal Growth

Activated vibrational modes and Fermi resonance in tip-enhanced Raman spectroscopy *(5 pages)* . . . . . 020401(R)
Mengtao Sun, Yurui Fang, Zhenyu Zhang, and Hongxing Xu

Geometry-induced phase transition in fluids: Capillary prewetting *(4 pages)* . . . . . 020402(R)
Petr Yatsyshin, Nikos Savva, and Serafim Kalliadasis

Liquid Crystals

Modulated phase of liquid crystals: Covariant elasticity in the context of soft, achiral smectic-C materials *(4 pages)* 020501(R)
P. R. Venkatramanan, Yashodhan Hatwalne, and N. V. Madhusudana

Modeling the polydomain-monodomain transition of liquid crystal elastomers *(5 pages)* . . . . . 020502(R)
Jonathan K. Whitmer, Tyler F. Roberts, Raj Shekhar, Nicholas L. Abbott, and Juan J. de Pablo

Biological Physics

Biogenic crust dynamics on sand dunes *(5 pages)* . . . . . 020701(R)
Shai Kinast, Ehud Meron, Hezi Yizhaq, and Yosef Ashkenazy

Nonlinear Dynamics and Chaos

Golden spirals as phyllotactic arrangements of optical patterns *(4 pages)* . . . . . 020901(R)
F. Haudin and S. Residori

Fidelity of the quantum δ-kicked accelerator *(4 pages)* . . . . . 020902(R)
R. K. Shrestha, S. Wimberger, J. Ni, W. K. Lam, and G. S. Summy

Fluid Dynamics

Propulsion mechanisms for Leidenfrost solids on ratchets *(4 pages)* . . . . . 021001(R)
Tobias Baier, Guillaume Dupeux, Stefan Herbert, Steffen Hardt, and David Quéré

Computational Physics

Path-integral Monte Carlo method for the local Z_2 Berry phase *(5 pages)* . . . . . 021301(R)
Yuichi Motoyama and Synge Todo

ARTICLES

Statistical Physics

Coupling-parameter expansion in thermodynamic perturbation theory *(7 pages)* 022101
A. Sai Venkata Ramana and S. V. G. Menon

Ising ferromagnet in dimension five: Link and spin overlaps *(5 pages)* 022102
P. H. Lundow and I. A. Campbell

Locally self-similar phase diagram of the disordered Potts model on the hierarchical lattice *(7 pages)* 022103
J-Ch. Anglès d'Auriac and Ferenc Iglói

Phase transition of light on complex quantum networks *(8 pages)* 022104
Arda Halu, Silvano Garnerone, Alessandro Vezzani, and Ginestra Bianconi

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Directed transport induced by α-stable Lévy noises in weakly asymmetric periodic potentials *(6 pages)* 022105
S. Risau-Gusman, S. Ibáñez, and S. Bouzat

NVU perspective on simple liquids' quasiuniversality *(9 pages)* 022106
Jeppe C. Dyre

Information-theoretic approach to ground-state phase transitions for two- and three-dimensional frustrated spin systems *(10 pages)* 022107
O. Melchert and A. K. Hartmann

Optimal transport and von Neumann entropy in a Heisenberg *XXZ* chain out of equilibrium *(8 pages)* 022108
Mario Salerno and Vladislav Popkov

Work relations for time-dependent states *(5 pages)* 022109
Naoko Nakagawa and Shin-ichi Sasa

Dynamical theory of spin relaxation *(13 pages)* 022110
Timothy R. Field and Alex D. Bain

Effect of dimensionality on the percolation threshold of overlapping nonspherical hyperparticles *(16 pages)* 022111
S. Torquato and Y. Jiao

Power fluctuation theorem for a Brownian harmonic oscillator *(7 pages)* 022112
J. I. Jiménez-Aquino and R. M. Velasco

Dynamic approach to finite-temperature magnetic phase transitions in the extended J_1-J_2 model with vacancy order *(9 pages)* 022113
N. J. Zhou, B. Zheng, and J. H. Dai

Characterizing correlations with full counting statistics: Classical Ising and quantum XY spin chains *(5 pages)* 022114
Dmitri A. Ivanov and Alexander G. Abanov

Universality class of the two-dimensional randomly distributed growing-cluster percolation model *(9 pages)* 022115
O. Melchert

Complex dynamics and scale invariance of one-dimensional memristive networks *(8 pages)* 022116
Yuriy V. Pershin, Valeriy A. Slipko, and Massimiliano Di Ventra

Limiting distributions of continuous-time random walks with superheavy-tailed waiting times *(13 pages)* 022117
S. I. Denisov, Yu. S. Bystrik, and H. Kantz

Effect of partial absorption on diffusion with resetting *(7 pages)* 022118
Justin Whitehouse, Martin R. Evans, and Satya N. Majumdar

Equilibrium and nonequilibrium molecular dynamics simulations of thermal conductance at solid-gas interfaces *(7 pages)* 022119
Zhi Liang, William Evans, and Pawel Keblinski

Holey random walks: Optics of heterogeneous turbid composites *(12 pages)* 022120
Tomas Svensson, Kevin Vynck, Marco Grisi, Romolo Savo, Matteo Burresi, and Diederik S. Wiersma

Dynamical properties of random-field Ising model *(7 pages)* 022121
Suman Sinha and Pradipta Kumar Mandal

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Classical heat transport in anharmonic molecular junctions: Exact solutions *(7 pages)* 022122
Sha Liu, Bijay Kumar Agarwalla, Jian-Sheng Wang, and Baowen Li

Shape-dependent finite-size effect of the critical two-dimensional Ising model on a triangular lattice *(7 pages)* . . . 022124
Xintian Wu, Nickolay Izmailian, and Wenan Guo

Fluctuation-response relations for nonequilibrium diffusions with memory *(11 pages)* 022125
C. Maes, S. Safaverdi, P. Visco, and F. van Wijland

Universal fluctuations and extreme statistics of avalanches near the depinning transition *(13 pages)* 022126
Michael LeBlanc, Luiza Angheluta, Karin Dahmen, and Nigel Goldenfeld

Learning and inference in a nonequilibrium Ising model with hidden nodes *(7 pages)* 022127
Benjamin Dunn and Yasser Roudi

Information theoretic aspects of the two-dimensional Ising model *(11 pages)* 022128
Hon Wai Lau and Peter Grassberger

Quantum collapse and the second law of thermodynamics *(9 pages)* 022129
Sahand Hormoz

Thermodynamic Casimir forces between a sphere and a plate: Monte Carlo simulation of a spin model *(15 pages)* 022130
Martin Hasenbusch

Cluster properties of the one-dimensional lattice gas: The microscopic meaning of grand potential *(7 pages)* 022131
Agata Fronczak

Exact solutions of kinetic equations in an autocatalytic growth model *(5 pages)* 022132
Jakub Jędrak

Disordered contact process with asymmetric spreading *(9 pages)* 022133
Róbert Juhász

Critical phenomena in heterogeneous k-core percolation *(9 pages)* 022134
Davide Cellai, Aonghus Lawlor, Kenneth A. Dawson, and James P. Gleeson

Supercooled liquids: Equivalence between mode-coupling theory and the replica approach *(6 pages)* 022135
Tommaso Rizzo

Long-range and many-body effects in coagulation processes *(13 pages)* 022136
Anton A. Winkler and Erwin Frey

Mass dependence of instabilities of an oscillator with multiplicative and additive noise *(9 pages)* 022137
Moshe Gitterman and David A. Kessler

Work fluctuations for a Brownian particle in a harmonic trap with fluctuating locations *(16 pages)* 022138
Arnab Pal and Sanjib Sabhapandit

Optimum analysis of a Brownian refrigerator *(5 pages)* 022139
X. G. Luo, N. Liu, and J. Z. He

Yang-Lee zeros and the critical behavior of the infinite-range two- and three-state Potts models *(10 pages)* 022140
Zvonko Glumac and Katarina Uzelac

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Anomalous statistics of random relaxations in random environments *(12 pages)* 022141
Iddo Eliazar and Ralf Metzler

Extrema statistics in the dynamics of a non-Gaussian random field *(8 pages)* 022142
T. H. Beuman, A. M. Turner, and V. Vitelli

Thermodynamic length for far-from-equilibrium quantum systems *(7 pages)* 022143
Sebastian Deffner and Eric Lutz

Robust unidirectional rotation in three-tooth Brownian rotary ratchet systems *(15 pages)* 022144
Hiroki Tutu and Soichiro Nagata

From Langevin to generalized Langevin equations for the nonequilibrium Rouse model *(9 pages)* 022145
Christian Maes and Simi R. Thomas

Mass transport perspective on an accelerated exclusion process: Analysis of augmented current and unit-velocity phases *(12 pages)* 022146
Jiajia Dong, Stefan Klumpp, and R. K. P. Zia

Granular Materials

Linear hydrodynamics for driven granular gases *(17 pages)* 022201
María Isabel García de Soria, Pablo Maynar, and Emmanuel Trizac

Shallow granular flows down flat frictional channels: Steady flows and longitudinal vortices *(12 pages)* 022202
Nicolas Brodu, Patrick Richard, and Renaud Delannay

Contact network topology in tapped granular media *(9 pages)* 022203
Roberto Arévalo, Luis A. Pugnaloni, Iker Zuriguel, and Diego Maza

Phase transition in an out-of-equilibrium monolayer of dipolar vibrated grains *(7 pages)* 022204
Loreto Oyarte, Pablo Gutiérrez, Sébastien Aumaître, and Nicolás Mujica

Role of collisions in erosion of regolith during a lunar landing *(14 pages)* 022205
Kyle J. Berger, Anshu Anand, Philip T. Metzger, and Christine M. Hrenya

Effects of cohesion on the flow patterns of granular materials in spouted beds *(10 pages)* 022206
Runru Zhu, Shuiqing Li, and Qiang Yao

Glass transition in driven granular fluids: A mode-coupling approach *(14 pages)* 022207
W. T. Kranz, M. Sperl, and A. Zippelius

Microstructure-statistics-property relations of anisotropic polydisperse particulate composites using tomography *(19 pages)* 022208
A. Gillman, K. Matouš, and S. Atkinson

Hydrodynamic modes in a confined granular fluid *(12 pages)* 022209
Ricardo Brito, Dino Risso, and Rodrigo Soto

Shearing instability of a dilute granular mixture *(9 pages)* 022210
J. Javier Brey and M. J. Ruiz-Montero

Boltzmann statistics in a three-dimensional vibrofluidized granular bed: Idealizing the experimental system *(5 pages)* 022211
C. R. K. Windows-Yule and D. J. Parker

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Colloids and Complex Fluids

Enhanced thermal transport through a soft glassy nanodisk paste *(6 pages)* 022301
Susheel S. Bhandari, K. Muralidhar, and Yogesh M. Joshi

Electrophoretic mobility and charge inversion of a colloidal particle studied by single-colloid electrophoresis and molecular dynamics simulations *(7 pages)* 022302
Ilya Semenov, Shervin Raafatnia, Marcello Sega, Vladimir Lobaskin, Christian Holm, and Friedrich Kremer

High-frequency propagating density fluctuations in deeply supercooled water: Evidence of a single viscous relaxation *(6 pages)* 022303
F. Aliotta, J. Gapiński, M. Pochylski, R. C. Ponterio, F. Saija, G. Salvato, and C. Vasi

Kinetically driven ordered phase formation in binary colloidal crystals *(7 pages)* 022304
D. Bochicchio, A. Videcoq, and R. Ferrando

Effect of gold nanoparticles on structure and dynamics of binary Lennard-Jones liquid: Direct space analysis *(8 pages)* 022305
L. Separdar and S. Davatolhagh

Vacancy diffusion in colloidal crystals as determined by dynamical density-functional theory and the phase-field-crystal model *(6 pages)* 022306
Sven van Teeffelen, Cristian Vasile Achim, and Hartmut Löwen

Transient shear banding in time-dependent fluids *(5 pages)* 022307
Xavier Illa, Antti Puisto, Arttu Lehtinen, Mikael Mohtaschemi, and Mikko J. Alava

Colloidal lattice shearing and rupturing with a driven line of particles *(10 pages)* 022308
A. Libál, B. M. Csíki, C. J. Olson Reichhardt, and C. Reichhardt

Structure of phase-separated athermal colloid-polymer systems in the protein limit *(9 pages)* 022309
Nathan A. Mahynski, Barry Irick, and Athanassios Z. Panagiotopoulos

Direct numerical simulations of anisotropic diffusion of spherical particles in sedimentation *(11 pages)* 022310
Adnan Hamid and Ryoichi Yamamoto

Films, Interfaces, and Crystal Growth

Existence of a bending rigidity for a hard-sphere liquid near a curved hard wall: Validity of the Hadwiger theorem *(9 pages)* 022401
Edgar M. Blokhuis

Interaction between heterogeneously charged surfaces: Surface patches and charge modulation *(10 pages)* 022402
Dan Ben-Yaakov, David Andelman, and Haim Diamant

Bias-dependent model of the electrical impedance of ionic polymer-metal composites *(16 pages)* 022403
Youngsu Cha and Maurizio Porfiri

Phase-field-crystal study of solute trapping *(10 pages)* 022404
Harith Humadi, Jeffrey J. Hoyt, and Nikolas Provatas

Self-organized pathways to nanopatterns exploiting the instabilities of ultrathin confined bilayers *(15 pages)* 022405
Abhiram Hens, Kartick Mondal, and Dipankar Bandyopadhyay

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Classical nucleation theory with a radius-dependent surface tension: A two-dimensional lattice-gas automata model *(14 pages)* 022406
Joseph Hickey and Ivan L'Heureux

Interfacial roughening in nonideal fluids: Dynamic scaling in the weak- and strong-damping regime *(11 pages)* 022407
Markus Gross and Fathollah Varnik

Nonlinear dynamics of island coarsening and stabilization during strained film heteroepitaxy *(16 pages)* 022408
Champika G. Gamage and Zhi-Feng Huang

Thin liquid film flow over substrates with two topographical features *(15 pages)* 022409
A. Mazloomi and A. Moosavi

Liquid Crystals

Critical anomalies in thermal diffusivity of liquid-crystalline terephthal-bis-(4-*n*-butylaniline) *(5 pages)* 022501
Junko Morikawa, Toshimasa Hashimoto, Akira Kishi, Yoshio Shinoda, Kenji Ema, and Hideo Takezoe

Elastic mediated force between nanoparticles adsorbed on smectic films under an external field *(7 pages)* 022502
Maria S. S. Pereira, Marcelo L. Lyra, and Italo N. de Oliveira

Cholesteric pitch transitions induced by mechanical strain *(7 pages)* 022503
I. Lelidis, G. Barbero, and A. L. Alexe-Ionescu

Polarity-sensitive transient patterned state in a twisted nematic liquid crystal driven by very low frequency fields *(11 pages)* 022504
K. S. Krishnamurthy, Pramoda Kumar, and M. Vijay Kumar

Bioinspired model of mechanical energy harvesting based on flexoelectric membranes *(12 pages)* 022505
Alejandro D. Rey, P. Servio, and E. E. Herrera-Valencia

Metric approach for sound propagation in nematic liquid crystals *(6 pages)* 022506
E. Pereira, S. Fumeron, and F. Moraes

Optical properties of light-sensitive liquid-crystal elastomers in the vicinity of the nematic-paranematic phase transition *(7 pages)* 022507
Marko Gregorc, Hui Li, Valentina Domenici, Gabriela Ambrožič, Martin Čopič, and Irena Drevenšek-Olenik

First-order and continuous Fréedericksz transitions in cholesteric liquid crystals *(13 pages)* 022508
A. Yu. Val'kov, E. V. Aksenova, and V. P. Romanov

Smectic order, pinning, and phase transition in a smectic-liquid-crystal cell with a random substrate *(25 pages)* 022509
Quan Zhang and Leo Radzihovsky

Polymers

Intermittent stick-slip dynamics during the peeling of an adhesive tape from a roller *(8 pages)* 022601
Pierre-Philippe Cortet, Marie-Julie Dalbe, Claudia Guerra, Caroline Cohen, Matteo Ciccotti, Stéphane Santucci, and Loïc Vanel

Structural study of helical polyfluorene under high quasihydrostatic pressure *(9 pages)* 022602
M. Knaapila, Z. Konôpková, M. Torkkeli, D. Haase, H.-P. Liermann, S. Guha, and U. Scherf

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Isobars, the coexistence curve, and the critical exponent β of N-isopropylacrylamide gels obtained using a simple experimental method *(7 pages)* 022603
Kohei D. Arai (新井 康平), Azusa Saito (齊藤 梓), Kazuki Ito (伊藤 和樹), Yuuki Uematsu (植松 勇器), Takahiro Ueno (上野 貴裕), Yasuhiro Fujii (藤井 康裕), and Izumi Nishio (西尾 泉)

Adsorption of a single polymer chain on a surface: Effects of the potential range *(16 pages)* 022604
Leonid I. Klushin, Alexey A. Polotsky, Hsiao-Ping Hsu, Denis A. Markelov, Kurt Binder, and Alexander M. Skvortsov

PART B

Biological Physics

Simulation study of the role of the ribosomal exit tunnel on protein folding *(6 pages)* 022701
Changjun Chen, Ercheng Wang, Pengyu Liu, and Yi Xiao

Noisy transcription factor NF-κB oscillations stabilize and sensitize cytokine signaling in space *(5 pages)* 022702
Sirin W. Gangstad, Cilie W. Feldager, Jeppe Juul, and Ala Trusina

Modeling the interaction of DNA with alternating fields *(7 pages)* 022703
A. E. Bergues-Pupo, J. M. Bergues, and F. Falo

Evolutionary processes in finite populations *(10 pages)* 022704
Dirk M. Lorenz, Jeong-Man Park, and Michael W. Deem

Finite element modeling of the radiative properties of *Morpho* butterfly wing scales *(7 pages)* 022705
A. Mejdoubi, C. Andraud, S. Berthier, J. Lafait, J. Boulenguez, and E. Richalot

From free to effective diffusion coefficients in fluorescence correlation spectroscopy experiments *(12 pages)* 022706
Emiliano Pérez Ipiña and Silvina Ponce Dawson

Ventral-clap modes of hovering passerines *(11 pages)* 022707
Yu-Hung Chang, Shang-Chieh Ting, Jian-Yuan Su, Chyi-Yeou Soong, and Jing-Tang Yang

Competition between line tension and curvature stabilizes modulated phase patterns on the surface of giant unilamellar vesicles: A simulation study *(10 pages)* 022708
Jonathan J. Amazon, Shih Lin Goh, and Gerald W. Feigenson

Quantifying interactions between real oscillators with information theory and phase models: Application to cardiorespiratory coupling *(8 pages)* 022709
Yenan Zhu, Yee-Hsee Hsieh, Rishi R. Dhingra, Thomas E. Dick, Frank J. Jacono, and Roberto F. Galán

DNA kinks and bubbles: Temperature dependence of the elastic energy of sharply bent 10-nm-size DNA molecules *(6 pages)* 022710
Daniel S. Sanchez, Hao Qu, Delenda Bulla, and Giovanni Zocchi

Optimization of two- and three-link snakelike locomotion *(15 pages)* 022711
Fangxu Jing and Silas Alben

Three-dimensional structure determination protocol for noncrystalline biomolecules using x-ray free-electron laser diffraction imaging *(15 pages)* 022712
Tomotaka Oroguchi and Masayoshi Nakasako

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Instability of a fluctuating membrane driven by an ac electric field *(13 pages)* 022713
Jacopo Seiwert and Petia M. Vlahovska

Role of osmotic and hydrostatic pressures in bacteriophage genome ejection *(5 pages)* 022714
Serge G. Lemay, Debabrata Panja, and Ian J. Molineux

Thermodynamics of interleaflet cavitation in lipid bilayer membranes *(8 pages)* 022715
Shay M. Rappaport, Alexander M. Berezhkovskii, Joshua Zimmerberg, and Sergey M. Bezrukov

Dynamic analysis of a diffusing particle in a trapping potential *(5 pages)* 022716
Moshe Lindner, Guy Nir, Anat Vivante, Ian T. Young, and Yuval Garini

Building a viral capsid in the presence of genomic RNA *(12 pages)* 022717
Eric C. Dykeman, Peter G. Stockley, and Reidun Twarock

Dynamical phase transition of a periodically driven DNA *(6 pages)* 022718
Garima Mishra, Poulomi Sadhukhan, Somendra M. Bhattacharjee, and Sanjay Kumar

Simulation of stochastic network dynamics via entropic matching *(9 pages)* 022719
Tiago Ramalho, Marco Selig, Ulrich Gerland, and Torsten A. Enßlin

Asymmetry between pushing and pulling for crawling cells *(19 pages)* 022720
Pierre Recho and Lev Truskinovsky

Interdisciplinary Physics

Uncovering disassortativity in large scale-free networks *(7 pages)* 022801
Nelly Litvak and Remco van der Hofstad

Evacuation of pedestrians from a single room by using snowdrift game theories *(6 pages)* 022802
Dong-Mei Shi and Bing-Hong Wang

Diversity-induced resonance in the response to social norms *(10 pages)* 022803
Claudio J. Tessone, Angel Sánchez, and Frank Schweitzer

Phase transition in the biconnectivity of scale-free networks *(6 pages)* 022804
P. Kim, D.-S. Lee, and B. Kahng

Measuring information interactions on the ordinal pattern of stock time series *(9 pages)* 022805
Xiaojun Zhao, Pengjian Shang, and Jing Wang

Canonical fitness model for simple scale-free graphs *(5 pages)* 022806
F. Flegel and I. M. Sokolov

Coverage maximization under resource constraints using a nonuniform proliferating random walk *(9 pages)* 022807
Sudipta Saha and Niloy Ganguly

Transition due to preferential cluster growth of collective emotions in online communities *(9 pages)* 022808
Anna Chmiel and Janusz A. Hołyst

Scaling of earthquake models with inhomogeneous stress dissipation *(7 pages)* 022809
Rachele Dominguez, Kristy Tiampo, C. A. Serino, and W. Klein

Yield strain in shear banding amorphous solids *(14 pages)* 022810
Ratul Dasgupta, H. George E. Hentschel, and Itamar Procaccia

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Symmetry and symmetry breaking in a Kuramoto model induced on a Möbius strip *(7 pages)* 022811
Quansheng Ren, Qiufeng Long, and Jianye Zhao

Dynamical traffic light strategy in the Biham-Middleton-Levine model *(7 pages)* 022812
Jia-Rong Xie, Rui Jiang, Zhong-Jun Ding, Qi-Lang Li, and Bing-Hong Wang

Vaccination intervention on epidemic dynamics in networks *(10 pages)* 022813
Xiao-Long Peng, Xin-Jian Xu, Xinchu Fu, and Tao Zhou

State concentration exponent as a measure of quickness in Kauffman-type networks *(6 pages)* 022814
Shun-ichi Amari, Hiroyasu Ando, Taro Toyoizumi, and Naoki Masuda

Fertility heterogeneity as a mechanism for power law distributions of recurrence times *(11 pages)* 022815
A. Saichev and D. Sornette

Origin of the hub spectral dimension in scale-free networks *(9 pages)* 022816
S. Hwang, D.-S. Lee, and B. Kahng

Hierarchy in directed random networks *(15 pages)* 022817
Enys Mones

Topological analysis of group fragmentation in multiagent systems *(9 pages)* 022818
Pietro DeLellis, Maurizio Porfiri, and Erik M. Bollt

Scarcity may promote cooperation in populations of simple agents *(5 pages)* 022819
R. J. Requejo and J. Camacho

Phase transitions with infinitely many absorbing states in complex networks *(9 pages)* 022820
Renan S. Sander, Silvio C. Ferreira, and Romualdo Pastor-Satorras

Wavelet-based multifractal analysis of nonlinear time series: The earthquake-driven tsunami of 27 February 2010 in Chile *(11 pages)* 022821
B. A. Toledo, A. C.-L. Chian, E. L. Rempel, R. A. Miranda, P. R. Muñoz, and J. A. Valdivia

Driving a conceptual model climate by different processes: Snapshot attractors and extreme events *(10 pages)* . . . 022822
Tamás Bódai, György Károlyi, and Tamás Tél

Partner switching promotes cooperation among myopic agents on a geographical plane *(9 pages)* 022823
Yixiao Li, Yong Min, Xiaodong Zhu, and Jie Cao

Nonlinear Dynamics and Chaos

Role of inertial forces on the chaotic dynamics of flexible rotating bodies *(7 pages)* 022901
F. Calvo

Competitively coupled maps and spatial pattern formation *(8 pages)* 022902
Timothy Killingback, Gregory Loftus, and Bala Sundaram

Sensitivity vector fields in time-delay coordinate embeddings: Theory and experiment *(10 pages)* 022903
A. R. Sloboda and B. I. Epureanu

Nonlinear energy transfer in classical and quantum systems *(12 pages)* 022904
Leonid Manevitch and Agnessa Kovaleva

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Optimal state-space reconstruction using derivatives on projected manifold *(8 pages)* 022905
Chetan Nichkawde

Dispersive shock wave interactions and asymptotics *(11 pages)* 022906
Mark J. Ablowitz and Douglas E. Baldwin

Structure of amplitude correlations in open chaotic systems *(9 pages)* 022907
Torleif E. O. Ericson

Homoclinic snaking near a codimension-two Turing-Hopf bifurcation point in the Brusselator model *(20 pages)* 022908
J. C. Tzou, Y.-P. Ma, A. Bayliss, B. J. Matkowsky, and V. A. Volpert

Heteroclinic contours in oscillatory ensembles *(11 pages)* 022909
M. A. Komarov, G. V. Osipov, and C. S. Zhou

Noise, synchrony, and correlations at the edge of chaos *(5 pages)* 022910
Alessandro Pluchino, Andrea Rapisarda, and Constantino Tsallis

Weighted-permutation entropy: A complexity measure for time series incorporating amplitude information *(7 pages)* 022911
Bilal Fadlallah, Badong Chen, Andreas Keil, and José Príncipe

Symmetry breaking for ratchet transport in the presence of interactions and a magnetic field *(5 pages)* 022912
L. Ermann, A. D. Chepelianskii, and D. L. Shepelyansky

Collective dynamics of a network of ratchets coupled via a stochastic dynamical environment *(7 pages)* 022913
U. E. Vincent, B. R. Nana-Nbendjo, and P. V. E. McClintock

Phase engineering, modulational instability, and solitons of Gross–Pitaevskii-type equations in $1+1$ dimensions *(15 pages)* 022914
E. Kengne, A. Lakhssassi, W. M. Liu, and R. Vaillancourt

Quasi-one-dimensional solutions and their interaction with two-dimensional dissipative solitons *(7 pages)* 022915
Orazio Descalzi and Helmut R. Brand

Enhancement of photon intensity in forced coupled quantum wells inside a semiconductor microcavity *(6 pages)* 022916
Hichem Eleuch, Awadhesh Prasad, and Ingrid Rotter

Synchronization of two bubble trains in a viscous fluid: Experiment and numerical simulation *(7 pages)* 022917
Felipe Augusto Cardoso Pereira, Eduardo Colli, and José Carlos Sartorelli

Performance of multifractal detrended fluctuation analysis on short time series *(8 pages)* 022918
Juan Luis López and Jesús Guillermo Contreras

Experimental study of firing death in a network of chaotic FitzHugh-Nagumo neurons *(7 pages)* 022919
Marzena Ciszak, Stefano Euzzor, F. Tito Arecchi, and Riccardo Meucci

Fluid Dynamics

Pattern dynamics near inverse homoclinic bifurcation in fluids *(5 pages)* 023001
Pinaki Pal, Krishna Kumar, Priyanka Maity, and Syamal Kumar Dana

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Kolmogorov constants for the second-order structure function and the energy spectrum *(8 pages)* 023002
Rui Ni (倪睿) and Ke-Qing Xia (夏克青)

Viscoelastic flow simulations through an array of cylinders *(7 pages)* 023003
J. J. J. Gillissen

Mean scalar concentration profile in a sheared and thermally stratified atmospheric surface layer *(8 pages)* 023004
Gabriel G. Katul, Dan Li, Marcelo Chameki, and Elie Bou-Zeid

Flow past superhydrophobic surfaces with cosine variation in local slip length *(8 pages)* 023005
Evgeny S. Asmolov, Sebastian Schmieschek, Jens Harting, and Olga I. Vinogradova

Microfluidics of imbibition in random porous media *(9 pages)* 023006
H. S. Wiklund and T. Uesaka

Relativistic hydrodynamics from the projection operator method *(13 pages)* 023007
Yuki Minami and Yoshimasa Hidaka

Accelerative propagation and explosion triggering by expanding turbulent premixed flames *(7 pages)* 023008
V'yacheslav Akkerman, Swetaprovo Chaudhuri, and Chung K. Law

Competition between the bulk and the dissociation layer in electrohydrodynamic flow of dielectric liquid around coplanar electrodes *(10 pages)* 023009
Y. K. Suh and K. H. Baek

Reactive transport in porous media: Pore-network model approach compared to pore-scale model *(15 pages)* 023010
Clément Varloteaux, Minh Tan Vu, Samir Békri, and Pierre M. Adler

Suppression of particle dispersion by sweeping effects in synthetic turbulence *(18 pages)* 023011
Gregory L. Eyink and Damien Benveniste

One-dimensional model of inertial pumping *(12 pages)* 023012
Pavel E. Kornilovitch, Alexander N. Govyadinov, David P. Markel, and Erik D. Torniainen

Drag reduction of wake flow by shear-driven rotation *(4 pages)* 023013
Jianjun Tao and Yan Bao

Torque measurements and numerical determination in differentially rotating wide gap Taylor-Couette flow *(4 pages)* 023014
S. Merbold, H. J. Brauckmann, and C. Egbers

Interface pinning of immiscible gravity-exchange flows in porous media *(7 pages)* 023015
Benzhong Zhao, Christopher W. MacMinn, Michael L. Szulczewski, Jerome A. Neufeld, Herbert E. Huppert, and Ruben Juanes

Distribution of velocity gradients and rate of caustic formation in turbulent aerosols at finite Kubo numbers *(10 pages)* 023016
K. Gustavsson and B. Mehlig

Lagrangian-Eulerian dynamics of breaking shallow water waves through tracer tracking of fluid elements *(5 pages)* 023017
Ue-Yu Pen, Mei-Chu Chang, and Lin I

Effective diffusivity of passive scalars in rotating turbulence *(9 pages)* 023018
P. Rodriguez Imazio and P. D. Mininni

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Localized oscillatory states in magnetoconvection *(11 pages)* 023019
Matthew C. Buckley and Paul J. Bushby

Dependence of nanoconfined liquid behavior on boundary and bulk factors *(10 pages)* 023020
Jie Sun, Wen Wang, and Hua Sheng Wang

Multistability in rotating spherical shell convection *(8 pages)* 023021
F. Feudel, N. Seehafer, L. S. Tuckerman, and M. Gellert

Plasma Physics

Ponderomotive manipulation of cold subwavelength plasmas *(14 pages)* 023101
P. W. Smorenburg, L. P. J. Kamp, and O. J. Luiten

Particle model for nonlocal heat transport in fusion plasmas *(9 pages)* 023102
H. Bufferand, G. Ciraolo, Ph. Ghendrih, S. Lepri, and R. Livi

Spatially resolved analysis of $K\alpha$ x-ray emission from plasmas induced by a femtosecond weakly relativistic laser pulse at various polarizations *(12 pages)* 023103
G. Cristoforetti, M. P. Anania, A. Ya. Faenov, A. Giulietti, D. Giulietti, S. B. Hansen, P. Koester, L. Labate, T. Levato, T. A. Pikuz, and L. A. Gizzi

Transport properties of lithium hydride at extreme conditions from orbital-free molecular dynamics *(8 pages)* 023104
L. Burakovsky, C. Ticknor, J. D. Kress, L. A. Collins, and F. Lambert

Quantum-electrodynamical parametric instability in the incoherent photon gas *(5 pages)* 023105
Yunliang Wang, P. K. Shukla, and B. Eliasson

Optimization of the neutron yield in fusion plasmas produced by Coulomb explosions of deuterium clusters irradiated by a petawatt laser *(4 pages)* 023106
W. Bang, G. Dyer, H. J. Quevedo, A. C. Bernstein, E. Gaul, M. Donovan, and T. Ditmire

Classical Physics

Microwave magnetoelectric fields and their role in the matter-field interaction *(31 pages)* 023201
E. O. Kamenetskii, R. Joffe, and R. Shavit

Parametric excitation of bending deformations of a rod by periodic twist *(6 pages)* 023202
M. Belovs and A. Cēbers

Computational Physics

Free-energy analyses of a proton transfer reaction by simulated-tempering umbrella sampling and first-principles molecular dynamics simulations *(4 pages)* 023301
Yoshiharu Mori and Yuko Okamoto

Smoothed-particle-hydrodynamics modeling of dissipation mechanisms in gravity waves *(15 pages)* 023302
Andrea Colagrossi, Antonio Souto-Iglesias, Matteo Antuono, and Salvatore Marrone

Unconditionally stable finite-difference time-domain methods for modeling the Sagnac effect *(11 pages)* 023303
Roman Novitski, Jacob Scheuer, and Ben Z. Steinberg

Multiple-relaxation-time lattice Boltzmann method for immiscible fluids at high Reynolds numbers *(8 pages)* 023304
Abbas Fakhari and Taehun Lee

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Extracting spectral properties from Keldysh Green functions *(9 pages)* 023305
Andreas Dirks, Martin Eckstein, Thomas Pruschke, and Philipp Werner

Acoustic multipole sources for the lattice Boltzmann method *(5 pages)* 023306
Erlend Magnus Viggen

Multiple-component lattice Boltzmann equation for fluid-filled vesicles in flow *(15 pages)* 023307
I. Halliday, S. V. Lishchuk, T. J. Spencer, G. Pontrelli, and C. M. Care

BRIEF REPORTS

Statistical Physics

Monotonic entropy growth for a nonlinear model of random exchanges *(4 pages)* 024101
S. M. Apenko

Critical line of honeycomb-lattice anisotropic Ising antiferromagnets in a field *(4 pages)* 024102
S. L. A. de Queiroz

Biological Physics

Monodomain shear wave propagation and bidomain shear wave dispersion in an elastic model of cardiac tissue *(3 pages)* 024701
Steffan Puwal and Bradley J. Roth

Nonlinear Dynamics and Chaos

Dynamical quorum sensing and clustering dynamics in a population of spatially distributed active rotators *(5 pages)* 024901
Hidetsugu Sakaguchi and Satomi Maeyama

Pattern formation induced by a differential shear flow *(5 pages)* 024902
L. Stucchi and Desiderio A. Vasquez

Fluid Dynamics

Effective rheology of bubbles moving in a capillary tube *(5 pages)* 025001
Santanu Sinha, Alex Hansen, Dick Bedeaux, and Signe Kjelstrup

Plasma Physics

Nonlinear interaction of intense laser pulses and an inhomogeneous electron-positron-ion plasma *(5 pages)* 025101
Li-Hong Cheng, Rong-An Tang, Ai-Xia Zhang, and Ju-Kui Xue

Coulomb expansion: Analytical solutions *(3 pages)* 025102
A. V. Ivlev

ERRATA

Publisher's Note: Scaling properties of the area distribution functions and kinetic curves of dense plane discrete Poisson-Voronoi tessellations [Phys. Rev. E **87**, 014401 (2013)] *(1 page)* . . . . . 029901(E)
A. Korobov

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 87, NUMBER 2** **FEBRUARY 2013**

Erratum: Conversion of graded to binary response in an activator-repressor system
[Phys. Rev. E **81**, 021905 (2010)] *(1 page)* . . . . . 029902(E)
Rajesh Karmakar

Publisher's Note: Frequency dependence of the subharmonic Shapiro steps
[Phys. Rev. E **83**, 056604 (2011)] *(1 page)* . . . . . 029903(E)
Jasmina Tekić and Zoran Ivić

Erratum: Localization and the effects of symmetries in the thermalization properties of one-dimensional quantum systems [Phys. Rev. E **82**, 031130 (2010)] *(1 page)* . . . . . 029904(E)
Lea F. Santos and Marcos Rigol

Erratum: Diagnosing temperature change inside sonoluminescing bubbles by calculating line spectra
[Phys. Rev. E **80**, 046320 (2009)] *(1 page)* . . . . . 029905(E)
Yu An and Chaohui Li