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 92, NUMBER 3
PARTS A AND B

CONTENTS

SEPTEMBER 2015

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 030301(R)–032603, and Part B pages 032701–039905(E).

PART A

RAPID COMMUNICATIONS

Colloids and Complex Fluids

Dynamics of supercooled water in nanotubes: Cage correlation function and diffusion coefficient *(6 pages)* . . . . . 030301(R)
Mahdi Khademi, Rajiv K. Kalia, and Muhammad Sahimi

Segregation of mass at the periphery of *N*-isopropylacrylamide-co-acrylic-acid microgels at high temperatures *(5 pages)* . . . . . 030302(R)
John S. Hyatt, Changwoo Do, Xiaobo Hu, Hong Sung Choi, Jin Woong Kim, L. Andrew Lyon, and Alberto Fernandez-Nieves

Liquid Crystals

Elastic continuum theory: Towards understanding of the twist-bend nematic phases *(5 pages)* . . . . . 030501(R)
G. Barbero, L. R. Evangelista, M. P. Rosseto, R. S. Zola, and I. Lelidis

Polymers

Emergent tilt order in Dirac polymer liquids *(5 pages)* . . . . . 030601(R)
Anton Souslov, Benjamin Loewe, and Paul M. Goldbart

Biological Physics

Adaptive synchronization and anticipatory dynamical systems *(4 pages)* . . . . . 030701(R)
Ying-Jen Yang, Chun-Chung Chen, Pik-Yin Lai, and C. K. Chan

Networks and Interdisciplinary Physics

From epidemics to information propagation: Striking differences in structurally similar adaptive network models *(5 pages)* . . . . . 030801(R)
Stojan Trajanovski, Dongchao Guo, and Piet Van Mieghem

Nonlinear Dynamics and Chaos

Intermittent chaotic chimeras for coupled rotators *(6 pages)* . . . . . 030901(R)
Simona Olmi, Erik A. Martens, Shashi Thutupalli, and Alessandro Torcini

Copyright 2015 by American Physical Society

(Continued)

1539-3755(201509)92:3:A;1-W

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 92, NUMBER 3** **SEPTEMBER 2015**

Fluid Dynamics

Viscoelastic Taylor-Couette instability as analog of the magnetorotational instability *(4 pages)* . . . . . 031001(R)
Yang Bai, Olivier Crumeyrolle, and Innocent Mutabazi

Vortex-induced morphology on a two-fluid interface and the transitions *(5 pages)* . . . . . 031002(R)
J.-C. Tsai (蔡日強), C.-Y. Tao (陶巧妤), Y.-C. Sun (孫宇岑), C.-Y. Lai (賴靜瑤), K.-H. Huang (黃冠皓), W.-T. Juan (阮文滔), and J.-R. Huang (黃仲仁)

Dynamics of microvortices induced by ion concentration polarization *(5 pages)* . . . . . 031003(R)
Joeri C. de Valença, R. Martijn Wagterveld, Rob G. H. Lammertink, and Peichun Amy Tsai

Non-Kolmogorov cascade of helicity-driven turbulence *(5 pages)* . . . . . 031004(R)
Mouloud Kessar, Franck Plunian, Rodion Stepanov, and Guillaume Balarac

Plasma Physics

Thin-shell instability in collisionless plasma *(5 pages)* . . . . . 031101(R)
M. E. Dieckmann, H. Ahmed, D. Doria, G. Sarri, R. Walder, D. Folini, A. Bret, A. Ynnerman, and M. Borghesi

Computational Physics

Liquid nanodroplet formation through phase explosion mechanism in laser-irradiated metal targets *(6 pages)* . . . . 031301(R)
Alberto Mazzi, Federico Gorrini, and Antonio Miotello

ARTICLES

Statistical Physics

Transfer-matrix study of a hard-square lattice gas with two kinds of particles and density anomaly *(8 pages)* 032101
Tiago J. Oliveira and Jürgen F. Stilck

Looking at a blinking quantum emitter through time slots: The effect of blind times *(5 pages)* 032102
A. L. Shchukina, I. Yu. Eremchev, and A. V. Naumov

Cluster-factorized steady states in finite-range processes *(10 pages)* 032103
Amit Chatterjee, Punyabrata Pradhan, and P. K. Mohanty

Dispersion of overdamped diffusing particles in channel flows coupled to transverse acoustophoretic potentials: Transport regimes and scaling anomalies *(16 pages)* 032104
Massimiliano Giona and Fabio Garofalo

Efficiency of single-particle engines *(8 pages)* 032105
Karel Proesmans, Cedric Driesen, Bart Cleuren, and Christian Van den Broeck

Random matrix theory and critical phenomena in quantum spin chains *(6 pages)* 032106
J. Hutchinson, J. P. Keating, and F. Mezzadri

Unification of field theory and maximum entropy methods for learning probability densities *(16 pages)* 032107
Justin B. Kinney

Critical phenomena of a single defect *(8 pages)* 032108
Xintian Wu and Yangyang Zhang

(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 92, NUMBER 3** **SEPTEMBER 2015**

Nondiagonalizable and nondivergent susceptibility tensor in the Hamiltonian mean-field model with asymmetric momentum distributions *(10 pages)* 032109
Yoshiyuki Y. Yamaguchi

Random pinning changes the melting scenario of a two-dimensional core-softened potential system *(5 pages)* 032110
E. N. Tsiok, D. E. Dudalov, Yu. D. Fomin, and V. N. Ryzhov

Reductions and extensions in mesoscopic dynamics *(20 pages)* 032111
Miroslav Grmela, Václav Klika, and Michal Pavelka

Statistical physics of loopy interactions: Independent-loop approximation and beyond *(10 pages)* 032112
A. Ramezanpour and S. Moghimi-Araghi

Optimal protocols for slowly driven quantum systems *(6 pages)* 032113
Patrick R. Zulkowski and Michael R. DeWeese

Quantum Kaniadakis entropy under projective measurement *(3 pages)* 032114
Kamel Ourabah, Amel Hiba Hamici-Bendimerad, and Mouloud Tribeche

Full statistics of energy conservation in two-time measurement protocols *(5 pages)* 032115
Tristan Benoist, Vojkan Jakšić, Annalisa Panati, Yan Pautrat, and Claude-Alain Pillet

Stochastic dissipative solitons *(10 pages)* 032116
Sergio E. Mangioni and Roberto R. Deza

Optimal control of overdamped systems *(9 pages)* 032117
Patrick R. Zulkowski and Michael R. DeWeese

Nonequilibrium statistical mechanics of mixtures of particles in contact with different thermostats *(10 pages)* 032118
A. Y. Grosberg and J.-F. Joanny

Forgetfulness can help you win games *(7 pages)* 032119
James Burridge, Yu Gao, and Yong Mao

Phase diagrams of a spin-1 Ising system with competing short- and long-range interactions *(11 pages)* 032120
Octavio D. Rodriguez Salmon, J. Ricardo de Sousa, and Minos A. Neto

Random geometric graph description of connectedness percolation in rod systems *(6 pages)* 032121
Avik P. Chatterjee and Claudio Grimaldi

How breadth of degree distribution influences network robustness: Comparing localized and random attacks *(9 pages)* 032122
Xin Yuan, Shuai Shao, H. Eugene Stanley, and Shlomo Havlin

Dissipative dynamics in a quantum bistable system: Crossover from weak to strong damping *(20 pages)* 032123
Luca Magazzù, Davide Valenti, Bernardo Spagnolo, and Milena Grifoni

Quantum Otto cycle efficiency on coupled qudits *(7 pages)* 032124
E. A. Ivanchenko

Statistical thermodynamics of strain hardening in polycrystalline solids *(7 pages)* 032125
J. S. Langer

(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 92, NUMBER 3** **SEPTEMBER 2015**

Exact analytical thermodynamic expressions for a Brownian heat engine *(9 pages)* 032126
Mesfin Asfaw Taye

Dispersion for two classes of random variables: General theory and application to inference of an external ligand concentration by a cell *(9 pages)* 032127
Andre C. Barato and Udo Seifert

Scaling forms of particle densities for Lévy walks and strong anomalous diffusion *(8 pages)* 032128
Marco Dentz, Tanguy Le Borgne, Daniel R. Lester, and Felipe P. J. de Barros

Nonequilibrium potential and fluctuation theorems for quantum maps *(9 pages)* 032129
Gonzalo Manzano, Jordan M. Horowitz, and Juan M. R. Parrondo

Random matrix approach to categorical data analysis *(7 pages)* 032130
Aashay Patil and M. S. Santhanam

Mean-field theory for the long-range contact process with diffusion *(7 pages)* 032131
T. B. Pedro, W. Figueiredo, and A. L. Ferreira

Massively parallel molecular dynamics simulation of formation of ice-crystallite precursors in supercooled water: Incipient-nucleation behavior and role of system size *(6 pages)* 032132
Niall J. English and John S. Tse

Relation between structure of blocked clusters and relaxation dynamics in kinetically constrained models *(10 pages)* 032133
Eial Teomy and Yair Shokef

Dimer covering and percolation frustration *(10 pages)* 032134
Amir Haji-Akbari, Nasim Haji-Akbari, and Robert M. Ziff

Interfacial thermal conduction and negative temperature jump in one-dimensional lattices *(5 pages)* 032135
Xiaodong Cao and Dahai He

Internal dissipation and heat leaks in quantum thermodynamic cycles *(8 pages)* 032136
Luis A. Correa, José P. Palao, and Daniel Alonso

Quantum work statistics of charged Dirac particles in time-dependent fields *(7 pages)* 032137
Sebastian Deffner and Avadh Saxena

Effects of interaction symmetry on delocalization and energy transport in one-dimensional disordered lattices *(5 pages)* 032138
Jianjin Wang, Dahai He, Yong Zhang, Jiao Wang, and Hong Zhao

Thermoelectricity of interacting particles: A numerical approach *(7 pages)* 032139
Shunda Chen, Jiao Wang, Giulio Casati, and Giuliano Benenti

Fluctuation analysis of time-averaged mean-square displacement for the Langevin equation with time-dependent and fluctuating diffusivity *(17 pages)* 032140
Takashi Uneyama, Tomoshige Miyaguchi, and Takuma Akimoto

Generalized model of blockage in particulate flow limited by channel carrying capacity *(12 pages)* 032141
C. Barré, J. Talbot, P. Viot, L. Angelani, and A. Gabrielli

(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 92, NUMBER 3** **SEPTEMBER 2015**

Exact work statistics of quantum quenches in the anisotropic XY model *(9 pages)* 032142
Francis A. Bayocboc, Jr. and Francis N. C. Paraan

Stochastic thermodynamics of macrospins with fluctuating amplitude and direction *(6 pages)* 032143
Swarnali Bandopadhyay, Debasish Chaudhuri, and A. M. Jayannavar

Granular Materials

Radical tessellation of the packing of spheres with a log-normal size distribution *(12 pages)* 032201
L. Y. Yi, K. J. Dong, R. P. Zou, and A. B. Yu

S-shaped flow curves of shear thickening suspensions: Direct observation of frictional rheology *(5 pages)* 032202
Zhongcheng Pan, Henri de Cagny, Bart Weber, and Daniel Bonn

Numerical approach to frictional fingers *(9 pages)* 032203
Jon Alm Eriksen, Renaud Toussaint, Knut Jørgen Måløy, Eirik Flekkøy, and Bjørnar Sandnes

Percolation and jamming transitions in particulate systems with and without cohesion *(6 pages)* 032204
L. Kovalcinova, A. Goullet, and L. Kondic

Colloids and Complex Fluids

Effect of self-propulsion on equilibrium clustering *(7 pages)* 032301
Ethayaraja Mani and Hartmut Löwen

Crossover from the coffee-ring effect to the uniform deposit caused by irreversible cluster-cluster aggregation *(9 pages)* 032302
A. Crivoi, X. Zhong, and Fei Duan

Dynamic clustering of driven colloidal particles on a circular path *(11 pages)* 032303
Shogo Okubo, Syuhei Shibata, Yuriko Sassa Kawamura, Masatoshi Ichikawa, and Yasuyuki Kimura

Swim pressure on walls with curves and corners *(6 pages)* 032304
Frank Smallenburg and Hartmut Löwen

Moderately nonlinear diffuse-charge dynamics under an ac voltage *(12 pages)* 032305
Robert F. Stout and Aditya S. Khair

Effect of geometric curvature on vitrification behavior for polymer nanotubes confined in anodic aluminum oxide templates *(8 pages)* 032306
Jiao Chen, Linling Li, Dongshan Zhou, Xiaoliang Wang, and Gi Xue

Viscoelasticity of colloidal polycrystals doped with impurities *(8 pages)* 032307
Ameur Louhichi, Elisa Tamborini, Julian Oberdisse, Luca Cipelletti, and Laurence Ramos

Particle-size effects in the formation of bicontinuous Pickering emulsions *(9 pages)* 032308
M. Reeves, A. T. Brown, A. B. Schofield, M. E. Cates, and J. H. J. Thijssen

Numerical study of the influence of solid polarization on electrophoresis at finite Debye thickness *(8 pages)* 032309
Somnath Bhattacharyya and Simanta De

Films, Interfaces, and Solids

Buoyancy-driven detachment of a wall-bound pendant drop: Interface shape at pinchoff and nonequilibrium surface tension *(9 pages)* 032401
A. Lamorgese and R. Mauri

(Continued)

S 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 92, NUMBER 3** **SEPTEMBER 2015**

Proton transfer in liquid water confined inside graphene slabs *(10 pages)* 032402
Amani Tahat and Jordi Martí

Rich collision dynamics of soft and sticky crystalline nanoparticles: Numerical experiments *(8 pages)* 032403
Yoichi Takato, Michael E. Benson, and Surajit Sen

Influence of disordered porous media on the anomalous properties of a simple water model *(8 pages)* 032404
A. P. Furlan, Carlos E. Fiore, and M. C. Barbosa

Static friction between rigid fractal surfaces *(12 pages)* 032405
Fernando Alonso-Marroquin, Pengyu Huang, Dorian A. H. Hanaor, E. A. Flores-Johnson, Gwénaëlle Proust, Yixiang Gan, and Luming Shen

Steady-state propagation speed of rupture fronts along one-dimensional frictional interfaces *(14 pages)* 032406
David Skålid Amundsen, Jørgen Kjoshagen Trømborg, Kjetil Thøgersen, Eytan Katzav, Anders Malthe-Sørenssen, and Julien Scheibert

Unification of classical nucleation theories via a unified Itô-Stratonovich stochastic equation *(9 pages)* 032407
Miguel A. Durán-Olivencia and James F. Lutsko

Inhibition of Rayleigh-Plateau instability on a unidirectionally patterned substrate *(6 pages)* 032408
G. Boussinot and Efim A. Brener

Liquid Crystals

Effect of nanoparticle chain formation on dielectric anisotropy of nematic composites *(8 pages)* 032501
M. A. Osipov and M. V. Gorkunov

Spectral and polarization structure of field-induced photonic bands in cholesteric liquid crystals *(9 pages)* 032502
S. P. Palto, M. I. Barnik, A. R. Geivandov, I. V. Kasyanova, and V. S. Palto

Orientational ordering of confined hard rods: The effect of shape anisotropy on surface ordering and capillary nematization *(10 pages)* 032503
R. Aliabadi, M. Moradi, and S. Varga

Transient, polarity-dependent dielectric response in a twisted nematic liquid crystal under very low frequency excitation *(11 pages)* 032504
K. S. Krishnamurthy

Filaments in the twist-grain-boundary smectic-*A* phase *(10 pages)* 032505
Lubor Lejček, Vladimíra Novotná, and Milada Glogarová

Polymers

Compensated Arrhenius formalism applied to a conductivity study in poly(propylene glycol) diacrylate monomers *(7 pages)* 032601
F. Dubois, Y. Derouiche, J. M. Leblond, U. Maschke, and R. Douali

Phase diagram and the pseudogap state in a linear chiral homopolymer model *(16 pages)* 032602
A. Sinelnikova, A. J. Niemi, and M. Ulybyshev

Efficient simulation of semiflexible polymers *(14 pages)* 032603
Debabrata Panja, Gerard T. Barkema, and J. M. J. van Leeuwen

(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 92, NUMBER 3** **SEPTEMBER 2015**

PART B

Biological Physics

Role of mechanical factors in cortical folding development *(8 pages)* 032701
Mir Jalil Razavi, Tuo Zhang, Xiao Li, Tianming Liu, and Xianqiao Wang

Energy dissipation drives the gradient signal amplification through an incoherent type-1 feed-forward loop *(5 pages)* 032702
Ganhui Lan

Pulling short DNA molecules having defects on different locations *(8 pages)* 032703
Amar Singh and Navin Singh

Formation and dissolution of bacterial colonies *(8 pages)* 032704
Christoph A. Weber, Yen Ting Lin, Nicolas Biais, and Vasily Zaburdaev

Self-assembly and plasticity of synaptic domains through a reaction-diffusion mechanism *(19 pages)* 032705
Christoph A. Haselwandter, Mehran Kardar, Antoine Triller, and Rava Azeredo da Silveira

Metabolism of dinosaurs as determined from their growth *(14 pages)* 032706
Scott A. Lee

Dynamics of signal propagation and collision in axons *(11 pages)* 032707
Rosangela Follmann, Epaminondas Rosa, Jr., and Wolfgang Stein

Modes of competition and the fitness of evolved populations *(10 pages)* 032708
Tim Rogers and Alan J. McKane

Nuclear dynamical deformation induced hetero- and euchromatin positioning *(5 pages)* 032709
Akinori Awazu

Classification of projection images of proteins with structural polymorphism by manifold: A simulation study for x-ray free-electron laser diffraction imaging *(13 pages)* 032710
Takashi Yoshidome, Tomotaka Oroguchi, Masayoshi Nakasako, and Mitsunori Ikeguchi

Translocation of a semiflexible polymer through a nanopore in the presence of attractive binding particles *(9 pages)* 032711
Ramesh Adhikari and Aniket Bhattacharya

Shaping protein distributions in stochastic self-regulated gene expression networks *(15 pages)* 032712
Manuel Pájaro, Antonio A. Alonso, and Carlos Vázquez

Tuning of protein-surfactant interaction to modify the resultant structure *(11 pages)* 032713
Sumit Mehan, Vinod K. Aswal, and Joachim Kohlbrecher

Nanopore tweezers: Voltage-controlled trapping and releasing of analytes *(9 pages)* 032714
Mauro Chinappi, Tudor Luchian, and Fabio Cecconi

Single-site transcription rates through fitting of ensemble-averaged data from fluorescence recovery after photobleaching: A fat-tailed distribution *(7 pages)* 032715
Liat Rosenfeld, Eldad Kepten, Sharon Yunger, Yaron Shav-Tal, and Yuval Garini

Effect of vision angle on the phase transition in flocking behavior of animal groups *(5 pages)* 032716
P. The Nguyen, Sang-Hee Lee, and V. Thanh Ngo

(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 92, NUMBER 3** **SEPTEMBER 2015**

Random-walk enzymes *(12 pages)* 032717
Chi H. Mak, Phuong Pham, Samir A. Afif, and Myron F. Goodman

Dielectric response of the water hydration layer around spherical solutes *(9 pages)* 032718
Christian Schaaf and Stephan Gekle

Protein viscoelastic dynamics: A model system *(20 pages)* 032719
Craig Fogle, Joseph Rudnick, and David Jasnow

Turbulent states and their transitions in mathematical models for ventricular tissue: The effects of random interstitial fibroblasts *(12 pages)* 032720
Alok Ranjan Nayak and Rahul Pandit

Toroidal membrane vesicles in spherical confinement *(13 pages)* 032721
Lila Bouzar, Ferhat Menas, and Martin Michael Müller

Turbulence of swarming sperm *(11 pages)* 032722
Adama Creppy, Olivier Praud, Xavier Druart, Philippa L. Kohnke, and Franck Plouraboué

Gain control through divisive inhibition prevents abrupt transition to chaos in a neural mass model *(14 pages)* . . . 032723
Christoforos A. Papasavvas, Yujiang Wang, Andrew J. Trevelyan, and Marcus Kaiser

Dissipative vibrational model for chiral recognition in olfaction *(5 pages)* 032724
Arash Tirandaz, Farhad Taher Ghahramani, and Afshin Shafiee

Unbiased charge oscillations in B-DNA: Monomer polymers and dimer polymers *(16 pages)* 032725
K. Lambropoulos, M. Chatzieleftheriou, A. Morphis, K. Kaklamanis, M. Theodorakou, and C. Simserides

Impact of membrane bistability on dynamical response of neuronal populations *(7 pages)* 032726
Wei Wei, Fred Wolf, and Xiao-Jing Wang

Dynamics of protein hydration water *(6 pages)* 032727
M. Wolf, S. Emmert, R. Gulich, P. Lunkenheimer, and A. Loidl

Nonlinearities of biopolymer gels increase the range of force transmission *(10 pages)* 032728
Xinpeng Xu and Samuel A. Safran

Multicellular density fluctuations in epithelial monolayers *(8 pages)* 032729
Steven M. Zehnder, Marina K. Wiatt, Juan M. Uruena, Alison C. Dunn, W. Gregory Sawyer, and Thomas E. Angelini

Cell shape recognition by colloidal cell imprints: Energy of the cell-imprint interaction *(8 pages)* 032730
Josef Borovička, Simeon D. Stoyanov, and Vesselin N. Paunov

Networks and Interdisciplinary Physics

Faster unfolding of communities: Speeding up the Louvain algorithm *(10 pages)* 032801
V. A. Traag

Regular graphs maximize the variability of random neural networks *(6 pages)* 032802
Gilles Wainrib and Mathieu Galtier

Noise in coevolving networks *(15 pages)* 032803
Marina Diakonova, Víctor M. Eguíluz, and Maxi San Miguel

(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 92, NUMBER 3** **SEPTEMBER 2015**

Enhancing the stability of the synchronization of multivariable coupled oscillators *(7 pages)* 032804
R. Sevilla-Escoboza, R. Gutiérrez, G. Huerta-Cuellar, S. Boccaletti, J. Gómez-Gardeñes, A. Arenas, and J. M. Buldú

Measuring and modeling correlations in multiplex networks *(20 pages)* 032805
Vincenzo Nicosia and Vito Latora

Survival time of the susceptible-infected-susceptible infection process on a graph *(16 pages)* 032806
Ruud van de Bovenkamp and Piet Van Mieghem

Phase transitions in Pareto optimal complex networks *(12 pages)* 032807
Luís F. Seoane and Ricard Solé

Self-organized dynamical complexity in human wakefulness and sleep: Different critical brain-activity feedback for conscious and unconscious states *(9 pages)* 032808
Paolo Allegrini, Paolo Paradisi, Danilo Menicucci, Marco Laurino, Andrea Piarulli, and Angelo Gemignani

Nonlocal effects and countermeasures in cascading failures *(8 pages)* 032809
Dirk Witthaut and Marc Timme

Thermodynamic characterization of networks using graph polynomials *(16 pages)* 032810
Cheng Ye, César H. Comin, Thomas K. DM. Peron, Filipi N. Silva, Francisco A. Rodrigues, Luciano da F. Costa, Andrea Torsello, and Edwin R. Hancock

Binary full adder, made of fusion gates, in a subexcitable Belousov-Zhabotinsky system *(8 pages)* 032811
Andrew Adamatzky

Hyperbolicity measures democracy in real-world networks *(6 pages)* 032812
Michele Borassi, Alessandro Chessa, and Guido Caldarelli

Nonlinear Dynamics and Chaos

Synchronization versus neighborhood similarity in complex networks of nonidentical oscillators *(5 pages)* 032901
Celso Freitas, Elbert Macau, and Ricardo Luiz Viana

Noise-induced suppression of nonlinear distortions in a bistable system with biharmonic excitation in vibrational resonance *(7 pages)* 032902
V. N. Chizhevsky

Random matrix ensembles involving Gaussian Wigner and Wishart matrices, and biorthogonal structure *(11 pages)* 032903
Santosh Kumar

Discrete gap solitons in binary positive-negative index nonlinear waveguide arrays with strong second-order couplings *(11 pages)* 032904
Alexander A. Dovgiy and Ilya S. Besedin

Dynamical stability of dipolar Bose-Einstein condensates with temporal modulation of the *s*-wave scattering length *(7 pages)* 032905
S. Sabari, Chandroth P. Jisha, K. Porsezian, and Valeriy A. Brazhnyi

Two-parameter bifurcation study of the regularized long-wave equation *(14 pages)* 032906
O. Podvigina, V. Zheligovsky, E. L. Rempel, A. C.-L. Chian, R. Chertovskih, and P. R. Muñoz

(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 92, NUMBER 3** **SEPTEMBER 2015**

Evolution of self-organized two-dimensional patterns of nanoclusters through demixing *(5 pages)* 032907
Madhumita Choudhuri, A. N. Sekar Iyengar, Alokmay Datta, and M. S. Janaki

Rich spectrum of neural field dynamics in the presence of short-term synaptic depression *(14 pages)* 032908
He Wang, Kin Lam, C. C. Alan Fung, K. Y. Michael Wong, and Si Wu

Lagrangian chaos and particle diffusion in electroconvection of planar nematic liquid crystals *(6 pages)* 032909
Yoshiki Hidaka, Megumi Hashiguchi, Noriko Oikawa, and Shoichi Kai

Analytical solitonlike solutions and the dynamics of ultracold Fermi gases in a time-dependent three-dimensional harmonic potential *(6 pages)* 032910
Ying Wang, Guosen Luo, Yu Zhou, and Chao Hang

Anticipated synchronization in coupled complex Ginzburg-Landau systems *(7 pages)* 032911
Marzena Ciszak, Catalina Mayol, Claudio R. Mirasso, and Raul Toral

Compactification tuning for nonlinear localized modes in sawtooth lattices *(11 pages)* 032912
Magnus Johansson, Uta Naether, and Rodrigo A. Vicencio

Terminal retrograde turn of rolling rings *(5 pages)* 032913
Mir Abbas Jalali, Milad S. Sarebangholi, and Mohammad-Reza Alam

Multifractality of quantum wave functions in the presence of perturbations *(19 pages)* 032914
R. Dubertrand, I. García-Mata, B. Georgeot, O. Giraud, G. Lemarié, and J. Martin

Statistics of injected power on a bouncing ball subjected to a randomly vibrating piston *(7 pages)* 032915
Alfredo García-Cid, Pablo Gutiérrez, Claudio Falcón, Sébastien Aumaître, and Eric Falcon

Nonlinear mode decomposition: A noise-robust, adaptive decomposition method *(25 pages)* 032916
Dmytro Iatsenko, Peter V. E. McClintock, and Aneta Stefanovska

Fluid Dynamics

Inhomogeneous distribution of water droplets in cloud turbulence *(13 pages)* 033001
Itzhak Fouxon, Yongnam Park, Roei Harduf, and Changhoon Lee

Theory of the liquid film motor *(9 pages)* 033002
M. S. Feiz, R. M. Namin, and A. Amjadi

Shapes of sedimenting soft elastic capsules in a viscous fluid *(16 pages)* 033003
Horst-Holger Boltz and Jan Kierfeld

Enhanced thrust and speed revealed in the forward flight of a butterfly with transient body translation *(10 pages)* 033004
Yueh-Han John Fei and Jing-Tang Yang

Buoyancy effects on the scaling characteristics of atmospheric boundary-layer wind fields in the mesoscale range *(8 pages)* 033005
V. P. Kiliyanpilakkil, S. Basu, A. Ruiz-Columbié, G. Araya, L. Castillo, B. Hirth, and W. Burgett

High Rayleigh number convection in a one-dimensional model *(12 pages)* 033006
S. N. Bhattacharyya

(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 92, NUMBER 3** **SEPTEMBER 2015**

Precessing cylinders at the second and third resonance: Turbulence controlled by geostrophic flow *(15 pages)* 033007
Jianfei Jiang, Dali Kong, Rixiang Zhu, and Keke Zhang

Prediction of noninertial focusing of red blood cells in Poiseuille flow *(6 pages)* 033008
Daniel S. Hariprasad and Timothy W. Secomb

Bottlenecks in turbulent kinetic energy spectra predicted from structure function inflections using the Von Kármán-Howarth equation *(4 pages)* 033009
Gabriel G. Katul, Costantino Manes, Amilcare Porporato, Elie Bou-Zeid, and Marcelo Chamecki

Dynamical equations for the vector potential and the velocity potential in incompressible irrotational Euler flows: A refined Bernoulli theorem *(8 pages)* 033010
Koji Ohkitani

Nonaxisymmetric linear instability of cylindrical magnetohydrodynamic Taylor-Couette flow *(9 pages)* 033011
Adam Child, Evy Kersalé, and Rainer Hollerbach

Shape evolution of a melting nonspherical particle *(9 pages)* 033012
Daniel M. Kintea, Tobias Hauk, Ilia V. Roisman, and Cameron Tropea

Symmetric drop coalescence on an under-liquid substrate *(6 pages)* 033013
Surjyasish Mitra and Sushanta K. Mitra

Observation of two-dimensional Faraday waves in extremely shallow depth *(5 pages)* 033014
Xiaochen Li, Zhengyue Yu, and Shijun Liao

Physical processes causing the formation of penitentes *(10 pages)* 033015
P. Claudin, H. Jarry, G. Vignoles, M. Plapp, and B. Andreotti

Functional renormalization group approach to the Kraichnan model *(10 pages)* 033016
Carlo Pagani

Correlations between the instantaneous velocity gradient and the evolution of scale-to-scale fluxes in two-dimensional flow *(7 pages)* 033017
Yang Liao and Nicholas T. Ouellette

Asymmetry-induced electric current rectification in permselective systems *(12 pages)* 033018
Yoav Green, Yaron Edri, and Gilad Yossifon

Rarefaction waves in van der Waals fluids with an arbitrary number of degrees of freedom *(9 pages)* 033019
Albert Yuen and John J. Barnard

Plasma Physics

Models of the elastic x-ray scattering feature for warm dense aluminum *(6 pages)* 033101
C. E. Starrett and D. Saumon

Electron energy distribution in a dusty plasma: Analytical approach *(9 pages)* 033102
I. B. Denysenko, H. Kersten, and N. A. Azarenkov

Generalized Lenard-Balescu calculations of electron-ion temperature relaxation in beryllium plasma *(8 pages)* . . . 033103
Zhen-Guo Fu, Zhigang Wang, Da-Fang Li, Wei Kang, and Ping Zhang

(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 92, NUMBER 3** **SEPTEMBER 2015**

Transport of and radiation production by transrelativistic and nonrelativistic particles moving through sub-Larmor-scale electromagnetic turbulence *(15 pages)* 033104
Brett D. Keenan, Alexander L. Ford, and Mikhail V. Medvedev

Enhanced generation of a second-harmonic wave in a composite of metamaterial and microwave plasma with various permittivities *(8 pages)* 033105
Akinori Iwai, Yoshihiro Nakamura, and Osamu Sakai

Modulation of a compressional electromagnetic wave in a magnetized electron-positron quantum plasma *(11 pages)* 033106
M. R. Amin

Wave-number spectrum of dissipative drift waves and a transition scale *(5 pages)* 033107
K. Ghantous and Ö. D. Gürcan

Effects of target heating on experiments using $K\alpha$ and $K\beta$ diagnostics *(9 pages)* 033108
P. Palmeri, G. Boutoux, D. Batani, and P. Quinet

Atomic and optical properties of warm dense copper *(10 pages)* 033109
Gennady Miloshevsky and Ahmed Hassanein

Classical Physics

Scattering mean free path in continuous complex media: Beyond the Helmholtz equation *(11 pages)* 033201
Ibrahim Baydoun, Diego Baresch, Romain Pierrat, and Arnaud Derode

Coherence and aberration effects in surface plasmon polariton imaging *(15 pages)* 033202
Martin Berthel, Quanbo Jiang, Camille Chartrand, Joel Bellessa, Serge Huant, Cyriaque Genet, and Aurélien Drezet

Computational Physics

First-principles calculation method for electron transport based on the grid Lippmann-Schwinger equation *(16 pages)* 033301
Yoshiyuki Egami, Shigeru Iwase, Shigeru Tsukamoto, Tomoya Ono, and Kikuji Hirose

Measurement-based quantum lattice gas model of fluid dynamics in 2+1 dimensions *(8 pages)* 033302
Michael M. Micci and Jeffrey Yepez

Microcanonical ensemble simulation method applied to discrete potential fluids *(5 pages)* 033303
Francisco Sastre, Ana Laura Benavides, José Torres-Arenas, and Alejandro Gil-Villegas

Nonlinear model reduction for dynamical systems using sparse sensor locations from learned libraries *(13 pages)* 033304
Syuzanna Sargsyan, Steven L. Brunton, and J. Nathan Kutz

Lacunarity analysis of atomic configurations: Application to ethanol-water mixtures *(6 pages)* 033305
Orsolya Gereben

Lattice Boltzmann modeling of contact angle and its hysteresis in two-phase flow with large viscosity difference *(12 pages)* 033306
Haihu Liu, Yaping Ju, Ningning Wang, Guang Xi, and Yonghao Zhang

Matrix-free Brownian dynamics simulation technique for semidilute polymeric solutions *(10 pages)* 033307
Amir Saadat and Bamin Khomami

(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 92, NUMBER 3** **SEPTEMBER 2015**

COMMENTS

Comment on "Entanglement and chaos in the kicked top" *(3 pages)* 036901
Vaibhav Madhok

Reply to "Comment on 'Entanglement and chaos in the kicked top' " *(4 pages)* 036902
M. Lombardi and A. Matzkin

ERRATA

Erratum: Dephasing and dissipation in qubit thermodynamics [Phys. Rev. E **91**, 062109 (2015)] *(1 page)* . . . . . 039901(E)
J. P. Pekola, Y. Masuyama, Y. Nakamura, J. Bergli, and Y. M. Galperin

Erratum: Framework for analyzing ecological trait-based models in multidimensional niche spaces [Phys. Rev. E **91**, 052107 (2015)] *(1 page)* . . . . . 039902(E)
Tommaso Biancalani, Lee DeVille, and Nigel Goldenfeld

Publisher's Note: Extended particle-in-cell schemes for physics in ultrastrong laser fields: Review and developments [Phys. Rev. E **92**, 023305 (2015)] *(1 page)* . . . . . 039903(E)
A. Gonoskov, S. Bastrakov, E. Efimenko, A. Ilderton, M. Marklund, I. Meyerov, A. Muraviev, A. Sergeev, I. Surmin, and E. Wallin

Erratum: Message passing and moment closure for susceptible-infected-recovered epidemics on finite networks [Phys. Rev. E **89**, 022808 (2014)] *(2 pages)* . . . . . 039904(E)
Frank G. Ball, Robert R. Wilkinson, and Kieran J. Sharkey

Erratum: Influence of network topology on sound propagation in granular materials [Phys. Rev. E **86**, 041306 (2012)] *(2 pages)* . . . . . 039905(E)
Danielle S. Bassett, Eli T. Owens, Karen E. Daniels, and Mason A. Porter