

PHYSICAL REVIEW ETM

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 5
PARTS A AND B

CONTENTS

MAY 2013

*The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 050101(R)-052602, and Part B pages 052701-059906(E).*

PART A

RAPID COMMUNICATIONS

Statistical Physics

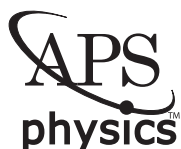
- Braid group and topological phase transitions in nonequilibrium stochastic dynamics (*5 pages*) 050101(R)
Jie Ren and N. A. Sinitsyn
- Entropic anomaly and maximal efficiency of microscopic heat engines (*4 pages*) 050102(R)
Stefano Bo and Antonio Celani
- Burnett coefficients in quantum many-body systems (*4 pages*) 050103(R)
R. Steinigeweg and T. Prosen

Colloids and Complex Fluids

- Chiral diffusion of rotary nanomotors (*4 pages*) 050301(R)
Amir Nourhani, Paul E. Lammert, Ali Borhan, and Vincent H. Crespi
- One- and two-particle dynamics in microfluidic T-junctions (*5 pages*) 050302(R)
Santtu T. T. Ollila, Colin Denniston, and Tapio Ala-Nissila

Liquid Crystals

- Doubly periodic instability pattern in a smectic-*A* liquid crystal (*5 pages*) 050501(R)
O. V. Manyuhina, G. Tordini, W. Bras, J. C. Maan, and P. C. M. Christianen
- Microscopic origins of first-order Sm-*A*–Sm-*C* phase behavior in de Vries smectic liquid crystals (*5 pages*) 050502(R)
Zachary V. Kost-Smith, Paul D. Beale, Noel A. Clark, and Matthew A. Glaser
- Smectic-*C** liquid crystals with six-layer periodicity appearing between the ferroelectric and antiferroelectric chiral smectic phases (*4 pages*) 050503(R)
Yoichi Takanishi, Isa Nishiyama, Jun Yamamoto, Youko Ohtsuka, and Atsuo Iida
- Singular values, nematic disclinations, and emergent biaxiality (*5 pages*) 050504(R)
Simon Čopar, Mark R. Dennis, Randall D. Kamien, and Slobodan Žumer



Copyright 2013 by American Physical Society

(Continued)



1539-3755(201305)87:5:B;1-8

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Biological Physics

- Asymmetric rotational stroke in mouse node cilia during left-right determination (*5 pages*) 050701(R)
 Atsuko Takamatsu, Takuji Ishikawa, Kyosuke Shinohara, and Hiroshi Hamada

Nonlinear Dynamics and Chaos

- Detecting unstable periodic orbits in high-dimensional chaotic systems from time series: Reconstruction meeting with adaptation (*5 pages*) 050901(R)
 Huanfei Ma, Wei Lin, and Ying-Cheng Lai
- Sensitivity to perturbations and quantum phase transitions (*4 pages*) 050902(R)
 D. A. Wisniacki and A. J. Roncaglia

Fluid Dynamics

- Hydrodynamic boundary condition of water on hydrophobic surfaces (*4 pages*) 051001(R)
 David Schaeffel, Stoyan Yordanov, Marcus Schmelzeisen, Tetsuya Yamamoto, Michael Kappl, Roman Schmitz, Burkhard Dünweg, Hans-Jürgen Butt, and Kaloian Koynov
- Observations of three-dimensional Richtmyer-Meshkov instability on a membraneless gas bubble (*4 pages*) 051002(R)
 Hong-Yu Chu and Dong-Kai Chen

Classical Physics

- Excitation of rogue waves in a variable medium: An experimental study on the interaction of water waves and currents (*4 pages*) 051201(R)
 A. Toffoli, T. Waseda, H. Houtani, T. Kinoshita, K. Collins, D. Proment, and M. Onorato

ARTICLES

Statistical Physics

- Effect of particle-hole symmetry on the behavior of tracer and jump diffusion coefficients (*11 pages*) 052101
 J. J. Torrez Herrera, G. A. Ranzuglia, S. J. Manzi, and V. D. Pereyra
- Tight-binding approach to overdamped Brownian motion on a multidimensional tilted periodic potential (*9 pages*) 052102
 K. J. Challis and Michael W. Jack
- Crumpled states of a wire in a cubic cavity with periodic obstacles (*8 pages*) 052103
 M. A. F. Gomes, C. C. S. Pereira, and V. P. Brito
- Log-amplitude statistics for Beck-Cohen superstatistics (*10 pages*) 052104
 Ken Kiyono and Hidetoshi Konno
- Diffusion of a particle quadratically coupled to a thermally fluctuating field (*10 pages*) 052105
 Vincent Démery
- Scaling laws in critical random Boolean networks with general in- and out-degree distributions (*8 pages*) 052106
 Marco Möller and Barbara Drossel
- Bond and site percolation in three dimensions (*8 pages*) 052107
 Junfeng Wang, Zongzheng Zhou, Wei Zhang, Timothy M. Garoni, and Youjin Deng

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Thermodynamics of biochemical networks and duality theorems (5 pages)		052108
Daniele De Martino		
Temperature gradient and Fourier's law in gradient-mass harmonic systems (4 pages)		052109
K. V. Reich		
ac-driven quantum phase transition in the Lipkin-Meshkov-Glick model (8 pages)		052110
G. Engelhardt, V. M. Bastidas, C. Emary, and T. Brandes		
Mean-field method with correlations determined by linear response (13 pages)		052111
Jack Raymond and Federico Ricci-Tersenghi		
Spin decoherence due to fluctuating fields (9 pages)		052112
Piotr Szańkowski, M. Trippenbach, and Y. B. Band		
Evidence for a fluctuation theorem in an atmospheric circulation model (4 pages)		052113
B. Schalge, R. Blender, J. Wouters, K. Fraedrich, and F. Lunkeit		
Voter models with conserved dynamics (10 pages)		052114
Fabio Caccioli, Luca Dall'Asta, Tobias Galla, and Tim Rogers		
Isotropic model of fractional transport in two-dimensional bounded domains (16 pages)		052115
A. Kullberg, D. del-Castillo-Negrete, G. J. Morales, and J. E. Maggs		
Emergent motion of condensates in mass-transport models (5 pages)		052116
Ori Hirschberg, David Mukamel, and Gunter M. Schütz		
Reduced dynamics of two oscillators collectively coupled to a thermal bath (10 pages)		052117
B. A. Tay		
Ising-like transitions in the $O(n)$ loop model on the square lattice (8 pages)		052118
Zhe Fu, Wenan Guo, and Henk W. J. Blöte		
Subdiffusive rocking ratchets in viscoelastic media: Transport optimization and thermodynamic efficiency in overdamped regime (9 pages)		052119
Vasyl O. Kharchenko and Igor Goychuk		
Fractal trace of earthworms (6 pages)		052120
Krzysztof Burdzy, Robert Hołyst, and Łukasz Pruski		
Thermal equilibrium in Einstein's elevator (7 pages)		052121
Bernardo Sánchez-Rey, Guillermo Chacón-Acosta, Leonardo Dagdug, and David Cubero		
Asymmetric drag in oscillatory motion: Ratchet effect without an asymmetric potential (5 pages)		052122
Vladimir M. Fomin, Elliot J. Smith, Dmitriy D. Karnausenko, Denys Makarov, and Oliver G. Schmidt		
Interacting nonequilibrium systems with two temperatures (7 pages)		052123
Roberto C. Alamino, Amit Chattopadhyay, and David Saad		
Heat conduction induced by non-Gaussian athermal fluctuations (10 pages)		052124
Kiyoshi Kanazawa, Takahiro Sagawa, and Hisao Hayakawa		
Poissonian renormalizations, exponentials, and power laws (13 pages)		052125
Iddo Eliazar		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Fourier's law from a chain of coupled anharmonic oscillators under energy-conserving noise (6 pages)		052126
Gabriel T. Landi and Mário J. de Oliveira		
Weakly explosive percolation in directed networks (7 pages)		052127
Shane Squires, Katherine Sytwu, Diego Alcala, Thomas M. Antonsen, Edward Ott, and Michelle Girvan		
Vapor-liquid coexistence of the Stockmayer fluid in nonuniform external fields (7 pages)		052128
Sela Samin, Yoav Tsori, and Christian Holm		
Statistics of the work done by splitting a one-dimensional quasicondensate (18 pages)		052129
Spyros Sotiriadis, Andrea Gambassi, and Alessandro Silva		
Phase transitions in supercritical explosive percolation (9 pages)		052130
Wei Chen, Jan Nagler, Xueqi Cheng, Xiaolong Jin, Huawei Shen, Zhiming Zheng, and Raissa M. D'Souza		
Fidelity susceptibility of the quantum Ising model in a transverse field: The exact solution (6 pages)		052131
Bogdan Damski		
Branching and annihilating random walks: Exact results at low branching rate (18 pages)		052132
Federico Benitez and Nicolás Wschebor		
Transport in topologically disordered one-particle, tight-binding models (10 pages)		052133
Abdellah Khodja, Hendrik Niemeyer, and Jochen Gemmer		
Universal shocks in the Wishart random-matrix ensemble (10 pages)		052134
Jean-Paul Blaizot, Maciej A. Nowak, and Piotr Warchol		
Collective dynamics in systems of active Brownian particles with dissipative interactions (11 pages)		052135
Vladimir Lobaskin and Maksym Romensky		
Width bifurcation and dynamical phase transitions in open quantum systems (15 pages)		052136
Hichem Eleuch and Ingrid Rotter		
Focusing in multiwell potentials: Applications to ion channels (9 pages)		052137
L. Ponzoni, G. L. Celardo, F. Borgonovi, L. Kaplan, and A. Kargol		
Chemical-potential route for multicomponent fluids (8 pages)		052138
Andrés Santos and René D. Rohrmann		
Random death process for the regularization of subdiffusive fractional equations (5 pages)		052139
Sergei Fedotov and Steven Falconer		
Phase transitions in the two-dimensional superantiferromagnetic Ising model with next-nearest-neighbor interactions (5 pages)		052140
A. Saguia, B. Boechat, J. Florencio, and O. F. de Alcantara Bonfim		
Global asymmetry of fluids and local singularity in the diameter of the coexistence curve (13 pages)		052141
Vitaly B. Rogankov and Valeriy I. Levchenko		
Non-Abelian statistics of vortices with non-Abelian Dirac fermions (25 pages)		052142
Shigehiro Yasui, Yuji Hirono, Kazunori Itakura, and Muneto Nitta		
Energy landscape of the finite-size spherical three-spin glass model (9 pages)		052143
Dhagash Mehta, Daniel A. Stariolo, and Michael Kastner		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Granular Materials

Geometry dependence of the clogging transition in tilted hoppers (<i>8 pages</i>)	052201
C. C. Thomas and D. J. Durian	
Unstable blast shocks in dilute granular flows (<i>8 pages</i>)	052202
J. F. Boudet and H. Kellay	
Lattice model of correlated forces in granular solids near jamming (<i>14 pages</i>)	052203
Jillian Newhall, Jing Cao, and Scott T. Milner	
Width of laminar laboratory rivers (<i>5 pages</i>)	052204
G. Seizilles, O. Devauchelle, E. Lajeunesse, and F. Métivier	
Rheology of three-dimensional packings of aggregates: Microstructure and effects of nonconvexity (<i>13 pages</i>)	052205
Emilien Azéma, Farhang Radjai, Baptiste Saint-Cyr, Jean-Yves Delenne, and Philippe Sornay	
Sand dunes as migrating strings (<i>6 pages</i>)	052206
L. Guignier, H. Niiya, H. Nishimori, D. Lague, and A. Valance	
Cohesive granular materials composed of nonconvex particles (<i>18 pages</i>)	052207
Baptiste Saint-Cyr, Farhang Radjai, Jean-Yves Delenne, and Philippe Sornay	
Drag force scaling for penetration into granular media (<i>5 pages</i>)	052208
Hiroaki Katsuragi and Douglas J. Durian	
Nonequilibrium fluctuations in a frictional granular motor: Experiments and kinetic theory (<i>6 pages</i>)	052209
Andrea Gnoli, Alessandro Sarracino, Andrea Puglisi, and Alberto Petri	
Reduction of compaction force in a confined bidisperse granular media (<i>6 pages</i>)	052210
F. M. Sánchez-Arévalo, H. Tapia-McClung, G. Pulos, and R. Zenit	

Colloids and Complex Fluids

Phonons in two-dimensional colloidal crystals with bond-strength disorder (<i>8 pages</i>)	052301
Matthew D. Gratale, Peter J. Yunker, Ke Chen, Tim Still, Kevin B. Aptowicz, and A. G. Yodh	
Heterogeneous relaxation dynamics in amorphous materials under cyclic loading (<i>6 pages</i>)	052302
Nikolai V. Priezjev	
Monte Carlo simulation of the nonadditive restricted primitive model of ionic fluids: Phase diagram and clustering (<i>15 pages</i>)	052303
Riccardo Fantoni and Giorgio Pastore	
Irreversibility and chaos: Role of lubrication interactions in sheared suspensions (<i>4 pages</i>)	052304
Bloen Metzger, Phong Pham, and Jason E. Butler	
Diffusive behaviors of circle-swimming motors (<i>10 pages</i>)	052305
Nathan A. Marine, Philip M. Wheat, Jesse Ault, and Jonathan D. Posner	
Equilibration and aging of dense soft-sphere glass-forming liquids (<i>19 pages</i>)	052306
Luis Enrique Sánchez-Díaz, Pedro Ramírez-González, and Magdaleno Medina-Noyola	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Thermodynamic perturbation theory for associating fluids with small bond angles: Effects of steric hindrance, ring formation, and double bonding (<i>12 pages</i>)	052307
Bennett D. Marshall and Walter G. Chapman	
Scaling behavior of universal pinch-off in two-dimensional foam (<i>6 pages</i>)	052308
Chin-Chang Kuo and Michael Dennin	
Correlation of reorientational jumps of water molecules in bulk water (<i>6 pages</i>)	052309
Chao Liu, Wenfei Li, and Wei Wang	
Multiple reentrant glass transitions of soft spheres at high densities: Monotonicity of the curves of constant relaxation time in jamming phase diagrams depending on temperature over pressure and pressure (<i>6 pages</i>)	052310
Michael Schmiedeberg	
Bragg scattering and Brownian motion dynamics in optically induced crystals of submicron particles (<i>11 pages</i>)	052311
R. E. Sapiro, B. N. Slama, and G. Raithel	
Multicomponent diffusion in molten LiCl-KCl: Dynamical correlations and divergent Maxwell-Stefan diffusivities (<i>7 pages</i>)	052312
Brahmananda Chakraborty, Jin Wang, and Jacob Eapen	
Influence of liquid structure on the thermodynamics of freezing (<i>10 pages</i>)	052313
Pierre Ronceray and Peter Harrowell	
Dimensional crossover of hard parallel cylinders confined on cylindrical surfaces (<i>12 pages</i>)	052314
Yuri Martínez-Ratón and Enrique Velasco	
Films, Interfaces, and Crystal Growth	
Continuum random sequential adsorption of polymer on a flat and homogeneous surface (<i>5 pages</i>)	052401
Michał Cieřła	
Phase-dependent premelting of self-assembled phosphonic acid multilayers (<i>8 pages</i>)	052402
M. de Pauli, R. Magalhães-Paniago, and A. Malachias	
Nonlinear dynamics of a thin liquid film on an axially oscillating cylindrical surface subjected to double-frequency forcing (<i>11 pages</i>)	052403
Ory Haimovich and Alexander Oron	
Molecular dynamics simulations of the evaporation of particle-laden droplets (<i>7 pages</i>)	052404
Weikang Chen, Joel Koplik, and Ilona Kretzschmar	
Interacting steps with finite-range interactions: Analytical approximation and numerical results (<i>9 pages</i>)	052405
Diego Felipe Jaramillo, Gabriel Téllez, Diego Luis González, and T. L. Einstein	
Structure and dynamics of interfaces between two coexisting liquid-crystalline phases (<i>8 pages</i>)	052406
Simon Praetorius, Axel Voigt, Raphael Wittkowski, and Hartmut Löwen	
Liquid Crystals	
Biaxial and antiferroelectric structure of the orthogonal smectic phase of a bent-shaped molecule and helical structure in a chiral mixture system (<i>7 pages</i>)	052501
Sungmin Kang, Ha Nguyen, Shunpei Nakajima, Masatoshi Tokita, and Junji Watanabe	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Orientational Kerr effect and phase modulation of light in deformed-helix ferroelectric liquid crystals with subwavelength pitch (<i>8 pages</i>)	052502
Evgeny P. Pozhidaev, Alexei D. Kiselev, Abhishek Kumar Srivastava, Vladimir G. Chigrinov, Hoi-Sing Kwok, and Maxim V. Minchenko	

Statistical mechanics of bend flexoelectricity and the twist-bend phase in bent-core liquid crystals (<i>11 pages</i>)	052503
Shaikh M. Shamid, Subas Dhakal, and Jonathan V. Selinger	

Optical analysis of spatially periodic patterns in nematic liquid crystals: Diffraction and shadowgraphy (<i>16 pages</i>)	052504
Werner Pesch and Alexei Krekhov	

Polymers

Partition function zeros of a square-lattice homopolymer with nearest- and next-nearest-neighbor interactions (<i>6 pages</i>)	052601
Jae Hwan Lee (이재환), Seung-Yeon Kim (김승연), and Julian Lee (이주련)	

Influence of polar groups in binary polymer blends on positronium formation (<i>8 pages</i>)	052602
P. Ramya, P. Guagliardo, T. Pasang, C. Ranganathaiah, S. Samarin, and J. F. Williams	

PART B

Biological Physics

Baldwin effect under multipeaked fitness landscapes: Phenotypic fluctuation accelerates evolutionary rate (<i>11 pages</i>)	052701
Nen Saito, Shuji Ishihara, and Kunihiro Kaneko	

Influence of swimming strategy on microorganism separation by asymmetric obstacles (<i>9 pages</i>)	052702
I. Berdakin, Y. Jeyaram, V. V. Moshchalkov, L. Venken, S. Dierckx, S. J. Vanderleyden, A. V. Silhanek, C. A. Condat, and V. I. Marconi	

Slow closure of denaturation bubbles in DNA: Twist matters (<i>8 pages</i>)	052703
Anil Kumar Dasanna, Nicolas Destainville, John Palmeri, and Manoel Manghi	

Microalga propels along vorticity direction in a shear flow (<i>7 pages</i>)	052704
Anwar Chengala, Miki Hondzo, and Jian Sheng	

Cargo transportation by two species of motor protein (<i>10 pages</i>)	052705
Yunxin Zhang	

Pressing soft membrane on a self-avoiding polymer against a flat wall (<i>7 pages</i>)	052706
Yu-Cheng Su and Jeff Z. Y. Chen	

Evolution and morphology of microenvironment-enhanced malignancy of three-dimensional invasive solid tumors (<i>10 pages</i>)	052707
Yang Jiao and Salvatore Torquato	

Flux-based classification of reactions reveals a functional bow-tie organization of complex metabolic networks (<i>11 pages</i>)	052708
Shalini Singh, Areejit Samal, Varun Giri, Sandeep Krishna, Nandula Raghuram, and Sanjay Jain	

Motor-mediated bidirectional transport along an antipolar microtubule bundle: A mathematical model (<i>12 pages</i>)	052709
Congping Lin, Peter Ashwin, and Gero Steinberg	

(*Continued*)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Global attractors and extinction dynamics of cyclically competing species (<i>16 pages</i>)		052710
Steffen Rulands, Alejandro Zielinski, and Erwin Frey		
Stochastic sensitivity analysis of the noise-induced excitability in a model of a hair bundle (<i>9 pages</i>)		052711
Irina Bashkirtseva, Alexander B. Neiman, and Lev Ryashko		
Atomic-resolution structural information from scattering experiments on macromolecules in solution (<i>7 pages</i>)		052712
Jürgen Köfinger and Gerhard Hummer		
Improved estimation of anomalous diffusion exponents in single-particle tracking experiments (<i>10 pages</i>)		052713
Eldad Kepten, Irena Bronshtein, and Yuval Garini		
Muscle contraction and the elasticity-mediated crosstalk effect (<i>6 pages</i>)		052714
Nadiv Dharan and Oded Farago		
Power-law trapping of water molecules on the lipid-membrane surface induces water retardation (<i>6 pages</i>)		052715
Eiji Yamamoto, Takuma Akimoto, Yoshinori Hirano, Masato Yasui, and Kenji Yasuoka		
Physical limits on cellular directional mechanosensing (<i>7 pages</i>)		052716
Roland Bouffanais, Jianmin Sun, and Dick K. P. Yue		
How noise contributes to time-scale invariance of interval timing (<i>10 pages</i>)		052717
Sorinel A. Oprisan and Catalin V. Buhusi		
Master equation approach for a cross-bridge power-stroke model with a finite number of motors (<i>12 pages</i>)		052718
Rui Ma, Ming Li, Zhong-Can Ou-Yang, and Yao-Gen Shu		
Interdisciplinary Physics		
Horizontal visibility graphs generated by type-I intermittency (<i>9 pages</i>)		052801
Ángel M. Núñez, Bartolo Luque, Lucas Lacasa, Jose Patricio Gómez, and Alberto Robledo		
Spatial correlations in nonequilibrium reaction-diffusion problems by the Gillespie algorithm (<i>9 pages</i>)		052802
Jorge Luis Hita and José María Ortiz de Zárate		
Impact of sequential disorder on the scaling behavior of airplane boarding time (<i>6 pages</i>)		052803
Yongjoo Baek, Meesoon Ha, and Hawoong Jeong		
Robustness of network of networks under targeted attack (<i>11 pages</i>)		052804
Gaogao Dong, Jianxi Gao, Ruijin Du, Lixin Tian, H. Eugene Stanley, and Shlomo Havlin		
Cracking condition of cohesionless porous materials in drying processes (<i>10 pages</i>)		052805
So Kitsunezaki (狐崎創)		
Fractal features of a crumpling network in randomly folded thin matter and mechanics of sheet crushing (<i>11 pages</i>)		052806
Alexander S. Balankin, Antonio Horta Rangel, Gregorio García Pérez, Felipe Gayosso Martinez, Hugo Sanchez Chavez, and Claudia L. Martínez-González		
Witness of unsatisfiability for a random 3-satisfiability formula (<i>10 pages</i>)		052807
Lu-Lu Wu, Hai-Jun Zhou, Mikko Alava, Erik Aurell, and Pekka Orponen		
Controlling collective dynamics in complex minority-game resource-allocation systems (<i>9 pages</i>)		052808
Ji-Qiang Zhang, Zi-Gang Huang, Jia-Qi Dong, Liang Huang, and Ying-Cheng Lai		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Scaling range of power laws that originate from fluctuation analysis (<i>8 pages</i>)	052809
Dariusz Grech and Zygmunt Mazur	
Evolutionary stability and resistance to cheating in an indirect reciprocity model based on reputation (<i>9 pages</i>) . . .	052810
Luis A. Martinez-Vaquero and José A. Cuesta	
Record-breaking avalanches in driven threshold systems (<i>13 pages</i>)	052811
Robert Shcherbakov, Jörn Davidsen, and Kristy F. Tiampo	
Percolation of partially interdependent scale-free networks (<i>8 pages</i>)	052812
Di Zhou, Jianxi Gao, H. Eugene Stanley, and Shlomo Havlin	
Weighted projected networks: Mapping hypergraphs to networks (<i>13 pages</i>)	052813
Eduardo López	
Network transfer entropy and metric space for causality inference (<i>12 pages</i>)	052814
Christopher R. S. Banerji, Simone Severini, and Andrew E. Teschendorff	
Nonlinear Dynamics and Chaos	
Chaos and reliability in balanced spiking networks with temporal drive (<i>13 pages</i>)	052901
Guillaume Lajoie, Kevin K. Lin, and Eric Shea-Brown	
Frequency precision of two-dimensional lattices of coupled oscillators with spiral patterns (<i>7 pages</i>)	052902
John-Mark A. Allen and M. C. Cross	
Bursting frequency versus phase synchronization in time-delayed neuron networks (<i>7 pages</i>)	052903
Anders Nordenfelt, Javier Used, and Miguel A. F. Sanjuán	
Detecting triplet locking by triplet synchronization indices (<i>6 pages</i>)	052904
Björn Kralemann, Arkady Pikovsky, and Michael Rosenblum	
Universal persistence exponent in transition to antiferromagnetic order in coupled logistic maps (<i>5 pages</i>)	052905
Prashant M. Gade and G. G. Sahasrabudhe	
Coexisting attractors and chaotic canard explosions in a slow-fast optomechanical system (<i>7 pages</i>)	052906
Francesco Marino and Francesco Marin	
Influence of system size on spatiotemporal dynamics of a model for plastic instability: Projecting low-dimensional and extensive chaos (<i>15 pages</i>)	052907
Ritupan Sarmah and G. Ananthakrishna	
Quantum chaotic scattering in graphene systems in the absence of invariant classical dynamics (<i>9 pages</i>)	052908
Guang-Lei Wang, Lei Ying, Ying-Cheng Lai, and Celso Grebogi	
Dynamics of the central-depleted-well regime in the open Bose-Hubbard trimer (<i>11 pages</i>)	052909
Vittorio Penna	
Synchronization properties of self-sustained mechanical oscillators (<i>11 pages</i>)	052910
Sebastián I. Arroyo and Damián H. Zanette	
Complex dynamics in nanosystems (<i>12 pages</i>)	052911
Xuan Ni, Lei Ying, Ying-Cheng Lai, Younghae Do, and Celso Grebogi	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Amplitude death phenomena in delay-coupled Hamiltonian systems (<i>5 pages</i>)		052912
Garima Saxena, Awadhesh Prasad, and Ram Ramaswamy		
Interaction of multiarmed spirals in bistable media (<i>7 pages</i>)		052913
Ya-feng He, Bao-quan Ai, and Fu-cheng Liu		
Generating mechanism for higher-order rogue waves (<i>10 pages</i>)		052914
J. S. He, H. R. Zhang, L. H. Wang, K. Porsezian, and A. S. Fokas		
Phase shielding soliton in parametrically driven systems (<i>17 pages</i>)		052915
Marcel G. Clerc, Mónica A. Garcia-Ñustes, Yair Zárata, and Saliya Coulibaly		
Systematic experimental exploration of bifurcations with noninvasive control (<i>7 pages</i>)		052916
D. A. W. Barton and J. Sieber		
Effects of time delay and random rewiring on the stochastic resonance in excitable small-world neuronal networks (<i>8 pages</i>)		052917
Haitao Yu, Jiang Wang, Jiwei Du, Bin Deng, Xile Wei, and Chen Liu		
Scattering of quantum wave packets by shallow potential islands: A quantum lens (<i>6 pages</i>)		052918
Arseni Goussev and Klaus Richter		
Subdeterminant approach for pseudo-orbit expansions of spectral determinants in quantum maps and quantum graphs (<i>10 pages</i>)		052919
Daniel Waltner, Sven Gnutzmann, Gregor Tanner, and Klaus Richter		
Three-state network design for robust loop-searching systems (<i>5 pages</i>)		052920
Kei-Ichi Ueda		
Validating the physical model of a chaotic system by topological analysis (<i>8 pages</i>)		052921
Javier Used and Juan Carlos Martín		
Dynamics of localized structures in reaction-diffusion systems induced by delayed feedback (<i>9 pages</i>)		052922
Svetlana V. Gurevich		
Fluid Dynamics		
Self-organization of ascending-bubble ensembles (<i>7 pages</i>)		053001
E. V. Barmina, N. A. Kirichenko, P. G. Kuzmin, and G. A. Shafeev		
Numerical investigation of non-Newtonian fluids in annular ducts with finite aspect ratio using lattice Boltzmann method (<i>15 pages</i>)		053002
S. Khali, R. Nebbali, D. E. Ameziani, and K. Bouhadev		
Breakup of microdroplets in asymmetric T junctions (<i>8 pages</i>)		053003
Milad Samie, Alinaghi Salari, and Mohammad Behshad Shafii		
Modulated exponential films generated by surface acoustic waves and their role in liquid wicking and aerosolization at a pinned drop (<i>6 pages</i>)		053004
Daniel Taller, David B. Go, and Hsueh-Chia Chang		
Collision of microswimmers in a viscous fluid (<i>8 pages</i>)		053005
M. Potomkin, V. Gyrya, I. Aranson, and L. Berlyand		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Interfacial instability of compressible slip flows in a microchannel (7 pages)		053006
Andong He		
Perturbative evaluation of universal numbers in homogeneous shear turbulence (7 pages)		053007
Kishore Dutta and Malay K. Nandy		
Uniqueness of Landau-Lifshitz energy frame in relativistic dissipative hydrodynamics (9 pages)		053008
Kyosuke Tsumura and Teiji Kunihiro		
Effects of external intermittency and mean shear on the spectral inertial-range exponent in a turbulent square jet (7 pages)		053009
J. Zhang, M. Xu, A. Pollard, and J. Mi		
Elongational flow effects on the vortex growth out of Couette flow in ferrofluids (9 pages)		053010
S. Altmeyer, A. Leschhorn, Ch. Hoffmann, and M. Lücke		
Blowup as a driving mechanism of turbulence in shell models (11 pages)		053011
Alexei A. Mailybaev		
Tensorial slip theory for gas flows and comparison with molecular dynamics simulations using an anisotropic gas-wall collision mechanism (9 pages)		053012
Thanh Tung Pham, Quy Dong To, Guy Lauriat, and Céline Léonard		
Effect of hydrogel particle additives on water-accessible pore structure of sandy soils: A custom pressure plate apparatus and capillary bundle model (10 pages)		053013
Y. Wei and D. J. Durian		
Control of centrifugally driven fingering in a tapered Hele-Shaw cell (7 pages)		053014
Eduardo O. Dias and José A. Miranda		
Taper-induced control of viscous fingering in variable-gap Hele-Shaw flows (6 pages)		053015
Eduardo O. Dias and José A. Miranda		
Bioconvection in spatially extended domains (10 pages)		053016
A. Karimi and M. R. Paul		
Effect of gravity on capillary instability of liquid jets (8 pages)		053017
Ghobad Amini, Matthias Ihme, and Ali Dolatabadi		
Gravity-driven fingering simulations for a thin liquid film flowing down the outside of a vertical cylinder (16 pages)		053018
Lisa C. Mayo, Scott W. McCue, and Timothy J. Moroney		
Efficiency of osmotic pipe flows (7 pages)		053019
Louise Sejling Haaning, Kaare Hartvig Jensen, Claus Hélix-Nielsen, Kirstine Berg-Sørensen, and Tomas Bohr		
Parity-breaking flows in precessing spherical containers (9 pages)		053020
R. Hollerbach, C. Nore, P. Marti, S. Vantighem, F. Luddens, and J. Léorat		
Unsteady aerodynamic forces and torques on falling parallelograms in coupled tumbling-helical motions (7 pages)		053021
Kapil Varshney, Song Chang, and Z. Jane Wang		
Active temperature and velocity correlations produced by a swimmer suspension (6 pages)		053022
C. Parra-Rojas and R. Soto		

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 87, NUMBER 5	MAY 2013
Instability of a bubble chain (6 pages)		053023
Wenjuan Zhang and Yu An		
Plasma Physics		
Effect of an electric field on air filament decay at the trail of an intense femtosecond laser pulse (9 pages)		053101
Sergey Bodrov, Nickolay Aleksandrov, Maxim Tsarev, Alexey Murzanev, Igor Kochetov, and Andrey Stepanov		
Nonequilibrium electron dynamics in materials driven by high-intensity x-ray pulses (4 pages)		053102
Stefan P. Hau-Riege		
Pattern dynamics and filamentation of femtosecond terawatt laser pulses in air including the higher-order Kerr effects (19 pages)		053103
T. W. Huang, C. T. Zhou, and X. T. He		
Collapse, decay, and single- $ k $ turbulence from a generalized nonlinear Schrödinger equation (7 pages)		053104
Shaoyan Cui (崔少燕), M. Y. Yu (郁明阳), and Dian Zhao (赵典)		
Ion stochastic trapping and drift turbulence evolution (9 pages)		053105
Madalina Vlad		
Helical structures in vertically aligned dust particle chains in a complex plasma (8 pages)		053106
Truell W. Hyde, Jie Kong, and Lorin S. Matthews		
Nonlinear saturation of wave packets excited by low-energy electron horseshoe distributions (14 pages)		053107
C. Krafft and A. Volokitin		
Quasicontiguous frequency-fluctuation model for calculation of hydrogen and hydrogenlike Stark-broadened line shapes in plasmas (8 pages)		053108
E. Stambulchik and Y. Maron		
Vertical-probe-induced asymmetric dust oscillation in complex plasma (10 pages)		053109
B. J. Harris, L. S. Matthews, and T. W. Hyde		
Large-scale dynamo growth rates from numerical simulations and implications for mean-field theories (7 pages)		053110
Kiwan Park, Eric G. Blackman, and Kandaswamy Subramanian		
Nonstationary magnetic microstructures in stellar thin accretion disks (7 pages)		053111
Giovanni Montani and Jacopo Petitta		
Langmuir oscillations in a nonextensive electron-positron plasma (10 pages)		053112
E. Saberian and A. Esfandiyari-Kalejahi		
Classical Physics		
Dynamics of a nonlocal discrete Gross-Pitaevskii equation with defects (7 pages)		053201
Yue Jian, Ai-Xia Zhang, Cai-Xia He, Xiu-Ying Qi, and Ju-Kui Xue		
Breather and rogue wave solutions of a generalized nonlinear Schrödinger equation (10 pages)		053202
L. H. Wang, K. Porsezian, and J. S. He		

(Continued)

Computational Physics

Lattice Boltzmann modeling of multiphase flows at large density ratio with an improved pseudopotential model (<i>11 pages</i>)	053301
Q. Li, K. H. Luo, and X. J. Li	
Monte Carlo tests of nucleation concepts in the lattice gas model (<i>15 pages</i>)	053302
Fabian Schmitz, Peter Virnau, and Kurt Binder	
Midinfrared femtosecond laser pulse filamentation in hollow waveguides: A comparison of simulation methods (<i>7 pages</i>)	053303
J. Andreasen and M. Kolesik	
Lattice Boltzmann model for thermal binary-mixture gas flows (<i>11 pages</i>)	053304
Jinfen Kang, Nikolaos I. Prasianakis, and John Mantzaras	
Quasi-continuous-time impurity solver for the dynamical mean-field theory with linear scaling in the inverse temperature (<i>12 pages</i>)	053305
D. Rost, F. Assaad, and N. Blümer	
Sharp-interface immersed boundary lattice Boltzmann method with reduced spurious-pressure oscillations for moving boundaries (<i>11 pages</i>)	053306
Li Chen, Yang Yu, and Guoxiang Hou	

BRIEF REPORTS**Statistical Physics**

Sigma method for the microcanonical entropy or density of states (<i>4 pages</i>)	054101
Rasmus A. X. Persson	
Extending multiple histogram reweighting to a continuous lattice spin system exhibiting a first-order phase transition (<i>4 pages</i>)	054102
Suman Sinha	

Colloids and Complex Fluids

Electric conductance of highly selective nanochannels (<i>4 pages</i>)	054301
Ory Schnitzer and Ehud Yariv	

Films, Interfaces, and Crystal Growth

Breath figures of two immiscible substances on a repellent surface (<i>5 pages</i>)	054401
J. Guadarrama-Cetina and W. González-Viñas	

Liquid Crystals

Antipersistent behavior of defects in a lyotropic liquid crystal during annihilation (<i>6 pages</i>)	054501
H. V. Ribeiro, R. R. Guimarães, R. T. Teixeira-Souza, H. Mukai, P. R. G. Fernandes, E. K. Lenzi, and R. S. Mendes	

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 87, NUMBER 5

MAY 2013

Interdisciplinary Physics

- Decelerated invasion and waning-moon patterns in public goods games with delayed distribution (*4 pages*) 054801
Attila Szolnoki and Matjaž Perc

Nonlinear Dynamics and Chaos

- Exponential spreading and singular behavior of quantum dynamics near hyperbolic points (*3 pages*) 054901
A. Iomin

Fluid Dynamics

- Stream of asymmetric bubbles in a Hele-Shaw channel (*5 pages*) 055001
Antônio Márcio P. Silva and Giovani L. Vasconcelos

ERRATA

- Erratum: Nonlinear electrokinetic flow about a polarized conducting drop
[Phys. Rev. E **87**, 041002(R) (2013)] (*1 page*) 059901(E)
Ory Schnitzer and Ehud Yariv
- Publisher's Note: Ultrafast physical generation of random numbers using hybrid Boolean networks
[Phys. Rev. E **87**, 040902(R) (2013)] (*1 page*) 059902(E)
David P. Rosin, Damien Rontani, and Daniel J. Gauthier
- Publisher's Note: Rogue waves of the Hirota and the Maxwell-Bloch equations
[Phys. Rev. E **87**, 012913 (2013)] (*1 page*) 059903(E)
Chuanzhong Li, Jingsong He, and K. Porsezian
- Publisher's Note: *N*-order bright and dark rogue waves in a resonant erbium-doped fiber system
[Phys. Rev. E **86**, 066603 (2012)] (*1 page*) 059904(E)
Jingsong He, Shuwei Xu, and K. Porsezian
- Publisher's Note: Area coverage of radial Lévy flights with periodic boundary conditions
[Phys. Rev. E **87**, 042136 (2013)] (*1 page*) 059905(E)
Mahsa Vahabi, Johannes H. P. Schulz, Babak Shokri, and Ralf Metzler
- Erratum: Transport properties for driven granular fluids in situations close to homogeneous steady states
[Phys. Rev. E **87**, 032201 (2013)] (*1 page*) 059906(E)
Vicente Garzó, Moisés G. Chamorro, and Francisco Vega Reyes