

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 88, NUMBER 6
PARTS A AND B

CONTENTS

DECEMBER 2013

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 060301(R)–062725, and Part B pages 062801–069905(E).

PART A

RAPID COMMUNICATIONS

Colloids and Complex Fluids

- Classical density functional theory for associating fluids in orienting external fields (*4 pages*) 060301(R)
Bennett D. Marshall, Walter G. Chapman, and Margarida M. Telo da Gama
- Dynamical arrest in adhesive hard-sphere dispersions driven by rigidity percolation (*5 pages*) 060302(R)
Néstor E. Valadez-Pérez, Yun Liu, Aaron P. R. Eberle, Norman J. Wagner, and Ramón Castañeda-Priego

Films, Interfaces, and Crystal Growth

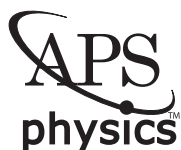
- Fractographic aspects of crack branching instability using a phase-field model (*4 pages*) 060401(R)
H. Henry and M. Adda-Bedia
- Self-organized defect strings in two-dimensional crystals (*4 pages*) 060402(R)
Wolfgang Lechner, David Polster, Georg Maret, Peter Keim, and Christoph Dellago
- Instabilities at frictional interfaces: Creep patches, nucleation, and rupture fronts (*5 pages*) 060403(R)
Yohai Bar-Sinai, Robert Spatschek, Efim A. Brener, and Eran Bouchbinder
- Moving contact line of a volatile fluid (*5 pages*) 060404(R)
V. Janeček, B. Andreotti, D. Pražák, T. Bárta, and V. S. Nikolayev

Networks and Interdisciplinary Physics

- Stochastic fluctuations and the detectability limit of network communities (*5 pages*) 060801(R)
Lucio Floretta, Jonas Liechti, Alessandro Flammini, and Paolo De Los Rios
- Classification of transport backbones of complex networks (*4 pages*) 060802(R)
Woosik Choi, Huiseung Chae, Soon-Hyung Yook, and Yup Kim

Nonlinear Dynamics and Chaos

- Stabilizing saddles (*5 pages*) 060901(R)
Elena Tamaševičiūtė, Gytis Mykolaitis, Skaidra Bumelienė, and Arūnas Tamaševičius



Copyright 2013 by American Physical Society

(Continued)



1539-3755(201312)88:6:B;1-E

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Random-matrix spectra as a time series (<i>4 pages</i>)	060902(R)
R. Fossion, G. Torres Vargas, and J. C. López Vieyra	

Fluid Dynamics

Contraction of an air disk caught between two different liquids (<i>4 pages</i>)	061001(R)
M.-J. Thoraval and S. T. Thoroddsen	

Computational Physics

Monte Carlo simulation with aspect-ratio optimization: Anomalous anisotropic scaling in dimerized antiferromagnets (<i>5 pages</i>)	061301(R)
Shinya Yasuda and Synge Todo	

ARTICLES

Statistical Physics

Biased and greedy random walks on two-dimensional lattices with quenched randomness: The greedy ant within a disordered environment (<i>13 pages</i>)	062101
T. L. Mitran, O. Melchert, and A. K. Hartmann	
Work fluctuations in a time-dependent harmonic potential: Rigorous results beyond the overdamped limit (<i>11 pages</i>)	062102
Chulan Kwon, Jae Dong Noh, and Hyunggyu Park	
Criticality and scaling behavior of percolation with multiple giant clusters under an Achlioptas process (<i>13 pages</i>)	062103
Yang Zhang, Wei Wei, Binghui Guo, Renquan Zhang, and Zhiming Zheng	
Pattern formation in individual-based systems with time-varying parameters (<i>13 pages</i>)	062104
Peter Ashcroft and Tobias Galla	
Transport and diffusion of overdamped Brownian particles in random potentials (<i>9 pages</i>)	062105
Marc Suñé Simon, J. M. Sancho, and Katja Lindenberg	
Renewal and memory origin of anomalous diffusion: A discussion of their joint action (<i>7 pages</i>)	062106
Mauro Bologna, Bruce J. West, and Paolo Grigolini	
Thermodynamics of quantum-jump-conditioned feedback control (<i>11 pages</i>)	062107
Philipp Strasberg, Gernot Schaller, Tobias Brandes, and Massimiliano Esposito	
Analytical calculation of four-point correlations for a simple model of cages involving numerous particles (<i>23 pages</i>)	062108
Ooshida Takeshi (大信田 丈志), Susumu Goto (後藤 晋), Takeshi Matsumoto (松本 剛), Akio Nakahara (中原 明生), and Michio Otsuki (大槻 道夫)	
Stability of earthquake clustering models: Criticality and branching ratios (<i>13 pages</i>)	062109
Jianchang Zhuang, Maximilian J. Werner, and David S. Harte	
Evanescent continuous-time random walks (<i>8 pages</i>)	062110
E. Abad, S. B. Yuste, and Katja Lindenberg	

(Continued)

Persistence of Brownian motion in a shear flow (<i>5 pages</i>)	062111
Yoshinori Takikawa and Hiroshi Orihara	
Kinetics of deposition of oriented superdisks (<i>4 pages</i>)	062112
Branislav N. Aleksić, N. M. Švrakić, and M. Belić	
Counting metastable states in a kinetically constrained model using a patch repetition analysis (<i>9 pages</i>)	062113
Robert L. Jack	
Conciliating synchronicity with spatial discretization, exclusion, interactions, and detailed balance (<i>4 pages</i>)	062114
Federico G. Pazzona, Pierfranco Demontis, and Giuseppe B. Suffritti	
Coefficient of performance for a low-dissipation Carnot-like refrigerator with nonadiabatic dissipation (<i>9 pages</i>)	062115
Yong Hu, Feifei Wu, Yongli Ma, Jizhou He, Jianhui Wang, A. Calvo Hernández, and J. M. M. Roco	
Local immobilization of particles in mass transfer described by a Jeffreys-type equation (<i>15 pages</i>)	062116
S. A. Rukolaine and A. M. Samsonov	
Scaling behavior of the Heisenberg model in three dimensions (<i>11 pages</i>)	062117
A. Gordillo-Guerrero, R. Kenna, and J. J. Ruiz-Lorenzo	
Driven isotropic Heisenberg spin chain with arbitrary boundary twisting angle: Exact results (<i>9 pages</i>)	062118
V. Popkov, D. Karevski, and G. M. Schütz	
Chloride ions induce order-disorder transition at water-oxide interfaces (<i>5 pages</i>)	062119
Sanket Deshmukh, Ganesh Kamath, Shriram Ramanathan, and Subramanian K. R. S. Sankaranarayanan	
Performance characteristics and optimal analysis of a nanosized quantum dot photoelectric refrigerator (<i>6 pages</i>)	062120
Cong Li, Yanchao Zhang, Jianhui Wang, and Jizhou He	
Two rigidity-percolation transitions on binary Bethe networks and the intermediate phase in glass (<i>10 pages</i>)	062121
Cristian F. Moukarzel	
Boosting work characteristics and overall heat-engine performance via shortcuts to adiabaticity: Quantum and classical systems (<i>7 pages</i>)	062122
Jiawen Deng, Qing-hai Wang, Zhihao Liu, Peter Hänggi, and Jiangbin Gong	
Thermodynamic cost of acquiring information (<i>8 pages</i>)	062123
Kaonan Micadei, Roberto M. Serra, and Lucas C. Céleri	
Transient aging in fractional Brownian and Langevin-equation motion (<i>13 pages</i>)	062124
Jochen Kursawe, Johannes Schulz, and Ralf Metzler	
Dependence of asymptotic decay exponents on initial condition and the resulting scaling violation (<i>6 pages</i>)	062125
Sourish Bondyopadhyay	
Geometrical aspects of quantum walks on random two-dimensional structures (<i>6 pages</i>)	062126
Anastasiia Anishchenko, Alexander Blumen, and Oliver Mülken	
Design and characterization of nonlinear functions for the transmission of a small signal with non-Gaussian noise (<i>6 pages</i>)	062127
Seiya Kasai, Yukihiro Tadokoro, and Akihisa Ichiki	

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Information-driven current in a quantum Maxwell demon (<i>7 pages</i>)	062128
Sebastian Deffner	
Rectification and diffusion of self-propelled particles in a two-dimensional corrugated channel (<i>7 pages</i>)	062129
Bao-quan Ai, Qiu-yan Chen, Ya-feng He, Feng-guo Li, and Wei-rong Zhong	
Jamming graphs: A local approach to global mechanical rigidity (<i>12 pages</i>)	062130
Jorge H. Lopez, L. Cao, and J. M. Schwarz	
Method to describe stochastic dynamics using an optimal coordinate (<i>17 pages</i>)	062131
Sergei V. Krivov	
Statistics of the duration time of a random walk given its present position: Dating a random walk (<i>5 pages</i>)	062132
Hernán Larralde	
Brownian particles on rough substrates: Relation between intermediate subdiffusion and asymptotic long-time diffusion (<i>7 pages</i>)	062133
Richard D. L. Hanes, Michael Schmiedeberg, and Stefan U. Egelhaaf	
Memory decay and loss of criticality in quorum percolation (<i>8 pages</i>)	062134
Renaud Renault, Pascal Monceau, and Samuel Bottani	
Nonequilibrium heat capacity (<i>4 pages</i>)	062135
Dibyendu Mandal	
Thermal fluctuation statistics in a molecular motor described by a multidimensional master equation (<i>8 pages</i>)	062136
K. J. Challis and M. W. Jack	
Accelerated transport and growth with symmetrized dynamics (<i>6 pages</i>)	062137
Juha Merikoski	
Information flow and optimal protocol for a Maxwell-demon single-electron pump (<i>7 pages</i>)	062139
J. Bergli, Y. M. Galperin, and N. B. Kopnin	
Nematic phase in stripe-forming systems within the self-consistent screening approximation (<i>8 pages</i>)	062140
Daniel G. Barci, Alejandro Mendoza-Coto, and Daniel A. Stariolo	
Nonequilibrium steady state and induced currents of a mesoscopically glassy system: Interplay of resistor-network theory and Sinai physics (<i>8 pages</i>)	062141
Daniel Hurowitz, Saar Rahav, and Doron Cohen	
Reaction-diffusion theory in the presence of an attractive harmonic potential (<i>10 pages</i>)	062142
K. Spendier, S. Sugaya, and V. M. Kenkre	
Normal-to-anomalous diffusion transition in disordered correlated potentials: From the central limit theorem to stable laws (<i>10 pages</i>)	062143
R. Salgado-García and Cesar Maldonado	
Tricritical behavior of soft nematic elastomers (<i>7 pages</i>)	062144
Danilo B. Liarte	
First-principles calculation of entropy for liquid metals (<i>9 pages</i>)	062145
Michael P. Desjarlais	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Generalized information entropies depending only on the probability distribution (<i>7 pages</i>)	062146
Octavio Obregón and Alejandro Gil-Villegas	
Equilibration of quantum chaotic systems (<i>9 pages</i>)	062147
Quntao Zhuang (庄群韬) and Biao Wu (吴飙)	
Full-counting statistics of random transition-rate matrices (<i>8 pages</i>)	062148
Uliana Mordovina and Clive Emary	
Influence of stochastic perturbation of both action updating and strategy updating in mixed-strategy 2×2 games on evolution of cooperation (<i>11 pages</i>)	062149
Kohei Miyaji, Jun Tanimoto, Aya Hagishima, and Naoki Ikegaya	
White-noise limit of nonwhite nonequilibrium processes (<i>7 pages</i>)	062150
Stefano Bo and Antonio Celani	
Jammed lattice sphere packings (<i>8 pages</i>)	062151
Yoav Kallus, Étienne Marcotte, and Salvatore Torquato	
Granular Materials	
Analog of surface melting in a macroscopic nonequilibrium system (<i>5 pages</i>)	062201
Christopher May, Michael Wild, Ingo Rehberg, and Kai Huang	
Simulations of granular gravitational collapse (<i>6 pages</i>)	062202
Samuel B. Kachuck and Greg A. Voth	
Drag force on a spherical intruder in a granular bed at low Froude number (<i>8 pages</i>)	062203
J. E. Hilton and A. Tordesillas	
Collision dynamics of particle clusters in a two-dimensional granular gas (<i>9 pages</i>)	062204
Justin C. Burton, Peter Y. Lu, and Sidney R. Nagel	
Homogeneous steady state of a confined granular gas (<i>11 pages</i>)	062205
J. Javier Brey, M. I. García de Soria, P. Maynar, and V. Buzón	
Effect of inertia on sheared disordered solids: Critical scaling of avalanches in two and three dimensions (<i>15 pages</i>)	062206
K. Michael Salerno and Mark O. Robbins	
Approach to failure in porous granular materials under compression (<i>11 pages</i>)	062207
Ferenc Kun, Imre Varga, Sabine Lennartz-Sassinek, and Ian G. Main	
Detailed characterization of rattlers in exactly isostatic, strictly jammed sphere packings (<i>12 pages</i>)	062208
Steven Atkinson, Frank H. Stillinger, and Salvatore Torquato	
Colloids and Complex Fluids	
Dynamic regimes for driven colloidal particles on a periodic substrate at commensurate and incommensurate fillings (<i>12 pages</i>)	062301
D. McDermott, J. Amelang, C. J. Olson Reichhardt, and C. Reichhardt	
Structure and coarsening at the surface of a dry three-dimensional aqueous foam (<i>9 pages</i>)	062302
A. E. Roth, B. G. Chen, and D. J. Durian	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Liquid-liquid phase transition in a two-dimensional system with anomalous liquid properties (<i>5 pages</i>)	062303
Tomaz Urbic	
Structure and dynamics of self-assembling colloidal monolayers in oscillating magnetic fields (<i>6 pages</i>)	062304
Alison E. Koser, Nathan C. Keim, and Paulo E. Arratia	
Fluctuations of orientational order and clustering in a two-dimensional colloidal system under quenched disorder (<i>9 pages</i>)	062305
Tobias Horn, Sven Deutschländer, Hartmut Löwen, Georg Maret, and Peter Keim	
Magnetic wire-based sensors for the microrheology of complex fluids (<i>8 pages</i>)	062306
L. Chevy, N. K. Sampathkumar, A. Cebers, and J.-F. Berret	
Nonequilibrium interfaces in colloidal fluids (<i>10 pages</i>)	062307
Markus Bier and Daniel Arnold	
Connecting the random organization transition and jamming within a unifying model system (<i>6 pages</i>)	062308
Lars Milz and Michael Schmiedeberg	
Far-from-equilibrium sheared colloidal liquids: Disentangling relaxation, advection, and shear-induced diffusion (<i>10 pages</i>)	062309
Neil Y. C. Lin, Sushmit Goyal, Xiang Cheng, Roseanna N. Zia, Fernando A. Escobedo, and Itai Cohen	
Active matter ratchets with an external drift (<i>10 pages</i>)	062310
C. Reichhardt and C. J. Olson Reichhardt	
Faraday waves on nematic liquid crystals: Effect of Marangoni flow and thermal phase transition (<i>10 pages</i>)	062311
M. Hernández-Contreras	
NaCl crystallization in apolar nanometer-sized confinement studied by atomistic simulations (<i>10 pages</i>)	062312
Immanuel Kalcher and Joachim Dzubiella	
Frequency dependence of dielectric saturation (<i>6 pages</i>)	062313
Ranko Richert	
Collective behavior of penetrable self-propelled rods in two dimensions (<i>11 pages</i>)	062314
Masoud Abkenar, Kristian Marx, Thorsten Auth, and Gerhard Gompper	
Three-dimensional dynamics of a particle with a finite energy of magnetic anisotropy in a rotating magnetic field (<i>7 pages</i>)	062315
J. Cīmurs and A. Cēbers	
Crystallization induced by multiple seeds: Dynamical density functional approach (<i>6 pages</i>)	062316
T. Neuhaus, M. Schmiedeberg, and H. Löwen	
Nanomotor mechanisms and motive force distributions from nanorotor trajectories (<i>9 pages</i>)	062317
Amir Nourhani, Young-Moo Byun, Paul E. Lammert, Ali Borhan, and Vincent H. Crespi	
Films, Interfaces, and Crystal Growth	
Onset of irreversibility and chaos in amorphous solids under periodic shear (<i>9 pages</i>)	062401
Ido Regev, Turab Lookman, and Charles Reichhardt	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Effects of initial height on the steady-state persistence probability of linear growth models (7 pages)	062402
R. Chanphana, P. Chatraphorn, and C. Dasgupta	
Avalanche localization and crossover scaling in amorphous plasticity (7 pages)	062403
Zoe Budrikis and Stefano Zapperi	
Minimization of instabilities in growing interfaces: A variational approach (8 pages)	062404
Eduardo O. Dias and José A. Miranda	
Effects of interface sliding on the formation of telephone cord buckles (5 pages)	062405
Kui Pan, Yong Ni, and Linghui He	
Droplet spreading on a two-dimensional wicking surface (5 pages)	062406
Chang Quan Lai, Trong Thi Mai, H. Zheng, P. S. Lee, K. C. Leong, Chengkuo Lee, and W. K. Choi	
Computer simulation and detailed mean-field approximation applied to adsorption on nanoparticles (9 pages)	062407
O. A. Pinto, B. López de Mishima, M. Dávila, A. J. Ramirez-Pastor, E. P. M. Leiva, and O. A. Oviedo	
Liquid Crystals	
Generalized Onsager theory of liquid crystals (10 pages)	062501
Xiaobin Xiao and Ping Sheng	
Formation of the smectic- <i>B</i> crystal from a simple monatomic liquid (4 pages)	062502
A. Metere, T. Oppelstrup, S. Sarman, A. Laaksonen, and M. Dzugutov	
Polarity sensitive electric responses in a twisted smectic- <i>C</i> liquid crystal (10 pages)	062503
K. S. Krishnamurthy	
Generalized Langevin-Debye model of the field dependence of tilt, birefringence, and polarization current near the de Vries smectic- <i>A</i> * to smectic- <i>C</i> * liquid crystal phase transition (10 pages)	062504
Yongqiang Shen, Lixing Wang, Renfan Shao, Tao Gong, Chenhui Zhu, Hong Yang, Joseph E. MacLennan, David M. Walba, and Noel A. Clark	
Bilayers in nanoparticle-doped polar mesogens (7 pages)	062505
Alexander Lorenz, Deña M. Agra-Kooijman, Natalie Zimmermann, Heinz-S. Kitzrow, Dean R. Evans, and Satyendra Kumar	
Biaxiality-induced magnetic field effects in bent-core nematics: Molecular-field and Landau theory (13 pages) . . .	062506
T. B. T. To, T. J. Sluckin, and G. R. Luckhurst	
Rotational and translational diffusion of anisotropic gold nanoparticles in liquid crystals controlled by varying surface anchoring (11 pages)	062507
Bohdan Senyuk, David Glugla, and Ivan I. Smalyukh	
Supramolecular nature of the nematic-nematic phase transitions of hard boardlike molecules (6 pages)	062508
Stavros D. Peroukidis, Alexandros G. Vanakaras, and Demetri J. Photinos	
Feedback control of flow alignment in sheared liquid crystals (10 pages)	062509
David A. Strehober, Eckehard Schöll, and Sabine H. L. Klapp	
Polymer-disordered liquid crystals: Susceptibility to an electric field (5 pages)	062510
Lena M. Lopatina and Jonathan V. Selinger	

(Continued)

Unusual temperature dependence of the splay elastic constant of a rodlike nematic liquid crystal doped with a highly kinked bent-core molecule (<i>5 pages</i>)	062511
Ji-Hoon Lee, Tae-Hoon Yoon, and E-Joon Choi	
Labyrinthine instability in freely suspended films of a polarization-modulated smectic phase (<i>8 pages</i>)	062512
Alexey Eremin, Ulrike Kornek, Ralf Stannarius, Wolfgang Weissflog, Hajnalka Nádasi, Fumito Araoka, and Hideo Takezoe	
Planar anchoring strength and pitch measurements in achiral and chiral chromonic liquid crystals using 90-degree twist cells (<i>9 pages</i>)	062513
Christine K. McGinn, Laura I. Laderman, Natalie Zimmermann, Heinz-S. Kitzerow, and Peter J. Collings	
Polymers	
Volume phase transition of <i>N</i> -isopropylacrylamide gels crosslinked by a crosslinker with six hands (<i>6 pages</i>)	062601
Azusa Saito, Junji Kimura, Yasuhiro Fujii, and Izumi Nishio	
Free-evolution kinetics in a high-swelling polymeric hydrogel (<i>7 pages</i>)	062602
M. Engelsberg and Wilson Barros, Jr.	
Electrical impedance controls mechanical sensing in ionic polymer metal composites (<i>12 pages</i>)	062603
Youngsu Cha, Filippo Cellini, and Maurizio Porfiri	
Writhe and mutual entanglement combine to give the entanglement length (<i>17 pages</i>)	062604
E. Panagiotou, M. Kröger, and K. C. Millett	
Creep anomaly in electrospun fibers made of globular proteins (<i>5 pages</i>)	062605
Omri Regev, Arkadii Arinstein, and Eyal Zussman	
Biological Physics	
Teardrop shapes minimize bending energy of fusion pores connecting planar bilayers (<i>11 pages</i>)	062701
Rolf J. Ryham, Mark A. Ward, and Fredric S. Cohen	
Squirmers dynamics near a boundary (<i>12 pages</i>)	062702
Kenta Ishimoto and Eamonn A. Gaffney	
Initiation and dynamics of a spiral wave around an ionic heterogeneity in a model for human cardiac tissue (<i>9 pages</i>)	062703
Arne Defauw, Peter Dawyndt, and Alexander V. Panfilov	
Transient domain formation in membrane-bound organelles undergoing maturation (<i>8 pages</i>)	062704
Serge Dmitrieff and Pierre Sens	
Spin models inferred from patient-derived viral sequence data faithfully describe HIV fitness landscapes (<i>10 pages</i>)	062705
Karthik Shekhar, Claire F. Ruberman, Andrew L. Ferguson, John P. Barton, Mehran Kardar, and Arup K. Chakraborty	
Principle for performing attractor transits with single control in Boolean networks (<i>6 pages</i>)	062706
Bo Gao, Lixiang Li, Haipeng Peng, Jürgen Kurths, Wenguang Zhang, and Yixian Yang	
Rheology of a vesicle suspension with finite concentration: A numerical study (<i>9 pages</i>)	062707
Marine Thiébaud and Chaouqi Misbah	

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Forces due to curving protofilaments in microtubules (<i>11 pages</i>)	062708
Shirish Vichare, Ishutesh Jain, Mandar M. Inamdar, and Ranjith Padinhateeri	
Stochastic model for protein flexibility analysis (<i>8 pages</i>)	062709
Kelin Xia and Guo-Wei Wei	
Cell-to-cell coordination for the spontaneous cAMP oscillation in <i>Dictyostelium</i> (<i>6 pages</i>)	062710
Seido Nagano and Shunsuke Sakurai	
Mathematical modeling of human brain physiological data (<i>8 pages</i>)	062711
Matthias Böhm, Rupert Faltermeier, Alexander Brawanski, and Elmar W. Lang	
Potassium ions in the cavity of a KcsA channel model (<i>6 pages</i>)	062712
Zhenwei Yao, Baofu Qiao, and Monica Olvera de la Cruz	
Model-independent decomposition of two-state data (<i>7 pages</i>)	062713
Eric C. Landahl and Sarah E. Rice	
Trend and fluctuations: Analysis and design of population dynamics measurements in replicate ecosystems (<i>20 pages</i>)	062714
Doeke R. Hekstra, Simona Cocco, Remi Monasson, and Stanislas Leibler	
Electromechanics of a membrane with spatially distributed fixed charges: Flexoelectricity and elastic parameters (<i>13 pages</i>)	062715
Bastien Loubet, Per Lyngs Hansen, and Michael Andersen Lomholt	
Potential decay of synapses and length distributions of synfire chains self-organized in recurrent neural networks (<i>14 pages</i>)	062716
Aaron Miller and Dezhe Z. Jin	
Self-organized criticality in single-neuron excitability (<i>5 pages</i>)	062717
Asaf Gal and Shimon Marom	
Dendritic signal transmission induced by intracellular charge inhomogeneities (<i>5 pages</i>)	062718
Ivan A. Lazarevich and Victor B. Kazantsev	
Quantification of non-Markovian effects in the Fenna-Matthews-Olson complex (<i>10 pages</i>)	062719
C. A. Mujica-Martinez, P. Nalbach, and M. Thorwart	
Lattice-free descriptions of collective motion with crowding and adhesion (<i>11 pages</i>)	062720
Stuart T. Johnston, Matthew J. Simpson, and Michael J. Plank	
Stable coexistence in a Lotka-Volterra model with heterogeneous resources and intraguild predation (<i>6 pages</i>) . . .	062721
Elena Y. Shchekinova, Martin G. J. Löder, Karen H. Wiltshire, and Maarten Boersma	
Global force-torque phase diagram for the DNA double helix: Structural transitions, triple points, and collapsed plectonemes (<i>18 pages</i>)	062722
John F. Marko and Sébastien Neukirch	
Biophysical significance of the inner mitochondrial membrane structure on the electrochemical potential of mitochondria (<i>10 pages</i>)	062723
Dong Hoon Song, Jonghyun Park, Laura L. Maurer, Wei Lu, Martin A. Philbert, and Ann Marie Sastry	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Collective behavior and predation success in a predator-prey model inspired by hunting bats (<i>9 pages</i>)	062724
Yuan Lin and Nicole Abaid	
Partial mixing phase of binary cells in finite systems (<i>7 pages</i>)	062725
Danh-Tai Hoang, Juyong Song, and Junghyo Jo	

PART B

Networks and Interdisciplinary Physics

Network growth with arbitrary initial conditions: Degree dynamics for uniform and preferential attachment (<i>19 pages</i>)	062801
Babak Fotouhi and Michael G. Rabbat	
Epidemic threshold in directed networks (<i>11 pages</i>)	062802
Cong Li, Huijuan Wang, and Piet Van Mieghem	
Laser-filament-induced snow formation in a subsaturated zone in a cloud chamber: Experimental and theoretical study (<i>7 pages</i>)	062803
Jingjing Ju, Haiyi Sun, Aravindan Sridharan, Tie-Jun Wang, Cheng Wang, Jiansheng Liu, Ruxin Li, Zhizhan Xu, and See Leang Chin	
Explaining Zipf's law via a mental lexicon (<i>10 pages</i>)	062804
Armen E. Allahverdyan, Weibing Deng, and Q. A. Wang	
Behavior of susceptible-vaccinated-infected-recovered epidemics with diversity in the infection rate of individuals (<i>9 pages</i>)	062805
Chao-Ran Cai, Zhi-Xi Wu, and Jian-Yue Guan	
Statistical mechanics of multiedge networks (<i>14 pages</i>)	062806
O. Sagarra, C. J. Pérez Vicente, and A. Díaz-Guilera	
Hierarchical scale-free network is fragile against random failure (<i>5 pages</i>)	062807
Takehisa Hasegawa and Koji Nemoto	
Scaling symmetry, renormalization, and time series modeling: The case of financial assets dynamics (<i>15 pages</i>)	062808
Marco Zamparo, Fulvio Baldovin, Michele Caraglio, and Attilio L. Stella	
Asymmetric coevolutionary voter dynamics (<i>11 pages</i>)	062809
Stefan Wieland and Ana Nunes	
Collective dynamics of pedestrians interacting with attractions (<i>6 pages</i>)	062810
Jaeyoung Kwak, Hang-Hyun Jo, Tapio Luttinen, and Iisakki Kosonen	
Calculation of mean spectral density for statistically uniform treelike random models (<i>10 pages</i>)	062811
E. Bogomolny and O. Giraud	
Robustness of network measures to link errors (<i>8 pages</i>)	062812
J. Platig, E. Ott, and M. Girvan	
Universal size effects for populations in group-outcome decision-making problems (<i>12 pages</i>)	062813
Christian Borghesi, Laura Hernández, Rémi Louf, and Fabrice Caparros	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Reducing financial avalanches by random investments (<i>7 pages</i>)	062814
Alessio Emanuele Biondo, Alessandro Pluchino, Andrea Rapisarda, and Dirk Helbing	
Effects of variable-state neighborhoods for spreading synergistic processes on lattices (<i>10 pages</i>)	062815
Sergei N. Taraskin and Francisco J. Pérez-Reche	
Percolation of a general network of networks (<i>13 pages</i>)	062816
Jianxi Gao, Sergey V. Buldyrev, H. Eugene Stanley, Xiaoming Xu, and Shlomo Havlin	
Critical properties of a dissipative sandpile model on small-world networks (<i>12 pages</i>)	062817
Himangsu Bhaumik and S. B. Santra	
Multiopinion coevolving voter model with infinitely many phase transitions (<i>7 pages</i>)	062818
Feng Shi, Peter J. Mucha, and Richard Durrett	
<i>s</i> -core network decomposition: A generalization of <i>k</i> -core analysis to weighted networks (<i>9 pages</i>)	062819
Marius Eidsaa and Eivind Almaas	
Percolation on random networks with arbitrary <i>k</i> -core structure (<i>9 pages</i>)	062820
Laurent Hébert-Dufresne, Antoine Allard, Jean-Gabriel Young, and Louis J. Dubé	
Nonlinear Dynamics and Chaos	
Integrable approximation of regular islands: The iterative canonical transformation method (<i>12 pages</i>)	062901
Clemens Löbner, Steffen Löck, Arnd Bäcker, and Roland Ketzmerick	
Metastable dynamical patterns and their stabilization in arrays of bidirectionally coupled sigmoidal neurons (<i>18 pages</i>)	062902
Yo Horikawa	
Optical rogue waves for the inhomogeneous generalized nonlinear Schrödinger equation (<i>5 pages</i>)	062903
Shally Loomba and Harleen Kaur	
Stability boundary and collisions of two-dimensional solitons in $\mathcal{PT}$ -symmetric couplers with the cubic-quintic nonlinearity (<i>8 pages</i>)	062904
Gennadiy Burlak and Boris A. Malomed	
Semiclassical theory of speckle correlations (<i>11 pages</i>)	062905
Maxim Breitzkreiz and Piet W. Brouwer	
Experimental observation of localized modes in a dielectric square resonator (<i>6 pages</i>)	062906
S. Bittner, E. Bogomolny, B. Dietz, M. Miski-Oglu, and A. Richter	
Effective dynamics of twisted and curved scroll waves using virtual filaments (<i>24 pages</i>)	062907
Hans Dierckx and Henri Verschelde	
Complex mode dynamics of coupled wave oscillators (<i>6 pages</i>)	062908
T. J. Alexander, D. Yan, and P. G. Kevrekidis	
Synchronization of chemical noise-sustained structures in asymmetrically coupled differential-flow reactors (<i>8 pages</i>)	062909
Gonzalo G. Izús and Alejandro D. Sánchez	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Nonlinear time reversal of classical waves: Experiment and model (<i>11 pages</i>)	062910
Matthew Frazier, Biniyam Taddese, Bo Xiao, Thomas Antonsen, Edward Ott, and Steven M. Anlage	
Synchronization of electrochemical oscillators with differential coupling (<i>9 pages</i>)	062911
Mahesh Wickramasinghe and István Z. Kiss	
Empirical method to measure stochasticity and multifractality in nonlinear time series (<i>10 pages</i>)	062912
Chih-Hao Lin, Chia-Seng Chang, and Sai-Ping Li	
Preferred frequency responses to oscillatory inputs in an electrochemical cell model: Linear amplitude and phase resonance (<i>16 pages</i>)	062913
Horacio G. Rotstein	
Topological bifurcations in a model society of reasonable contrarians (<i>9 pages</i>)	062914
Franco Bagnoli and Raúl Rechtman	
Clustering in delay-coupled smooth and relaxational chemical oscillators (<i>9 pages</i>)	062915
Karen Blaha, Judith Lehnert, Andrew Keane, Thomas Dahms, Philipp Hövel, Eckehard Schöll, and John L. Hudson	
Transfer of dipolar gas through the discrete localized mode (<i>7 pages</i>)	062916
Xiao-Dong Bai, Ai-Xia Zhang, and Ju-Kui Xue	
Stabilization of a scroll ring by a cylindrical Neumann boundary (<i>7 pages</i>)	062917
P. V. Paulau, J. Löber, and H. Engel	
Quasiperiodic graphs at the onset of chaos (<i>8 pages</i>)	062918
B. Luque, M. Cordero-Gracia, M. Gómez, and A. Robledo	
Universal asymptotic behavior in nonlinear systems driven by a two-frequency forcing (<i>5 pages</i>)	062919
Jesús Casado-Pascual, David Cubero, and Ferruccio Renzoni	
Nucleation in bistable dynamical systems with long delay (<i>8 pages</i>)	062920
Giovanni Giacomelli, Francesco Marino, Michael A. Zaks, and Serhiy Yanchuk	
General multicomponent Yajima-Oikawa system: Painlevé analysis, soliton solutions, and energy-sharing collisions (<i>14 pages</i>)	062921
T. Kanna, K. Sakkaravarthi, and K. Tamilselvan	
Phase noise of oscillators with unsaturated amplifiers (<i>7 pages</i>)	062922
Eyal Kenig, M. C. Cross, Jeff Moehlis, and Kurt Wiesenfeld	
Dependence of scroll-wave dynamics on the orientation of a gradient of excitability (<i>6 pages</i>)	062923
Patricia Dähmlow and Marcus J. B. Hauser	
Limits to detection of generalized synchronization in delay-coupled chaotic oscillators (<i>13 pages</i>)	062924
Hideyuki Kato, Miguel C. Soriano, Ernesto Pereda, Ingo Fischer, and Claudio R. Mirasso	
Circularly polarized few-cycle optical rogue waves: Rotating reduced Maxwell-Bloch equations (<i>16 pages</i>)	062925
Shuwei Xu, K. Porsezian, Jingsong He, and Yi Cheng	
Semiclassical initial-value representation of the transfer operator (<i>15 pages</i>)	062926
Haim Barak and Kenneth G. Kay	

(Continued)

Fluid Dynamics

Statistics of turbulent fluctuations in counter-rotating Taylor-Couette flows (<i>7 pages</i>)	063001
Sander G. Huisman, Detlef Lohse, and Chao Sun	
Dual role of gravity on the Faraday threshold for immiscible viscous layers (<i>5 pages</i>)	063002
W. Batson, F. Zoueshtiagh, and R. Narayanan	
Stretch flow of confined non-Newtonian fluids: Nonlinear fingering dynamics (<i>7 pages</i>)	063003
Rodolfo Brandão, João V. Fontana, and José A. Miranda	
Fractal continuum model for tracer transport in a porous medium (<i>14 pages</i>)	063004
E. C. Herrera-Hernández, M. Coronado, and H. Hernández-Coronado	
Flow of a thin liquid film coating a horizontal stationary cylinder (<i>6 pages</i>)	063005
M. Cachile, M. A. Aguirre, M. Lenschen, and A. Calvo	
Dynamics of finite-symmetry and general-shaped objects under shear and shear alignment of uniaxial objects at finite temperatures (<i>7 pages</i>)	063006
Peilong Chen	
Viscous-fingering minimization in uniform three-dimensional porous media (<i>5 pages</i>)	063007
Eduardo O. Dias	
Multiple collisions in turbulent flows (<i>12 pages</i>)	063008
Michel Voßkuhle, Emmanuel Lévêque, Michael Wilkinson, and Alain Pumir	
Capillary channel flow experiments aboard the International Space Station (<i>8 pages</i>)	063009
M. Conrath, P. J. Canfield, P. M. Bronowicki, M. E. Dreyer, M. M. Weislogel, and A. Grah	
Approach and coalescence of liquid drops in air (<i>13 pages</i>)	063010
Joseph D. Paulsen	
Solid-particle jet formation under shock-wave acceleration (<i>6 pages</i>)	063011
V. Rodriguez, R. Saurel, G. Jourdan, and L. Houas	
Instabilities of a free bilayer flowing on an inclined porous medium (<i>13 pages</i>)	063012
A. Ananth Praveen Kumar, R. Usha, Tamal Banerjee, and Dipankar Bandyopadhyay	
Scalings for unsteady natural convection boundary layers on an evenly heated plate with time-dependent heating flux (<i>17 pages</i>)	063013
Wenxian Lin and S. W. Armfield	
Hyperbolic regions in flows through three-dimensional pore structures (<i>6 pages</i>)	063014
Jeffrey D. Hyman and C. Larrabee Winter	
Turbulent plane Poiseuille-Couette flow as a model for fluid slip over superhydrophobic surfaces (<i>11 pages</i>)	063015
Quoc T. Nguyen and Dimitrios V. Papavassiliou	
Instability of subharmonic resonances in magnetogravity shear waves (<i>17 pages</i>)	063016
A. Salhi and S. Nasraoui	
Symmetry breaking of decaying magnetohydrodynamic Taylor-Green flows and consequences for universality (<i>11 pages</i>)	063017
V. Dallas and A. Alexakis	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Electro-orientation and electrorotation of metal nanowires (<i>11 pages</i>)	063018
Juan J. Arcenegui, Pablo García-Sánchez, Hywel Morgan, and Antonio Ramos	
Flame front speed and onset of instability in the burning of inclined thin solid fuel samples (<i>6 pages</i>)	063019
Bruna Comas and Toni Pujol	
Convection patterns in a liquid metal under an imposed horizontal magnetic field (<i>12 pages</i>)	063020
Takatoshi Yanagisawa, Yozo Hamano, Takehiro Miyagoshi, Yasuko Yamagishi, Yuji Tasaka, and Yasushi Takeda	
Plasma Physics	
Analytical model for the radio-frequency sheath (<i>26 pages</i>)	063101
Uwe Czarnetzki	
Quantum theory of terahertz emission due to ultrashort pulse ionization of gases (<i>6 pages</i>)	063102
K. Schuh, M. Scheller, J. Hader, J. V. Moloney, and S. W. Koch	
Collisional and collisionless expansion of Yukawa balls (<i>11 pages</i>)	063103
Alexander Piel and John A. Goree	
Fast multidimensional model for the simulation of Raman amplification in plasma (<i>6 pages</i>)	063104
J. P. Farmer and A. Pukhov	
Exchange effects in plasmas: The case of low-frequency dynamics (<i>6 pages</i>)	063105
J. Zamanian, M. Marklund, and G. Brodin	
Thomas-Fermi Z-scaling laws and coupling stabilization for plasmas (<i>7 pages</i>)	063106
Philippe Arnault, Jean Cléroutin, Gregory Robert, Christopher Ticknor, Joel D. Kress, and Lee A. Collins	
Cancellation properties in Hall magnetohydrodynamics with a strong guide magnetic field (<i>12 pages</i>)	063107
L. N. Martin, G. De Vita, L. Sorriso-Valvo, P. Dmitruk, G. Nigro, L. Primavera, and V. Carbone	
Computational Physics	
Kinetic solvers with adaptive mesh in phase space (<i>21 pages</i>)	063301
Robert R. Arslanbekov, Vladimir I. Kolobov, and Anna A. Frolova	
Compression algorithm for discrete light-cone quantization (<i>7 pages</i>)	063302
Xiao Pu, Sophia S. Chabysheva, and John R. Hiller	
Discrete dipole approximation in time domain through the Laplace transform (<i>8 pages</i>)	063303
Patrick C. Chaumet, Ting Zhang, Adel Rahmani, Boris Gralak, and Kamal Belkebir	
Minimal model for acoustic forces on Brownian particles (<i>16 pages</i>)	063304
F. Balboa Usabiaga and R. Delgado-Buscalioni	
Multicomponent lattice Boltzmann equation method with a discontinuous hydrodynamic interface (<i>11 pages</i>)	063305
T. J. Spencer and I. Halliday	
Mean-field embedding of the dual-fermion approach for correlated electron systems (<i>9 pages</i>)	063306
S.-X. Yang, H. Terletska, Z. Y. Meng, J. Moreno, and M. Jarrell	
Symmetric multivariate polynomials as a basis for three-boson light-front wave functions (<i>6 pages</i>)	063307
Sophia S. Chabysheva, Blair Elliott, and John R. Hiller	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Comparison of scalable fast methods for long-range interactions (<i>22 pages</i>)	063308
Axel Arnold, Florian Fahrenberger, Christian Holm, Olaf Lenz, Matthias Bolten, Holger Dachselt, Rene Halver, Ivo Kabadshow, Franz Gähler, Frederik Heber, Julian Iseringhausen, Michael Hofmann, Michael Pippig, Daniel Potts, and Godehard Sutmann	
Statistical topology of three-dimensional Poisson-Voronoi cells and cell boundary networks (<i>14 pages</i>)	063309
Emanuel A. Lazar, Jeremy K. Mason, Robert D. MacPherson, and David J. Srolovitz	
Consistent two-population lattice Boltzmann model for thermal flows (<i>13 pages</i>)	063310
I. V. Karlin, D. Sichau, and S. S. Chikatamarla	

BRIEF REPORTS

Granular Materials

Evolution of the force distributions in jammed packings of soft particles (<i>5 pages</i>)	064201
Jens Boberski, M. Reza Shaejabi, and Dietrich E. Wolf	

Liquid Crystals

Onsagerian formula for the excluded volume of spherodisks (<i>3 pages</i>)	064501
Marco Piastra and Epifanio G. Virga	
Calculation of the nematic entropy using digital images (<i>4 pages</i>)	064502
F. M. C. Freire, N. M. Kimura, D. D. Luders, A. J. Palangana, and M. Simões	

Biological Physics

Physical aspects of the initial phase of endocytosis (<i>4 pages</i>)	064701
Vladimir P. Zhdanov	

Nonlinear Dynamics and Chaos

Alternate islands of multiple isochronous chains in wave-particle interactions (<i>5 pages</i>)	064901
M. C. de Sousa, I. L. Caldas, A. M. Ozorio de Almeida, F. B. Rizzato, and R. Pakter	

COMMENTS

Comment on “Ratchet universality in the presence of thermal noise” (<i>3 pages</i>)	066101
Niurka R. Quintero, Renato Alvarez-Nodarse, and José A. Cuesta	
Reply to “Comment on ‘Ratchet universality in the presence of thermal noise’ ” (<i>2 pages</i>)	066102
Pedro J. Martínez and Ricardo Chacón	

ERRATA

Erratum: Deformations of third-order Peregrine breather solutions of the nonlinear Schrödinger equation with four parameters [Phys. Rev. E 88 , 042903 (2013)] (<i>1 page</i>)	069901(E)
Pierre Gaillard	
Publisher’s Note: Channel-noise-induced stochastic facilitation in an auditory brainstem neuron model [Phys. Rev. E 88 , 052722 (2013)] (<i>1 page</i>)	069902(E)
Brett A. Schmerl and Mark D. McDonnell	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 6

DECEMBER 2013

Erratum: Extremal paths, the stochastic heat equation, and the three-dimensional Kardar-Parisi-Zhang universality class [Phys. Rev. E 88 , 042118 (2013)] (<i>1 page</i>)	069903(E)
Timothy Halpin-Healy	
Erratum: Nonlinear dielectric relaxation of polar molecules in a strong ac electric field: Steady state response [Phys. Rev. E 61 , 1211 (2000)] (<i>1 page</i>)	069904(E)
J. L. Déjardin and Yu. P. Kalmykov	
Publisher's Note: Instabilities at frictional interfaces: Creep patches, nucleation, and rupture fronts [Phys. Rev. E 88 , 060403(R) (2013)] (<i>1 page</i>)	069905(E)
Yohai Bar-Sinai, Robert Spatschek, Efim A. Brener, and Eran Bouchbinder	