

PM
p59/me

PHYSICAL REVIEW ETM

STATISTICAL, NONLINEAR,
AND SOFT MATTER PHYSICS

Articles Published in JULY 2013
PART A

Published by
AMERICAN PHYSICAL SOCIETYTM

Volume 88

Third Series

Number 1-A

*The Table of Contents is a total listing of Parts A and B.
Part A consists of pages 010101(R)-012606, and Part B pages 012701-019906(E).*

PART A

RAPID COMMUNICATIONS

Statistical Physics

- Single-particle tracking data reveal anticorrelated fractional Brownian motion in crowded fluids (*4 pages*) 010101(R)
Matthias Weiss

Granular Materials

- Impact of granular drops (*4 pages*) 010201(R)
J. O. Marston, M. M. Mansoor, and S. T. Thoroddsen

Colloids and Complex Fluids

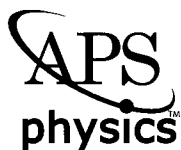
- Athermal jamming versus thermalized glassiness in sheared frictionless particles (*5 pages*) 010301(R)
Peter Olsson and S. Teitel

Films, Interfaces, and Crystal Growth

- Early stages of Ostwald ripening (*4 pages*) 010401(R)
Vitaly A. Shneidman
- Dynamic equilibrium explanation for nanobubbles' unusual temperature and saturation dependence (*5 pages*) 010402(R)
Nikolai D. Petsev, M. Scott Shell, and L. Gary Leal

Liquid Crystals

- Effect of anchoring energy and elastic anisotropy on spherical inclusions in a nematic liquid crystal (*5 pages*) 010501(R)
Richard James and Jun-ichi Fukuda (福田順一)
- Dual translocation pathways in smectic liquid crystals facilitated by molecular flexibility (*5 pages*) 010502(R)
Biswaroop Mukherjee, Christine Peter, and Kurt Kremer



Biological Physics

Fluctuation pressure of biomembranes in planar confinement (*4 pages*) 010701(R)
 Thorsten Auth and Gerhard Gompper

Sedimentation-induced tether on a settling vesicle (*5 pages*) 010702(R)
 Gwenn Boedec, Marc Jaeger, and Marc Leonetti

Cooperative transport in nanochannels (*4 pages*) 010703(R)
 Wolfgang R. Bauer and Walter Nadler

Networks and Interdisciplinary Physics

Detectability of communities in heterogeneous networks (*4 pages*) 010801(R)
 Filippo Radicchi

Explosive synchronization in a general complex network (*5 pages*) 010802(R)
 Xiyun Zhang, Xin Hu, J. Kurths, and Zonghua Liu

Nonlinear Dynamics and Chaos

Anticorrelation for conductance fluctuations in chaotic quantum dots (*5 pages*) 010901(R)
 A. L. R. Barbosa, M. S. Hussein, and J. G. G. S. Ramos

Fluid Dynamics

Wavelike statistics from pilot-wave dynamics in a circular corral (*5 pages*) 011001(R)
 Daniel M. Harris, Julien Moukhtar, Emmanuel Fort, Yves Couder, and John W. M. Bush

Turbulent Prandtl number in a model of passively advected vector field: Two-loop renormalization group
 result (*4 pages*) 011002(R)
 E. Jurčišínová, M. Jurčišin, and R. Remecký

Kármán-Howarth closure equation on the basis of a universal eddy viscosity (*4 pages*) 011003(R)
 F. Thiesset, R. A. Antonia, L. Danaïla, and L. Djenidi

Anomalous scaling of the magnetic field in the compressible Kazantsev-Kraichnan model:
 Two-loop renormalization group analysis (*4 pages*) 011004(R)
 E. Jurčišínová and M. Jurčišin

Classical Physics

Radiation reaction effects on the interaction of an electron with an intense laser pulse (*5 pages*) 011201(R)
 Yevgen Kravets, Adam Noble, and Dino Jaroszynski

Computational Physics

Model-free test of local-density mean-field behavior in electric double layers (*5 pages*) 011301(R)
 Brian Giera, Neil Henson, Edward M. Kober, Todd M. Squires, and M. Scott Shell

ARTICLES

Statistical Physics

Percolation thresholds of two-dimensional continuum systems of rectangles (<i>8 pages</i>)	012101
Jiantong Li and Mikael Östling	
Nonequilibrium fluctuation-dissipation inequality and nonequilibrium uncertainty principle (<i>10 pages</i>)	012102
C. H. Fleming, B. L. Hu, and Albert Roura	
Stiff directed lines in random media (<i>16 pages</i>)	012103
Horst-Holger Boltz and Jan Kierfeld	
Adiabatically driven Brownian pumps (<i>7 pages</i>)	012104
Viktor M. Rozenbaum, Yurii A. Makhnovskii, Irina V. Shapochkina, Sheh-Yi Sheu, Dah-Yen Yang, and Sheng Hsien Lin	
Static cooperator-defector patterns in models of the snowdrift game played on cycle graphs (<i>6 pages</i>)	012105
Robert A. Laird	
Thermal fluctuations of hydrodynamic flows in nanochannels (<i>15 pages</i>)	012106
François Detcheverry and Lydéric Bocquet	
Synchronization of stochastic oscillators in biochemical systems (<i>10 pages</i>)	012107
Joseph D. Challenger and Alan J. McKane	
Matrix-valued Boltzmann equation for the nonintegrable Hubbard chain (<i>10 pages</i>)	012108
Martin L. R. Fürst, Christian B. Mendl, and Herbert Spohn	
Statistical mechanics of a neutral point-vortex gas at low energy (<i>14 pages</i>)	012109
J. G. Esler, T. L. Ashbee, and N. R. McDonald	
Metastability for the Blume-Capel model with distribution of magnetic anisotropy using different dynamics (<i>13 pages</i>)	012110
Yoh Yamamoto and Kyungwha Park	
Fluctuation effects in the pair-annihilation process with Lévy dynamics (<i>13 pages</i>)	012111
Ingo Homrighausen, Anton A. Winkler, and Erwin Frey	
Nonconvexity of the relative entropy for Markov dynamics: A Fisher information approach (<i>11 pages</i>)	012112
Matteo Polettini and Massimiliano Esposito	
Thermodynamics in the vicinity of a relativistic quantum critical point in 2 + 1 dimensions (<i>15 pages</i>)	012113
A. Raçon, O. Kodio, N. Dupuis, and P. Lecheminant	
Maximum power operation of interacting molecular motors (<i>17 pages</i>)	012114
N. Golubeva and A. Imparato	
Critical and umbilical points of a non-Gaussian random field (<i>22 pages</i>)	012115
T. H. Beuman, A. M. Turner, and V. Vitelli	
Linear response, fluctuation-dissipation, and finite-system-size effects in superdiffusion (<i>8 pages</i>)	012116
Aljaž Godec and Ralf Metzler	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 88, NUMBER 1	JULY 2013
Generalized potentials for a mean-field density functional theory of a three-phase contact line (<i>12 pages</i>) Chang-You Lin, Michael Widom, and Robert F. Sekerka		012117
Out-of-equilibrium one-dimensional disordered dipole chain (<i>11 pages</i>) Anton V. Dolgikh and Daniel S. Kosov		012118
Trajectory phase transitions and dynamical Lee-Yang zeros of the Glauber-Ising chain (<i>10 pages</i>) James M. Hickey, Christian Flindt, and Juan P. Garrahan		012119
Potential condensed-matter realization of space-fractional quantum mechanics: The one-dimensional Lévy crystal (<i>6 pages</i>) B. A. Stickler		012120
First-passage characteristics of biased diffusion in a planar wedge (<i>6 pages</i>) Diandrew Lexter Dy and Jose Perico Esguerra		012121
Ising model of a glass transition (<i>10 pages</i>) J. S. Langer		012122
Noise-induced rupture process: Phase boundary and scaling of waiting time distribution (<i>5 pages</i>) Srutarshi Pradhan, Anjan Kumar Chandra, and Bikas K. Chakrabarti		012123
Immigration-extinction dynamics of stochastic populations (<i>6 pages</i>) Baruch Meerson and Otso Ovaskainen		012124
Residual discrete symmetry of the five-state clock model (<i>6 pages</i>) Seung Ki Baek, Harri Mäkelä, Petter Minnhagen, and Beom Jun Kim		012125
Scattering and transport properties of tight-binding random networks (<i>7 pages</i>) A. J. Martínez-Mendoza, A. Alcazar-López, and J. A. Méndez-Bermúdez		012126
Packing and self-assembly of truncated triangular bipyramids (<i>12 pages</i>) Amir Haji-Akbari, Elizabeth R. Chen, Michael Engel, and Sharon C. Glotzer		012127
Thermal balance and quantum heat transport in nanostructures thermalized by local Langevin heat baths (<i>14 pages</i>) K. Säskilähti, J. Oksanen, and J. Tulkki		012128
Criticalities of the transverse- and longitudinal-field fidelity susceptibilities for the $d = 2$ quantum Ising model (<i>5 pages</i>) Yoshihiro Nishiyama (西山由弘)		012129
Quantum dynamical framework for Brownian heat engines (<i>12 pages</i>) G. S. Agarwal and S. Chaturvedi		012130
Critical behavior of the XY -rotor model on regular and small-world networks (<i>11 pages</i>) Sarah De Nigris and Xavier Leoncini		012131
Model for the catalytic oxidation of CO, including gas-phase impurities and CO desorption (<i>6 pages</i>) G. M. Buendía and P. A. Rikvold		012132
Self-similar evolution of the A -particle island–semi-infinite B -particle sea reaction-diffusion system (<i>4 pages</i>) Boris M. Shipilevsky		012133

(Continued)

Reentrant disordered phase in a system of repulsive rods on a Bethe-like lattice (<i>8 pages</i>)	012134
Jyjit Kundu and R. Rajesh	
Collective transport in the discrete Frenkel-Kontorova model (<i>7 pages</i>)	012135
T. D. Swinburne	
Mechanical properties of warped membranes (<i>12 pages</i>)	012136
Andrej Košmrlj and David R. Nelson	
Critical Casimir torques and forces acting on needles in two spatial dimensions (<i>29 pages</i>)	012137
O. A. Vasilyev, E. Eisenriegler, and S. Dietrich	
Nonlinear least-squares method for the inverse droplet coagulation problem (<i>11 pages</i>)	012138
Peter P. Jones, Robin C. Ball, and Colm Connaughton	
Capillary condensation in one-dimensional irregular confinement (<i>14 pages</i>)	012139
Thomas P. Handford, Francisco J. Pérez-Reche, and Sergei N. Taraskin	
Phase transitions of the p -spin model on pure Husimi lattices (<i>12 pages</i>)	012140
E. Jurčišinová and M. Jurčišin	
Granular Materials	
Oscillating gas flow induces reptation of granular droplets (<i>6 pages</i>)	012201
Javier C. Pastenes, Jean-Christophe Gémard, and Francisco Melo	
How dynamical clustering triggers Maxwell's demon in microgravity (<i>7 pages</i>)	012202
E. Opsomer, M. Noirhomme, N. Vandewalle, and F. Ludewig	
Granular avalanches in a two-dimensional rotating drum with imposed vertical vibration (<i>8 pages</i>)	012203
Daniel L. Amon, Tatiana Niculescu, and Brian C. Utter	
Lift and drag in intruders moving through hydrostatic granular media at high speeds (<i>11 pages</i>)	012204
Fabricio Q. Potiguar and Yang Ding	
Distribution of breakage events in random packings of rodlike particles (<i>5 pages</i>)	012205
Zdeněk Grof and František Štěpánek	
Frequency bands of strongly nonlinear homogeneous granular systems (<i>9 pages</i>)	012206
Joseph Lydon, K. R. Jayaprakash, Duc Ngo, Yuli Starosvetsky, Alexander F. Vakakis, and Chiara Daraio	
Two-state model to describe the rheological behavior of vibrated granular matter (<i>10 pages</i>)	012207
Ph. Marchal, C. Hanotin, L. J. Michot, and S. Kiesgen de Richter	
Slow axial drift in three-dimensional granular tumbler flow (<i>10 pages</i>)	012208
Zafir Zaman, Umberto D'Ortona, Paul B. Umbanhowar, Julio M. Ottino, and Richard M. Lueptow	
Three-dimensional simulations of nanopowder compaction processes by granular dynamics method (<i>12 pages</i>)	012209
G. Sh. Boltachev, K. E. Lukyashin, V. A. Shitov, and N. B. Volkov	

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 88, NUMBER 1

JULY 2013

Colloids and Complex Fluids

Flow pattern in the vicinity of self-propelling hot Janus particles (<i>6 pages</i>) Thomas Bickel, Arghya Majee, and Alois Würger	012301
Precursors of order in aggregates of patchy particles (<i>5 pages</i>) Oleg A. Vasilyev, Boris A. Klumov, and Alexei V. Tkachenko	012302
Anisotropic aggregation in a simple model of isotropically polymer-coated nanoparticles (<i>9 pages</i>) Jurriaan A. Luiken and Peter G. Bolhuis	012303
Mixing-demixing phase diagram for simple liquids in nonuniform electric fields (<i>11 pages</i>) Jennifer Galanis and Yoav Tsori	012304
Reentrant phase behavior in active colloids with attraction (<i>5 pages</i>) Gabriel S. Redner, Aparna Baskaran, and Michael F. Hagan	012305
Crystallization dynamics on curved surfaces (<i>7 pages</i>) Nicolás A. García, Richard A. Register, Daniel A. Vega, and Leopoldo R. Gómez	012306

Films, Interfaces, and Crystal Growth

Shape and symmetry of a fluid-supported elastic sheet (<i>6 pages</i>) Haim Diamant and Thomas A. Witten	012401
Stability of thin liquid films and sessile droplets under confinement (<i>14 pages</i>) Fabian Dörfler, Markus Rauscher, and S. Dietrich	012402
Controlling negative and positive photothermal migration of centimeter-sized droplets (<i>8 pages</i>) Masatoshi Ichikawa, Fumi Takabatake, Keitaro Miura, Takafumi Iwaki, Nobuyuki Magome, and Kenichi Yoshikawa	012403
Evaporation dynamics of nanodroplets and their anomalous stability on rough substrates (<i>6 pages</i>) Yawei Liu and Xianren Zhang	012404
Crystalline particle packings on constant mean curvature (Delaunay) surfaces (<i>8 pages</i>) Enrique Bendito, Mark J. Bowick, Agustin Medina, and Zhenwei Yao	012405

Liquid Crystals

Independent control of polar and azimuthal anchoring (<i>10 pages</i>) C. Anquetil-Deck, D. J. Cleaver, J. P. Bramble, and T. J. Atherton	012501
Dielectric spectroscopy of T-shaped blue-phase-III liquid crystal (<i>7 pages</i>) Manoj Marik, A. Mukherjee, D. Jana, A. Yoshizawa, and B. K. Chaudhuri	012502
Controlling the thermodynamic stability of intermediate phases in a cationic-amphiphile–water system with strongly binding counterions (<i>10 pages</i>) Santosh Prasad Gupta and V. A. Raghunathan	012503
Biaxial order parameter in the homologous series of orthogonal bent-core smectic liquid crystals (<i>5 pages</i>) S. Sreenilayam, Y. P. Panarin, J. K. Vij, M. Osipov, A. Lehmann, and C. Tschierske	012504

(Continued)

Oscillatory motion of sheared nanorods beyond the nematic phase (<i>12 pages</i>)	012505
David A. Strehober, Harald Engel, and Sabine H. L. Klapp	
Frequency-dependent dielectric contribution of flexoelectricity allowing control of state switching in helicoidal liquid crystals (<i>6 pages</i>)	012506
B. I. Outram and S. J. Elston	
Unified molecular field theory of nematic, smectic- <i>A</i> , and smectic- <i>C</i> phases (<i>12 pages</i>)	012507
G. Pająk and M. A. Osipov	
Confined nematic liquid crystal between two spherical boundaries with planar anchoring (<i>6 pages</i>)	012508
Seyed Reza Seyednejad, Mohammad Reza Mozaffari, and Mohammad Reza Ejtehadi	
Bifurcation properties of nematic liquid crystals exposed to an electric field: Switchability, bistability, and multistability (<i>13 pages</i>)	012509
L. J. Cummings, C. Cai, and L. Kondic	
Dynamical properties of nematic liquid crystals subjected to shear flow and magnetic fields: Tumbling instability and nonequilibrium fluctuations (<i>9 pages</i>)	012510
Jaka Fajar Fatriansyah and Hiroshi Orihara	
Orientational energy of anisometric particles in liquid-crystalline suspensions (<i>16 pages</i>)	012511
S. V. Burylov and A. N. Zakhlevnykh	
Numerical study of stretched smectic- <i>A</i> elastomer sheets (<i>13 pages</i>)	012512
A. W. Brown and J. M. Adams	
Polymers	
Simple model for chain packing and crystallization of soft colloidal polymers (<i>7 pages</i>)	012601
Robert S. Hoy and Nikos Ch. Karayiannis	
Constitutive modeling of the Mullins effect and cyclic stress softening in filled elastomers (<i>13 pages</i>)	012602
Roosbeh Dargazany and Mikhail Itskov	
Polymer chain properties and thermodynamic stability in oriented-platelet nanocomposites (<i>5 pages</i>)	012603
Yves Termonia	
Partition function zeros and phase transitions for a square-well polymer chain (<i>12 pages</i>)	012604
Mark P. Taylor, Pyie Phy Aung, and Wolfgang Paul	
Enthalpy relaxation and annealing effect in polystyrene (<i>10 pages</i>)	012605
Waki Sakatsuji, Takashi Konishi, and Yoshihisa Miyamoto	
Fluctuations in the coil-stretch transition of flexible polymers in good solvents: A peak due to nonlinear force relation (<i>6 pages</i>)	012606
Rangarajan Radhakrishnan and Patrick T. Underhill	