

PHYSICAL REVIEW E™

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 2470-0045)

PERIODICALS
Postmaster send address changes to:
APS Subscription Services
P.O. Box 41
Annapolis Junction, MD 20701

THIRD SERIES, VOLUME 104, NUMBER 4
PARTS A AND B

CONTENTS

OCTOBER 2021

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages L042101–044316, and Part B pages 044401–049901(E).

PART A

LETTERS

Statistical Physics

- Stochastic interpretation of g -subdiffusion process (5 pages) L042101
Tadeusz Kosztolowicz and Aldona Dutkiewicz

Networks and Complex Systems

- Explosive synchronization and chimera in interpinned multilayer networks (6 pages) L042301
Ajay Deep Kachhah and Sarika Jalan
- Phase separation induces congestion waves in electric vehicle charging (6 pages) L042302
Philip Marszal, Marc Timme, and Malte Schröder
- Construction of simplicial complexes with prescribed degree-size sequences (6 pages) L042303
Tzu-Chi Yen

Films and Interfaces

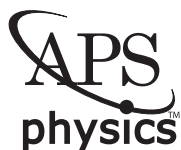
- Surface wetting by kinetic control of liquid-liquid phase separation (6 pages) L042801
Kyosuke Adachi and Kyogo Kawaguchi

Granular Materials

- Sand creep motion in slow spin-up experiment: An analog of regolith migration on asteroids (6 pages) L042901
Chenyang Huang, Yang Yu, Bin Cheng, Kaiming Zhang, Dong Qiao, and Hexi Baoyin

Fluid Dynamics

- High-speed NMR imaging of capillary action in thin nontransparent porous media (5 pages) L043101
R. Nicasy, H. P. Huinink, S. J. F. Erich, and O. C. G. Adan



Copyright 2021 by American Physical Society

(Continued)



2470-0045(202110)104:4:B;1-6

This paper was highlighted in the APS publication *Physics* (physics.aps.org).

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).

ARTICLES

Statistical Physics

Energy harvesting from anisotropic fluctuations (<i>7 pages</i>)	044101
Olga Movilla Miangolarra, Amirhossein Taghvaei, Rui Fu, Yongxin Chen, and Tryphon T. Georgiou	
Spatial and temporal memory effects in the Nagel-Schreckenberg model for crowdsourced traffic property determination (<i>9 pages</i>)	044102
Meshkat Botshekan and Franz-Josef Ulm	
Stationary nonequilibrium bound state of a pair of run and tumble particles (<i>16 pages</i>)	044103
Pierre Le Doussal, Satya N. Majumdar, and Grégory Schehr	
Application of the Widom insertion formula to transition rates in a lattice (<i>8 pages</i>)	044104
M. A. Di Muro and M. Hoyuelos	
Phase transition for parameter learning of hidden Markov models (<i>10 pages</i>)	044105
Nikita Rau, Jörg Lücke, and Alexander K. Hartmann	
Integrable spin chain with Hilbert space fragmentation and solvable real-time dynamics (<i>27 pages</i>)	044106
Balázs Pozsgay, Tamás Gombor, Arthur Hutsalyuk, Yunfeng Jiang, Levente Pristyák, and Eric Vernier	
Exact results for average cluster numbers in bond percolation on infinite-length lattice strips (<i>22 pages</i>)	044107
Shu-Chiuan Chang and Robert Shrock	
Roughening of the anharmonic elastic interface in correlated random media (<i>7 pages</i>)	044108
Alejandro Alés and Juan M. López	
Mass separation in an asymmetric channel (<i>5 pages</i>)	044109
Narender Khatri and P. S. Burada	
Excess entropy and Stokes-Einstein relation in simple fluids (<i>11 pages</i>)	044110
S. A. Khrapak and A. G. Khrapak	
Relating heat and entanglement in strong-coupling thermodynamics (<i>6 pages</i>)	044111
Bertúlio de Lima Bernardo	
Wigner function with correlation damping (<i>10 pages</i>)	044112
Luigi Barletti, Paolo Bordone, Lucio Demeio, and Elisa Giovannini	
Stochastic dynamics, large deviation principle, and nonequilibrium thermodynamics (<i>12 pages</i>)	044113
Liu Hong and Hong Qian	
Slow growth of magnetic domains helps fast evolution routes for out-of-equilibrium dynamics (<i>10 pages</i>)	044114
Isidoro González-Adalid Pemartín, Emanuel Mompó, Antonio Lasanta, Víctor Martín-Mayor, and Jesús Salas	
Higher-order efficiency bound and its application to nonlinear nanothermoelectrics (<i>8 pages</i>)	044115
Takuya Kamijima, Shun Otsubo, Yuto Ashida, and Takahiro Sagawa	
Stable charging of a Rydberg quantum battery in an open system (<i>15 pages</i>)	044116
Y. Yao and X. Q. Shao	

(Continued)

Spatiotemporal spread of perturbations in power-law models at low temperatures: Exact results for classical out-of-time-order correlators (<i>13 pages</i>)	044117
Bhanu Kiran S., David A. Huse, and Manas Kulkarni	
Two-dimensional diffusion biased by a transverse gravitational force in an asymmetric channel: Reduction to an effective one-dimensional description (<i>9 pages</i>)	044118
Ivan Pompa-García and Leonardo Dagdug	
Application of cell models to the melting and sublimation lines of the Lennard-Jones and related potential systems (<i>16 pages</i>)	044119
D. M. Heyes, S. Pieprzyk, and A. C. Brańka	
Supersymmetries in nonequilibrium Langevin dynamics (<i>8 pages</i>)	044120
Bastien Marguet, Elisabeth Agoritsas, Léonie Canet, and Vivien Lecomte	
Interaction-generated frustration in the ferromagnetic spin system on the kagome lattice: Exact analysis on the star kagomelike recursive lattice (<i>12 pages</i>)	044121
E. Jurčišinová and M. Jurčišin	
Maximal fluctuation exploitation in Gaussian information engines (<i>16 pages</i>)	044122
Joseph N. E. Lucero, Jannik Ehrich, John Bechhoefer, and David A. Sivak	
Domain growth and aging in the random field XY model: A Monte Carlo study (<i>12 pages</i>)	044123
Ramgopal Agrawal, Manoj Kumar, and Sanjay Puri	
Narrow escape problem in two-shell spherical domains (<i>27 pages</i>)	044124
Matthieu Mangeat and Heiko Rieger	
General existence and determination of conjugate fields in dynamically ordered magnetic systems (<i>12 pages</i>)	044125
M. Quintana and A. Berger	
One-dimensional telegraphic process with noninstantaneous stochastic resetting (<i>20 pages</i>)	044126
Mattia Radice	
Diffusion in crowded environments: Trapped by the drift (<i>13 pages</i>)	044127
Piotr Kubala, Michał Cieśla, and Bartłomiej Dybiec	
Excess entropy scaling law: A potential energy landscape view (<i>6 pages</i>)	044128
Anthony Saliou, Philippe Jarry, and Noel Jakse	
Thermodynamic calculations using reverse Monte Carlo (<i>11 pages</i>)	044129
Gargi Agrahari and Abhijit Chatterjee	
Analytical solution of stochastic resonance in the nonadiabatic regime (<i>9 pages</i>)	044130
Woosok Moon, L. T. Giorgini, and J. S. Wettlaufer	
Spin- s spin-glass phases in the $d = 3$ Ising model (<i>6 pages</i>)	044131
E. Can Artun and A. Nihat Berker	
Phase transitions in a three-dimensional Ising model with cluster weight studied by Monte Carlo simulations (<i>8 pages</i>)	044132
Ziyang Wang, Le Feng, Wanzhou Zhang, and Chengxiang Ding	

(Continued)

Efficiency gain and bidirectional operation of quantum engines with decoupled internal levels (<i>13 pages</i>)	044133
Thiago R. de Oliveira and Daniel Jonathan	
Dynamical phase transition to localized states in the two-dimensional random walk conditioned on partial currents (<i>12 pages</i>)	044134
Ricardo Gutiérrez and Carlos Pérez-Espigares	
Thermal rectification in three-dimensional mass-graded anharmonic oscillator lattices (<i>6 pages</i>)	044135
M. Romero-Bastida and M. Lindero-Hernández	
Dynamical regimes of finite-temperature discrete nonlinear Schrödinger chain (<i>18 pages</i>)	044136
Amit Kumar Chatterjee, Manas Kulkarni, and Anupam Kundu	
Critical exponents of block-block mutual information in one-dimensional infinite lattice systems (<i>14 pages</i>)	044137
Yan-Wei Dai, Xi-Hao Chen, Sam Young Cho, and Huan-Qiang Zhou	
Nonlinear Dynamics and Chaos	
Collision of two self-trapped atomic matter wave packets in an optical ring cavity (<i>10 pages</i>)	044201
Jieli Qin and Lu Zhou	
Normal form for the onset of collapse: The prototypical example of the nonlinear Schrödinger equation (<i>13 pages</i>)	044202
S. J. Chapman, M. Kavousanakis, I. G. Kevrekidis, and P. G. Kevrekidis	
Nonlinear dynamics of a self-mixing thin-slice solid-state laser subjected to Doppler-shifted optical feedback (<i>14 pages</i>)	044203
Kenju Otsuka and Seiichi Sudo	
Diffuse field cross-correlations: Scattering theory and electromagnetic experiments (<i>9 pages</i>)	044204
Matthieu Davy, Philippe Besnier, Philipp del Hougne, Julien de Rosny, Elodie Richalot, François Sarrazin, Dmitry V. Savin, Fabrice Mortessagne, Ulrich Kuhl, and Olivier Legrand	
Geometry, number theory, and the butterfly spectrum of two-dimensional Bloch electrons (<i>14 pages</i>)	044205
Indubala I. Satija	
Dynamics of $A + B \rightarrow C$ reaction fronts under radial advection in a Poiseuille flow (<i>18 pages</i>)	044206
Alessandro Comolli, A. De Wit, and Fabian Brau	
Undular bores generated by fracture (<i>15 pages</i>)	044207
C. G. Hooper, P. D. Ruiz, J. M. Huntley, and K. R. Khusnutdinova	
Higher-order dispersion and nonlinear effects of optical fibers under septic self-steepening and self-frequency shift (<i>13 pages</i>)	044208
Karabo K. Ndebele, Conrad B. Tabi, Camus G. Latchio Tiofack, and Timoléon C. Kofané	
Localized standing waves induced by spatiotemporal forcing (<i>7 pages</i>)	044209
P. J. Aguilera-Rojas, M. G. Clerc, G. Gonzalez-Cortes, and G. Jara-Schulz	
Identification of the invariant manifolds of the LiCN molecule using Lagrangian descriptors (<i>14 pages</i>)	044210
F. Revuelta, R. M. Benito, and F. Borondo	
Optimally frequency-synchronized networks of nonidentical Kuramoto oscillators (<i>13 pages</i>)	044211
L. Gil	

(Continued)

Generation of arbitrary probability distributions from chaotic dynamics (<i>9 pages</i>)	044212
M. J. Poulos	
Solitonic model of the condensate (<i>16 pages</i>)	044213
Andrey Gelash, Dmitry Agafontsev, Pierre Suret, and Stéphane Randoux	
Coupling disorder in a population of swarmalators (<i>7 pages</i>)	044214
Hyunsuk Hong, Kangmo Yeo, and Hyun Keun Lee	
Dynamical system analysis of a data-driven model constructed by reservoir computing (<i>7 pages</i>)	044215
Miki U. Kobayashi, Kengo Nakai, Yoshitaka Saiki, and Natsuki Tsutsumi	
Networks and Complex Systems	
Complex networks of interacting stochastic tipping elements: Cooperativity of phase separation in the large-system limit (<i>12 pages</i>)	044301
Jan Kohler, Nico Wunderling, Jonathan F. Donges, and Jürgen Vollmer	
Local time of random walks on graphs (<i>7 pages</i>)	044302
Václav Zatloukal	
Analytical solution of epidemic threshold for coupled information-epidemic dynamics on multiplex networks with alterable heterogeneity (<i>9 pages</i>)	044303
Xin Chang, Chao-Ran Cai, Ji-Qiang Zhang, and Chong-Yang Wang	
Amplitude death in coupled replicator map lattice: Averting migration dilemma (<i>13 pages</i>)	044304
Shubhadeep Sadhukhan, Rohitashwa Chattopadhyay, and Sagar Chakraborty	
Detection of functional communities in networks of randomly coupled oscillators using the dynamic-mode decomposition (<i>12 pages</i>)	044305
Christopher W. Curtis and Mason A. Porter	
Double transitions and hysteresis in heterogeneous contagion processes (<i>6 pages</i>)	044306
Joongjae Kook, Jeehye Choi, and Byungjoon Min	
Impact of individual behavioral changes on epidemic spreading in time-varying networks (<i>9 pages</i>)	044307
Bing Wang, Zeyang Xie, and Yuexing Han	
Social inequality analysis of fiber bundle model statistics and prediction of materials failure (<i>7 pages</i>)	044308
Soumyajyoti Biswas and Bikas K. Chakrabarti	
Consensus, polarization, and coexistence in a continuous opinion dynamics model with quenched disorder (<i>12 pages</i>)	044309
Joseph W. Baron	
Mean-field approximations of networks of spiking neurons with short-term synaptic plasticity (<i>15 pages</i>)	044310
Richard Gast, Thomas R. Knösche, and Helmut Schmidt	
How does homophily shape the topology of a dynamic network? (<i>11 pages</i>)	044311
Xiang Li, Mauro Mobilia, Alastair M. Rucklidge, and R. K. P. Zia	
Effect of algorithmic bias and network structure on coexistence, consensus, and polarization of opinions (<i>14 pages</i>)	044312
Antonio F. Peralta, Matteo Neri, János Kertész, and Gerardo Iñiguez	

(Continued)

Robust subgraph counting with distribution-free random graph analysis (<i>13 pages</i>)	044313
Johan S. H. van Leeuwen and Clara Stegehuis	
Impact of the baseline payoff on evolutionary outcomes (<i>12 pages</i>)	044314
Md. Rajib Arefin and Jun Tanimoto	
Systematic comparison of graph embedding methods in practical tasks (<i>13 pages</i>)	044315
Yi-Jiao Zhang, Kai-Cheng Yang, and Filippo Radicchi	
Effect of delayed awareness and fatigue on the efficacy of self-isolation in epidemic control (<i>8 pages</i>)	044316
Giulia De Meijere, Vittoria Colizza, Eugenio Valdano, and Claudio Castellano	

PART B

Biological Physics

Heterogeneity is not always a source of noise: Stochastic gene expression in regulatory heterozygote (<i>9 pages</i>)	044401
Juneil Jang, François Amblard, and C.-M. Ghim	
Interdomain exchange and the flip-flop of cholesterol in ternary component lipid membranes and their effects on heterogeneous cholesterol diffusion (<i>10 pages</i>)	044402
Eun Sub Song, Younghoon Oh, and Bong June Sung	
Principles of slowed hydrogen diffusion through a mucus layer (<i>14 pages</i>)	044403
Owen L. Lewis, Ella Missey, and James P. Keener	
Observation of nucleic acid and protein correlation in chromatin of HeLa nuclei using small-angle neutron scattering with D ₂ O-H ₂ O contrast variation (<i>9 pages</i>)	044404
S. V. Grigoriev, E. G. Iashina, B. Wu, V. Pipich, Ch. Lang, A. Radulescu, V. Yu. Bairamukov, M. V. Filatov, R. A. Pantina, and E. Yu. Varfolomeeva	
Measuring the bending modulus of lipid bilayers with cholesterol (<i>7 pages</i>)	044405
John F. Nagle	
Inferring gene regulation dynamics from static snapshots of gene expression variability (<i>30 pages</i>)	044406
Euan Joly-Smith, Zitong Jerry Wang, and Andreas Hilfinger	
Game-environment feedback dynamics in growing population: Effect of finite carrying capacity (<i>11 pages</i>)	044407
Joy Das Bairagya, Samrat Sohel Mondal, Debashish Chowdhury, and Sagar Chakraborty	
 Snowdrift game induces pattern formation in systems of self-propelled particles (<i>24 pages</i>)	044408
Johanna Mayer, Michael Obermüller, Jonas Denk, and Erwin Frey	
Effect of extracellular volume on the energy stored in transmembrane concentration gradients (<i>17 pages</i>)	044409
Reinoud Maex	
Effect and correction of control delay in longitudinal dynamics of insect hovering flight (<i>16 pages</i>)	044410
Jie Yao and K. S. Yeo	
Characteristic lengths of transmembrane peptides controlling their tilt and lateral distribution between membrane domains (<i>15 pages</i>)	044411
Oleg V. Kondrashov, Konstantin V. Pinigin, and Sergey A. Akimov	
Enzyme regulation and mutation in a model serial-dilution ecosystem (<i>10 pages</i>)	044412
Amir Erez, Jaime G. Lopez, Yigal Meir, and Ned S. Wingreen	

(Continued)

Hidden role of mutations in the evolutionary process (<i>10 pages</i>)	044413
Alexandre de Aquino Soares, Lucas Wardil, Louis Bernard Klaczko, and Ronald Dickman	
Neurodegenerative damage reduces firing coherence in a continuous attractor model of grid cells (<i>13 pages</i>)	044414
Yuduo Zhi and Daniel Cox	
Continuous rate modeling of bacterial stochastic size dynamics (<i>12 pages</i>)	044415
César Nieto, César Vargas-García, and Juan M. Pedraza	
Colloids, Complex Fluids, and Active Matter	
Competition between Born solvation, dielectric exclusion, and Coulomb attraction in spherical nanopores (<i>16 pages</i>)	044601
Théo Hennequin, Manoel Manghi, and John Palmeri	
Low-temperature ordering of the dimer phase of a two-dimensional model of core-softened particles (<i>16 pages</i>)	044602
F. Mambretti, M. Martinelli, F. Civillini, M. Bertoletti, S. Riva, N. Manini, D. E. Galli, and D. Pini	
Critical point for demixing of binary hard spheres (<i>12 pages</i>)	044603
Hideki Kobayashi, Paul B. Rohrbach, Robert Scheichl, Nigel B. Wilding, and Robert L. Jack	
Dynamic magnetic susceptibility of a ferrofluid: The influence of interparticle interactions and ac field amplitude (<i>11 pages</i>)	044604
Michael S. Rusanov, Vladimir S. Zverev, and Ekaterina A. Elfimova	
Phases and homogeneous ordered states in alignment-based self-propelled particle models (<i>16 pages</i>)	044605
Yinong Zhao, Thomas Ihle, Zhanqiang Han, Cristián Huepe, and Pawel Romanczuk	
Alignment interactions drive structural transitions in biological tissues (<i>12 pages</i>)	044606
Matteo Paoluzzi, Luca Angelani, Giorgio Gosti, M. Cristina Marchetti, Ignacio Pagonabarraga, and Giancarlo Ruocco	
Spontaneous chiralization of polar active particles (<i>6 pages</i>)	044607
Marco De Corato, Ignacio Pagonabarraga, and Giovanniantonio Natale	
Mode-coupling theory for tagged-particle motion of active Brownian particles (<i>17 pages</i>)	044608
Julian Reichert, Suvendu Mandal, and Thomas Voigtmann	
Reversibility in nonequilibrium steady states as a measure of distance from equilibrium (<i>5 pages</i>)	044609
Michael Jade Y. Jerez, Mike A. Bonachita, and Mark Nolan P. Confesor	
Alignment-mediated segregation in an active-passive mixture (<i>11 pages</i>)	044610
Naveen Kumar Agrawal and Pallab Sinha Mahapatra	
Data-driven criterion for the solid-liquid transition of two-dimensional self-propelled colloidal particles far from equilibrium (<i>8 pages</i>)	044611
Wei-chen Guo, Bao-quan Ai, and Liang He	
Dynamic overlap concentration scale of active colloids (<i>6 pages</i>)	044612
Stewart A. Mallory, Ahmad K. Omar, and John F. Brady	
Active matter herding and clustering in inhomogeneous environments (<i>11 pages</i>)	044613
P. Forgács, A. Libál, C. Reichhardt, and C. J. O. Reichhardt	

(Continued)

Directional shear jamming of frictionless ellipses (<i>8 pages</i>)	044614
Martin Trulsson	

Liquid Crystals

Surface anchoring as a control parameter for shaping skyrmion or toron properties in thin layers of chiral nematic liquid crystals and noncentrosymmetric magnets (<i>15 pages</i>)	044701
Andrey O. Leonov	

Combined electric and photocontrol of selective light reflection at an oblique helicoidal cholesteric liquid crystal doped with azoxybenzene derivative (<i>9 pages</i>)	044702
Kamal Thapa, Olena S. Iadlovska, Hari Krishna Bisoyi, Daniel A. Paterson, John M. D. Storey, Corrie T. Imrie, Quan Li, Sergij V. Shiyankovskii, and Oleg D. Lavrentovich	

Lattice Boltzmann and Jones matrix calculations for the determination of the director field structure in self-propelling nematic droplets (<i>14 pages</i>)	044703
Christian Bahr	

Transition kinetics of defect patterns in confined two-dimensional smectic liquid crystals (<i>7 pages</i>)	044704
Xiao-Jie Zhang, Yu-Wei Sun, Zhan-Wei Li, and Zhao-Yan Sun	

Two-fluid model for a fluid with tetrahedral-octupolar order (<i>9 pages</i>)	044705
Helmut R. Brand and Harald Pleiner	

Films and Interfaces

Capillary condensation and depinning transitions in open slits (<i>19 pages</i>)	044801
Alexandr Malijevský and Andrew O. Parry	

Nonlinear ion transport mediated by induced charge in ultrathin nanoporous membranes (<i>11 pages</i>)	044802
J. Pedro de Souza, Chun-Man Chow, Rohit Karnik, and Martin Z. Bazant	

Electroneutrality breakdown in nanopore arrays (<i>13 pages</i>)	044803
J. Pedro de Souza, Amir Levy, and Martin Z. Bazant	

Granular Materials

 Frost spreading and pattern formation on microstructured surfaces (<i>7 pages</i>)	044901
Lukas Hauer, William S. Y. Wong, Azadeh Sharifi-Aghili, Lou Kondic, and Doris Vollmer	

Classification of emerging patterns in self-assembled two-dimensional magnetic lattices (<i>8 pages</i>)	044902
Ehsan Norouzi, Audrey A. Watkins, and Osama R. Bilal	

Generic mechanism for remote triggering of earthquakes (<i>10 pages</i>)	044903
Harish Charan, Anna Pomyalov, and Itamar Procaccia	

Direct observation of crystal nucleation and growth in a quasi-two-dimensional nonvibrating granular system (<i>11 pages</i>)	044904
A. Escobar, F. Donado, R. E. Moctezuma, and Eric R. Weeks	

Bond-space operator disentangles quasilocalized and phononic modes in structural glasses (<i>11 pages</i>)	044905
Julia A. Giannini, David Richard, M. Lisa Manning, and Edan Lerner	

(Continued)

Time scale disparity yielding acoustic nonreciprocity in a two-dimensional granular-elastic solid interface with asymmetry (<i>20 pages</i>)	044906
Chongan Wang, Sameh Tawfik, and Alexander F. Vakakis	
Marginal stability in memory training of jammed solids (<i>5 pages</i>)	044907
Francesco Arceri, Eric I. Corwin, and Varda F. Hagh	
Subdiffusion model for granular discharge in a submerged silo (<i>7 pages</i>)	044908
Miles L. Morgan, David W. James, Martin Monloubou, Kristian S. Olsen, and Bjørnar Sandnes	
Soft particle clogging in two-dimensional hoppers (<i>10 pages</i>)	044909
Ran Tao, Madelyn Wilson, and Eric R. Weeks	
Shear-induced mixing of granular materials featuring broad granule size distributions (<i>10 pages</i>)	044910
Joyjit Chattoraj, Nguyen Hoang Huy, Saurabh Aggarwal, Mohamed Salahuddin Habibullah, and Farzam Farbiz	
Solid Mechanics	
Creep trajectory transition of a nonstationary viscoelastic model onto a single rate parameter (<i>10 pages</i>)	045001
H. Tanaka, G. Yamanokuchi, and Y. Shibutani	
Nonclassical nonlinear elasticity of crystalline structures (<i>16 pages</i>)	045002
Aakash Khandelwal and Sunil Kishore Chakrapani	
Deployable motion of rotational sliceforms (<i>9 pages</i>)	045003
Tim Watson and Keith A. Seffen	
Phase diagram and snap-off transition for twisted party balloons (<i>8 pages</i>)	045004
Yu-Chuan Cheng, Ting-Heng Hsieh, Jih-Chiang Tsai, and Tzay-Ming Hong	
Fluid Dynamics	
Smallest scale of wrinkles of a Huygens front in extremely strong turbulence (<i>5 pages</i>)	045101
V. A. Sabelnikov, A. N. Lipatnikov, and A. I. Troshin	
Theory of freezing point depression in charged porous media (<i>12 pages</i>)	045102
Tingtao Zhou, Mohammad Mirzadeh, Roland J.-M. Pellenq, Dimitrios Fraggdakis, and Martin Z. Bazant	
Asymmetric invasion in anisotropic porous media (<i>12 pages</i>)	045103
Dario Maggiolo, Francesco Picano, and Federico Toschi	
Periodic Rayleigh streaming vortices and Eckart flow arising from traveling-wave-based diffractive acoustic fields (<i>13 pages</i>)	045104
Kirill Kolesnik, Pouya Hashemzadeh, Danli Peng, Melanie E. M. Stamp, Wei Tong, Vijay Rajagopal, Morteza Miansari, and David J. Collins	
Evaluation of gas permeability in porous separators for polymer electrolyte fuel cells: Computational fluid dynamics simulation based on micro-x-ray computed tomography images (<i>13 pages</i>)	045105
Soichiro Shimotori, Toshihiro Kaneko, Yuta Yoshimoto, Ikuya Kinefuchi, Amer Alizadeh, Wei-Lun Hsu, and Hirofumi Daiguji	
Viscous normal stresses and fingertip tripling in radial Hele-Shaw flows (<i>15 pages</i>)	045106
Írio M. Coutinho, Francisco M. Rocha, and José A. Miranda	

(Continued)

Drifting frozen waves (<i>8 pages</i>)	045107
V. García Bennett, P. Salgado Sánchez, D. Gligor, and J. Porter	
Predicting complex nonspherical instability shapes of inertial cavitation bubbles in viscoelastic soft matter (<i>9 pages</i>)	045108
Jin Yang, Anastasia Tzoumaka, Kazuya Murakami, Eric Johnsen, David L. Henann, and Christian Franck	
Plasma Physics	
Methods for extremely sparse-angle proton tomography (<i>12 pages</i>)	045201
B. T. Spiers, R. Aboushelbaya, Q. Feng, M. W. Mayr, I. Ouatu, R. W. Paddock, R. Timmis, R. H.-W. Wang, and P. A. Norreys	
Exploring the nonextensive thermodynamics of partially ionized gas in magnetic field (<i>6 pages</i>)	045202
June Young Kim, Hyo-Chang Lee, Geunwoo Go, Yeong Hwan Choi, Y. S. Hwang, and Kyoung-Jae Chung	
Reflection and absorption of electromagnetic radiation by inhomogeneous photoionized plasma, produced by multiphoton ionization of inert gas atoms (<i>10 pages</i>)	045203
K. Yu. Vagin, T. V. Mamontova, and S. A. Uryupin	
Virial expansion of the electrical conductivity of hydrogen plasmas (<i>7 pages</i>)	045204
G. Röpke, M. Schörner, R. Redmer, and M. Bethkenhagen	
Configurational temperature of multispecies dusty plasmas (<i>8 pages</i>)	045205
Frank Wieben, Dietmar Block, Michael Himpel, and André Melzer	
Effects of simulation dimensionality on laser-driven electron acceleration and photon emission in hollow microchannel targets (<i>9 pages</i>)	045206
Tao Wang, David Blackman, Katherine Chin, and Alexey Arefiev	
Ionization state and dielectric constant in cold rarefied hydrocarbon plasmas of inertial confinement fusion (<i>10 pages</i>)	045207
A. Shvydky, A. V. Maximov, V. V. Karasiev, D. Haberberger, S. X. Hu, and V. N. Goncharov	
Charge measurement of SiO ₂ nanoparticles in an rf plasma by ir absorption (<i>9 pages</i>)	045208
Harald Krüger, Elena Thiessen, Franz Xaver Bronold, Holger Fehske, and André Melzer	
Resonant sheath heating in weakly magnetized capacitively coupled plasmas due to electron-cyclotron motion (<i>6 pages</i>)	045209
Quan-Zhi Zhang, Jing-Yu Sun, Wen-Qi Lu, Julian Schulze, Yu-Qing Guo, and You-Nian Wang	
Analysis of laser-proton acceleration experiments for development of empirical scaling laws (<i>9 pages</i>)	045210
M. Zimmer, S. Scheuren, T. Ebert, G. Schaumann, C. Rödel, M. Roth, B. Schmitz, V. Bagnoud, and J. Hornung	
Spectral duality in graphs and microwave networks (<i>7 pages</i>)	045211
Tobias Hofmann, Junjie Lu, Ulrich Kuhl, and Hans-Jürgen Stöckmann	
Heartbeat instability as auto-oscillation between dim and bright void regimes (<i>9 pages</i>)	045212
A. Pikalev, M. Pustynnik, C. Räth, and H. M. Thomas	
Exploring the Atwood-number dependence of the highly nonlinear Rayleigh-Taylor instability regime in high-energy-density conditions (<i>10 pages</i>)	045213
G. Rigon, B. Albertazzi, P. Mabey, Th. Michel, E. Falize, V. Bouffetier, L. Ceurvorst, L. Masse, M. Koenig, and A. Casner	

(Continued)

Computational Physics

Simulations of surface acoustic wave interactions on a sessile droplet using a three-dimensional multiphase lattice Boltzmann model (20 pages)	045301
Stephen B. Burnside, Kamil Pasieczynski, Amin Zarareh, Mubbashar Mehmood, Yong Qing Fu, and Baixin Chen	
Quantum transfer through small networks coupled to phonons: Effects of topology versus phonons (11 pages) . . .	045302
B. Hou and R. V. Krems	
Evolutional deep neural network (14 pages)	045303
Yifan Du and Tamer A. Zaki	
Equilibrium properties of warm dense deuterium calculated by the wave packet molecular dynamics and density functional theory method (14 pages)	045304
Yaroslav Lavrinenko, Pavel R. Levashov, Dmitry V. Minakov, Igor V. Morozov, and Ilya A. Valuev	
Coupled lattice Boltzmann–large eddy simulation model for three-dimensional multiphase flows at large density ratio and high Reynolds number (17 pages)	045305
Xiang An, Bo Dong, Yong Wang, Yajin Zhang, Xun Zhou, and Weizhong Li	
Understanding degeneracy of two-point correlation functions via Debye random media (19 pages)	045306
Murray Skolnick and Salvatore Torquato	
Symmetry-aware reservoir computing (9 pages)	045307
Wendson A. S. Barbosa, Aaron Griffith, Graham E. Rowlands, Luke C. G. Govia, Guilhem J. Ribeill, Minh-Hai Nguyen, Thomas A. Ohki, and Daniel J. Gauthier	
Three-dimensional reconstruction of porous media using super-dimension-based adjacent block-matching algorithm (18 pages)	045308
Zhixin Xia, Qizhi Teng, Xiaohong Wu, Juan Li, and Pengcheng Yan	
 Lattice Boltzmann method with moment-based boundary conditions for rarefied flow in the slip regime (8 pages)	045309
S. Mohammed and T. Reis	
Rejection-free cluster Wang-Landau algorithm for hard-core lattice gases (17 pages)	045310
Asweel Ahmed A. Jaleel, Jetin E. Thomas, Dipanjan Mandal, Sumedha, and R. Rajesh	
 Damage separation model: A replaceable particle method based on strain energy field (15 pages)	045311
Yupeng Jiang, Peter Mora, Hans J. Herrmann, and Fernando Alonso-Marroquín	
Efficient high-order radial basis-function-based differential quadrature–finite volume method for incompressible flows on unstructured grids (16 pages)	045312
Y. Y. Liu, L. M. Yang, C. Shu, and H. W. Zhang	
Overcoming the complexity barrier of the dynamic message-passing method in networks with fat-tailed degree distributions (7 pages)	045313
Giuseppe Torrisi, Alessia Annibale, and Reimer Kühn	

ERRATA

Retraction: Phase transitions, percolation, fracture of materials, and deep learning [Phys. Rev. E 102 , 011001(R) (2020)] (1 page)	049901(E)
Serveh Kamrava, Pejman Tahmasebi, Muhammad Sahimi, and Sepehr Arbabi	