

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 103, NUMBER 5
PARTS A AND B

CONTENTS

MAY 2021

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages L050101–052309, and Part B pages 052401–053312.

PART A

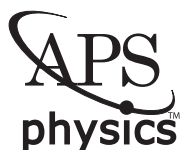
LETTERS

Statistical Physics

- Hierarchical Onsager symmetries in adiabatically driven linear irreversible heat engines (*6 pages*) L050101
Yuki Izumida
- Heat conduction in a three-dimensional momentum-conserving fluid (*5 pages*) L050102
Rongxiang Luo, Lisheng Huang, and Stefano Lepri
- Kinetic uncertainty relation on first-passage time for accumulated current (*5 pages*) L050103
Ken Hiura and Shin-ichi Sasa
- Failure of Ornstein-Zernike asymptotics for the pair correlation function at high temperature
and small density (*5 pages*) L050104
Yacine Aoun, Dmitry Ioffe, Sébastien Ott, and Yvan Velenik
- Optimality of nonconservative driving for finite-time processes with discrete states (*5 pages*) L050105
Benedikt Remlein and Udo Seifert

Nonlinear Dynamics and Chaos

- Multiplicative noise can induce a velocity change of propagating dissipative solitons (*5 pages*) L050201
Orazio Descalzi, Carlos Cartes, and Helmut R. Brand
- Scarring in classical chaotic dynamics with noise (*6 pages*) L050202
Domenico Lippolis, Akira Shudo, Kensuke Yoshida, and Hajime Yoshino
- Generalization of Wigner time delay to subunitary scattering systems (*7 pages*) L050203
Lei Chen, Steven M. Anlage, and Yan V. Fyodorov
- Chimera complexity (*6 pages*) L050204
Serhiy Brezetsky, Patrycja Jaros, Roman Levchenko, Tomasz Kapitaniak, and Yuri Maistrenko



Copyright 2021 by American Physical Society



2470-0045(202105)103:5:B;1-4

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 103, NUMBER 5

MAY 2021

Biological Physics

- Geometrically regulating evolutionary dynamics in biofilms (*6 pages*) L050401
 Youness Azimzade and Abbas Ali Saberi

Colloids, Complex Fluids, and Active Matter

- Jump-precursor state emerges below the crossover temperature in supercooled *o*-terphenyl (*7 pages*) L050601
 Harveen Kaur and Mark A. Berg
- Effect of attractions on the hard-sphere dynamic universality class (*5 pages*) L050602
 Leticia López Flores, José Manuel Olais-Govea, Martín Chávez-Páez, and Magdaleno Medina-Noyola

Solid Mechanics

- Propagation of coherent shear waves in scattering elastic media (*5 pages*) L051001
 Alverède Simon, Régis Wunenburger, and Tony Valier-Brasier
- Light-induced stress and work in photomechanical materials (*5 pages*) L051002
 Anastasiia Svanidze, Tianyi Guo, Xiaoyu Zheng, and Peter Palffy-Muhoray

Plasma Physics

- Kinetic instability in inductively oscillatory plasma equilibrium (*5 pages*) L051201
 F. Cruz, T. Grismayer, and L. O. Silva
- Importance of gyrokinetic exact Fokker-Planck collisions in fusion plasma turbulence (*6 pages*) L051202
 Qingjiang Pan, Darin R. Ernst, and David R. Hatch
- Bound electron screening effect on ion-ion potential of warm and hot dense matter (*6 pages*) L051203
 Meng Lv, Ke Li, Chuan Wang, Ronghao Hu, Yang Zhao, and Jiayu Dai

ARTICLES

Statistical Physics

- Quasi-Markovian property of strong wave turbulence (*12 pages*) 052101
 Wonjung Lee
- Entropy scaling close to criticality: From simple to metallic systems (*9 pages*) 052102
 Caroline Desgranges and Jerome Delhommelle
- Statistics of percolating clusters in a model of photosynthetic bacteria (*6 pages*) 052103
 Jean-Christian Anglès d'Auriac and Ferenc Igloi
- Stochastic thermodynamics of nanoscale friction (*9 pages*) 052104
 P. C. Torche, P. Nicolini, T. Polcar, and O. Hovorka
- How attractive and repulsive interactions affect structure ordering and dynamics of glass-forming liquids (*8 pages*) 052105
 Ankit Singh and Yashwant Singh
- Self-organized criticality in cumulus clouds (*12 pages*) 052106
 M. N. Najafi, J. Cheraghalizadeh, and H. J. Herrmann

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 103, NUMBER 5

MAY 2021

Percolation thresholds on a triangular lattice for neighborhoods containing sites up to the fifth coordination zone (7 pages)	052107
Krzysztof Malarz	
Signal estimation and filtering from quantized observations via adaptive stochastic resonance (7 pages)	052108
Fei Li, Fabing Duan, François Chapeau-Blondeau, and Derek Abbott	
Optimal escape-and-feeding dynamics of random walkers: Rethinking the convenience of ballistic strategies (8 pages)	052109
Daniel Campos, Javier Cristín, and Vicenç Méndez	
Geometrical frustration and cluster spin glass with random graphs (11 pages)	052110
Alexandre Silveira, R. Erichsen, Jr., and S. G. Magalhães	
Fluctuation theorems from Bayesian retrodiction (8 pages)	052111
Francesco Buscemi and Valerio Scarani	
Kapitza thermal resistance in linear and nonlinear chain models: Isotopic defect (15 pages)	052113
O. V. Gendelman and Jithu Paul	
Mean-field theories for depinning and their experimental signatures (14 pages)	052114
Cathelijne ter Burg and Kay Jörg Wiese	
Lévy on-off intermittency (16 pages)	052115
Adrian van Kan, Alexandros Alexakis, and Marc-Etienne Brachet	
Entropy production and Onsager reciprocal relations describing the relaxation to equilibrium in stochastic thermodynamics (13 pages)	052116
Stefano Giordano	
From soft- to hard-sphere fluids: Crossover evidenced by high-frequency elastic moduli (6 pages)	052117
Sergey Khrapak, Nikita P. Kryuchkov, Lukiya A. Mistryukova, and Stanislav O. Yurchenko	
Spatial Monte Carlo integration with annealed importance sampling (10 pages)	052118
Muneki Yasuda and Kaiji Sekimoto	
Extremal statistics for stochastic resetting systems (20 pages)	052119
Prashant Singh and Arnab Pal	
Particle creation and annihilation in a dynamically disordered totally asymmetric simple exclusion process (9 pages)	052120
Shaweta Garg and Isha Dhiman	
Optimal work extraction and mutual information in a generalized Szilárd engine (8 pages)	052121
Juyong Song, Susanne Still, Rafael Díaz Hernández Rojas, Isaac Pérez Castillo, and Matteo Marsili	
Zero-temperature coarsening in the two-dimensional long-range Ising model (11 pages)	052122
Henrik Christiansen, Suman Majumder, and Wolfhard Janke	
Stochastic resetting by a random amplitude (22 pages)	052123
Marcus Dahlenburg, Aleksei V. Chechkin, Rina Schumer, and Ralf Metzler	
Survival of quantum features in the dynamics of a dissipative quantum system and their effect on the state purity (10 pages)	052124
Davinder Singh	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 103, NUMBER 5

MAY 2021

Maximum efficiency of absorption refrigerators at arbitrary cooling power (<i>11 pages</i>)	052125
Zhuolin Ye and Viktor Holubec	
Structural characterization of many-particle systems on approach to hyperuniform states (<i>17 pages</i>)	052126
Salvatore Torquato	
Topological persistence machine of phase transitions (<i>12 pages</i>)	052127
Quoc Hoan Tran, Mark Chen, and Yoshihiko Hasegawa	
Coupled physical and magnetodynamic rotational diffusion of a single-domain ferromagnetic nanoparticle suspended in a liquid (<i>11 pages</i>)	052128
S. V. Titov, W. T. Coffey, Yu. P. Kalmykov, M. Zarifakis, and A. S. Titov	
First passage under restart for discrete space and time: Application to one-dimensional confined lattice random walks (<i>14 pages</i>)	052129
Ofek Lauber Bonomo and Arnab Pal	
Harmonic chains and the thermal diode effect (<i>11 pages</i>)	052130
Na'im Kalantar, Bijay Kumar Agarwalla, and Dvira Segal	
Leaking elastic capacitor as model for active matter (<i>14 pages</i>)	052131
Robert Alicki, David Gelbwaser-Klimovsky, and Alejandro Jenkins	
Long-ranged correlations in large deviations of local clustering (<i>15 pages</i>)	052132
Jakub Dolezal and Robert L. Jack	
Finite-size localization scenarios in condensation transitions (<i>7 pages</i>)	052133
Gabriele Gotti, Stefano Iubini, and Paolo Politi	
Optimization of an active heat engine (<i>14 pages</i>)	052134
Giulia Gronchi and Andrea Puglisi	
Ballistic thermal rectification in asymmetric homojunctions (<i>6 pages</i>)	052135
Yuanchen Wu, Yu Yang, Longkai Lu, Tingting Wang, Lei Xu, Zhizhou Yu, and Lifa Zhang	
☞ Chaos in the Bose-glass phase of a one-dimensional disordered Bose fluid (<i>11 pages</i>)	052136
Romain Daviet and Nicolas Dupuis	
Numerical estimates of square lattice star vertex exponents (<i>6 pages</i>)	052137
S. Campbell and E. J. Janse van Rensburg	
Joint statistics of work and entropy production along quantum trajectories (<i>17 pages</i>)	052138
Harry J. D. Miller, M. Hamed Mohammady, Martí Perarnau-Llobet, and Giacomo Guarneri	
Spin dynamics under the influence of elliptically rotating fields: Extracting the field topology from time-averaged quantities (<i>10 pages</i>)	052139
Jesús Casado-Pascual, Lucas Lamata, and Andrés A. Reynoso	
Supervised and unsupervised learning of directed percolation (<i>13 pages</i>)	052140
Jianmin Shen, Wei Li, Shengfeng Deng, and Tao Zhang	
Heat current flows across an interface in two-dimensional lattices (<i>8 pages</i>)	052141
Yanjiang Guo (郭彦江) and Lei Wang (王雷)	

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 103, NUMBER 5

MAY 2021

Quantum aging and dynamical universality in the long-range $O(N \rightarrow \infty)$ model (15 pages)	052142
Jad C. Halimeh and Mohammad F. Maghrebi	
Giant rectification in segmented, strongly interacting spin chains despite the presence of perturbations (8 pages)	052143
Kang Hao Lee, Vinitha Balachandran, and Dario Poletti	
Nonlinear Dynamics and Chaos	
Interplay between coherent and incoherent decay processes in chaotic systems: The role of quantum interference (9 pages)	052201
Camilo Moreno and Juan-Diego Urbina	
Discrete breathers in a triangular β -Fermi-Pasta-Ulam-Tsingou lattice (14 pages)	052202
Rita I. Babicheva, Alexander S. Semenov, Elvira G. Soboleva, Aleksey A. Kudreyko, Kun Zhou, and Sergey V. Dmitriev	
Data-driven phase-isostable reduction for optimal nonfeedback stabilization of cardiac alternans (15 pages)	052203
Tuhin Subhra Das and Dan Wilson	
Missing-level statistics in a dissipative microwave resonator with partially violated time-reversal invariance (8 pages)	052204
Małgorzata Białous, Barbara Dietz, and Leszek Sirko	
Nonlinear scattering by non-Hermitian multilayers with saturation effects (9 pages)	052205
O. V. Shramkova, K. G. Makris, D. N. Christodoulides, and G. P. Tsironis	
Modulation instability in helicoidal spin-orbit coupled open Bose-Einstein condensates (15 pages)	052206
Phelo Otladisa, Conrad Bertrand Tabi, and Timoléon Crépin Kofané	
Dissipative switching waves and solitons in the systems with spontaneously broken symmetry (11 pages)	052207
D. Dolina and A. Yulin	
Dynamics in two interacting subpopulations of nonidentical phase oscillators (9 pages)	052208
Shuangjian Guo, Mingxue Yang, Wenchen Han, and Junzhong Yang	
Universal S -matrix correlations for complex scattering of wave packets in noninteracting many-body systems: Theory, simulation, and experiment (9 pages)	052209
Andreas Berezuk, Barbara Dietz, Jiongning Che, Jack Kuipers, Juan-Diego Urbina, and Klaus Richter	
Anderson localization induced by interaction in linearly coupled binary Bose-Einstein condensates (7 pages)	052210
Mateus C. P. dos Santos and Wesley B. Cardoso	
Hubs, diversity, and synchronization in FitzHugh-Nagumo oscillator networks: Resonance effects and biophysical implications (8 pages)	052211
Stefano Scialla, Alessandro Loppini, Marco Patriarca, and Els Heinsalu	
Nonlinear dynamics and quantum chaos of a family of kicked p -spin models (21 pages)	052212
Manuel H. Muñoz-Arias, Pablo M. Poggi, and Ivan H. Deutsch	
Ergodic and nonergodic many-body dynamics in strongly nonlinear lattices (16 pages)	052213
Dominik Hahn, Juan-Diego Urbina, Klaus Richter, Rémy Dubertrand, and S. L. Sondhi	
Quantum localization measures in phase space (13 pages)	052214
D. Villaseñor, S. Pilatowsky-Cameo, M. A. Bastarrachea-Magnani, S. Lerma-Hernández, and J. G. Hirsch	

(Continued)

Self-organized spiral patterns at the edge of an order-disorder nonequilibrium phase transition (6 pages)	052215
Italo'Ivo Lima Dias Pinto, Daniel Escaff, and Alexandre Rosas	
Antipredator behavior in the rock-paper-scissors model (6 pages)	052216
J. Menezes	
External-field-induced dynamics of a charged particle on a closed helix (9 pages)	052217
Ansgar Siemens and Peter Schmelcher	
Self-consistent model of the plasma staircase and nonlinear Schrödinger equation with subquadratic power nonlinearity (22 pages)	052218
Alexander V. Milovanov, Jens Juul Rasmussen, and Guilhem Dif-Pradalier	
Networks and Complex Systems	
Mean-field solution for critical behavior of signed networks in competitive balance theory (7 pages)	052301
R. Masoumi, F. Oloomi, A. Kargaran, A. Hosseiny, and G. R. Jafari	
Heider and coevolutionary balance: From discrete to continuous phase transition (6 pages)	052302
A. Kargaran and G. R. Jafari	
Impact of presymptomatic transmission on epidemic spreading in contact networks: A dynamic message-passing analysis (24 pages)	052303
Bo Li and David Saad	
Building surrogate temporal network data from observed backbones (11 pages)	052304
Charley Presigny, Petter Holme, and Alain Barrat	
Effects of degree distributions in random networks of type-I neurons (11 pages)	052305
Carlo R. Laing	
Consistency landscape of network communities (12 pages)	052306
Daekyung Lee (이대경), Sang Hoon Lee (이상훈), Beom Jun Kim (김범준), and Heetae Kim (김희태)	
Dynamic hidden-variable network models (24 pages)	052307
Harrison Hartle, Fragkiskos Papadopoulos, and Dmitri Krioukov	
Adjustable reach in a network centrality based on current flows (22 pages)	052308
Aleks J. Gurfinkel and Per Arne Rikvold	
Persistent individual bias in a voter model with quenched disorder (13 pages)	052309
Joseph W. Baron	

PART B**Biological Physics**

Characterizing the voltage fluctuations driven by a cluster of ligand-gated channels (10 pages)	052401
Jia-Zeng Wang and Yan-Hua Fan	
Learning heterogeneous reaction rates from stochastic simulations (10 pages)	052402
Ariana Torres-Knoop and Ivan Kryven	
Impact of colonization history on the composition of ecological systems (8 pages)	052403
Nannan Zhao, Serguei Saavedra, and Yang-Yu Liu	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 103, NUMBER 5

MAY 2021

Evolutionary advantage of a dissociative search mechanism in DNA mismatch repair (<i>19 pages</i>)	052404
Kyle Crocker, James London, Andrés Medina, Richard Fishel, and Ralf Bundschuh	
Reaction coupling in ADH1A alcohol dehydrogenase enzyme by exciplex formation with adenosine diphosphate moderated by low-energy electronic excited states (<i>11 pages</i>)	052405
Igor Khmelinskii and Vladimir I. Makarov	
Analytic determination of lung microgeometry with gas diffusion magnetic resonance (<i>7 pages</i>)	052406
Niels Buhl	
Polymer-induced microcolony compaction in early biofilms: A computer simulation study (<i>10 pages</i>)	052407
Francisco Javier Lobo-Cabrera, Alessandro Patti, Fernando Govantes, and Alejandro Cuetos	
 Mechanisms underlying vaccination protocols that may optimally elicit broadly neutralizing antibodies against highly mutable pathogens (<i>17 pages</i>)	052408
Raman S. Ganti and Arup K. Chakraborty	
Dynamics of genetic code evolution: The emergence of universality (<i>17 pages</i>)	052409
John-Antonio Argyriadis, Yang-Hui He, Vishnu Jejjala, and Djordje Minic	
Effectiveness of glass beads for plating cell cultures (<i>7 pages</i>)	052410
Alidivinas Prusokas, Michelle Hawkins, Conrad A. Nieduszynski, and Renata Retkute	
Exploring dissipative sources of non-Markovian biochemical reaction systems (<i>17 pages</i>)	052411
Xiyang Yang, Yiren Chen, Tianshou Zhou, and Jiajun Zhang	
Elasticity of a DNA chain dotted with bubbles under force (<i>12 pages</i>)	052412
Debjyoti Majumdar	
Survival probability and size of lineages in antibody affinity maturation (<i>20 pages</i>)	052413
Marco Molari, Rémi Monasson, and Simona Cocco	
Remote firing propagation in the neural network of <i>C. elegans</i> (<i>11 pages</i>)	052414
Qiwei Shen and Zonghua Liu	
Polymers	
Chain stiffness boosts active nanoparticle transport in polymer networks (<i>8 pages</i>)	052501
Xue-Zheng Cao, Holger Merlitz, Chen-Xu Wu, and M. Gregory Forest	
Colloids, Complex Fluids, and Active Matter	
Enhanced diffusion of a tracer particle in a lattice model of a crowded active system (<i>11 pages</i>)	052601
Leila Abbaspour and Stefan Klumpp	
Active noise-driven particles under space-dependent friction in one dimension (<i>10 pages</i>)	052602
D. Breoni, H. Löwen, and R. Blossey	
Stationary distributions of propelled particles as a system with quenched disorder (<i>8 pages</i>)	052603
Derek Frydel	
Yielding in an amorphous solid subject to constant stress at finite temperatures (<i>7 pages</i>)	052604
Haiyan Xu, Juan Carlos Andresen, and Ido Regev	

(Continued)

 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).

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 103, NUMBER 5	MAY 2021
Influence of interaction softness on phase separation of active particles (<i>8 pages</i>)		052605
Monika Sanoria, Raghunath Chelakkot, and Amitabha Nandi		
Emergence of linear isotropic elasticity in amorphous and polycrystalline materials (<i>7 pages</i>)		052606
Shivam Mahajan, Joyjit Chattoraj, and Massimo Pica Ciamarra		
Barrier-controlled nonequilibrium criticality in reactive particle systems (<i>10 pages</i>)		052607
Qun-Li Lei, Hao Hu, and Ran Ni		
Diffusion of active particles with angular velocity reversal (<i>6 pages</i>)		052608
Kristian Stølevik Olsen		
Aging of cornstarch particles suspended in aqueous solvents at room temperature (<i>7 pages</i>)		052609
Christophe Kusina, Wilbert J. Smit, Jean-Baptiste Boitte, Odile Aubrun, and Annie Colin		
Liquid Crystals		
Molecular-statistical theory of elasticity in nematic liquid crystals composed of polar and nonpolar molecules (<i>19 pages</i>)		052701
M. A. Osipov, A. A. Antonov, and M. V. Gorkunov		
Tailored nematic and magnetization profiles on two-dimensional polygons (<i>15 pages</i>)		052702
Yucen Han, Joseph Harris, Joshua Walton, and Apala Majumdar		
Quantum-dots-dispersed bent-core nematic liquid crystal and cybotactic clusters: Experimental and theoretical insights (<i>13 pages</i>)		052703
Sourav Patranabish, Yiwei Wang, Aloka Sinha, and Apala Majumdar		
Shear-enhanced elasticity in the cubic blue phase I (<i>11 pages</i>)		052704
Shuji Fujii and Oliver Henrich		
Films and Interfaces		
Spinodal stratification in micellar films between oil and silica (<i>8 pages</i>)		052801
Gaëlle Rondepierre, François Lequeux, Emilie Verneuil, Nicolas Passade-Boupat, and Laurence Talini		
Minimal model for the onset of slip pulses in frictional rupture (<i>15 pages</i>)		052802
Kjetil Thøgersen, Einat Aharonov, Fabian Barras, and François Renard		
Interfacial segregation of interacting vacancies and their role on the wetting critical properties of the Blume-Emery-Griffiths model (<i>11 pages</i>)		052803
L. M. Luque, S. A. Grigera, and E. V. Albano		
Granular Materials		
Frictional hyperspheres in hyperspace (<i>9 pages</i>)		052901
François Guillard and Benjy Marks		
Clogging of granular materials in a horizontal hopper: Effect of outlet size, hopper angle, and driving velocity (<i>10 pages</i>)		052902
Quan-Chun Yu, Ning Zheng, and Qing-Fan Shi		
Start-up shear of spherocylinder packings: Effect of friction (<i>7 pages</i>)		052903
Claus Heussinger		

(Continued)

Solid Mechanics

Controlling crackling dynamics by triggering low-intensity avalanches (<i>6 pages</i>)	053001
Jonathan Barés and Daniel Bonamy	
Geometrically induced localization of flexural waves on thin warped physical membranes (<i>25 pages</i>)	053002
Jonathan Kernes and Alex J. Levine	
☞ Elastic multipole method for describing deformation of infinite two-dimensional solids with circular inclusions (<i>25 pages</i>)	053003
Siddhartha Sarkar, Matjaž Čebren, Miha Brojan, and Andrej Košmrlj	
☞ Method of image charges for describing deformation of bounded two-dimensional solids with circular inclusions (<i>34 pages</i>)	053004
Siddhartha Sarkar, Matjaž Čebren, Miha Brojan, and Andrej Košmrlj	
Impact dynamics of composite elastorigid projectiles onto solid surfaces (<i>11 pages</i>)	053005
Christophe D'Angelo, Laurence Viennot, Médéric Argentina, Franck Celestini, and Christophe Raufaste	

Fluid Dynamics

Four-dimensional imaging and free-energy analysis of sudden pore-filling events in wicking of yarns (<i>20 pages</i>)	053101
Robert Fischer, Christian M. Schlepütz, Dirk Hegemann, René M. Rossi, Dominique Derome, Dominique Derome, and Jan Carmeliet	
Intermittency of three-dimensional perturbations in a point-vortex model (<i>16 pages</i>)	053102
Adrian van Kan, Alexandros Alexakis, and Marc-Etienne Brachet	
Scale of plume clustering in large-Prandtl-number convection (<i>6 pages</i>)	053103
Sara Lenzi, Jost von Hardenberg, and Antonello Provenzale	
Influence of Knudsen and Mach numbers on Kelvin-Helmholtz instability (<i>7 pages</i>)	053104
Vishnu Mohan, A Sameen, Balaji Srinivasan, and Sharath S. Girimaji	
Buoyancy-driven convection of droplets on hot nonwetting surfaces (<i>10 pages</i>)	053105
E. Yim, A. Bouillant, and F. Gallaire	
Correlation in thermal fluctuations induced by phase-locked hydrodynamic modes (<i>10 pages</i>)	053106
Xiaohui Deng, Xiaoping Wang, and Ping Sheng	
Echo state network for two-dimensional turbulent moist Rayleigh-Bénard convection (<i>14 pages</i>)	053107
Florian Heyder and Jörg Schumacher	
Scalar mixing in a Kelvin-Helmholtz shear layer and implications for Reynolds-averaged Navier-Stokes modeling of mixing layers (<i>15 pages</i>)	053108
Brandon E. Morgan	
Growth mechanism of interfacial fluid-mixing width induced by successive nonlinear wave interactions (<i>23 pages</i>)	053109
Haifeng Li, Baolin Tian, Zhiwei He, and Yousheng Zhang	
Bohr-Sommerfeld-like quantization in the theory of walking droplets (<i>8 pages</i>)	053110
J. Montes, F. Revuelta, and F. Borondo	

(Continued)

Subcritical asymmetric Rayleigh breakup of a charged drop induced by finite amplitude perturbations in a quadrupole trap (<i>11 pages</i>)	053111
Mohit Singh, Neha Gawande, Y. S. Mayya, and Rochish Thaokar	
Discrete fracture network model analysis of the effects of fluid transport on the morphology of a cluster of activated fractures (<i>15 pages</i>)	053112
Mohammed G. Alhashim and Donald L. Koch	
Mesoscopic kinetic approach for studying nonequilibrium hydrodynamic and thermodynamic effects of shock wave, contact discontinuity, and rarefaction wave in the unsteady shock tube (<i>20 pages</i>)	053113
Ruofan Qiu, Tao Zhou, Yue Bao, Kang Zhou, Huanhuan Che, and Yancheng You	
Extended computation of the viscous Rayleigh-Taylor instability in a horizontally confined flow (<i>12 pages</i>)	053114
Jon Martinez-Carrascal, J. Calderon-Sanchez, L. M. González-Gutiérrez, and A. de Andrea González	
First law of thermodynamics on the boundary for flow through a carbon nanotube (<i>14 pages</i>)	053115
Kazi Ehsanul Karim and BoHung Kim	
Plasma Physics	
Coupled heat pulse propagation in two-fluid plasmas (<i>5 pages</i>)	053201
S. Jin, A. H. Reiman, and N. J. Fisch	
Energetic α -particle sources produced through proton-boron reactions by high-energy high-intensity laser beams (<i>11 pages</i>)	053202
J. Bonvalet, Ph. Nicolai, D. Raffestin, E. D'humieres, D. Batani, V. Tikhonchuk, V. Kantarelou, L. Giuffrida, M. Tosca, G. Korn, A. Picciotto, A. Morace, Y. Abe, Y. Arikawa, S. Fujioka, Y. Fukuda, Y. Kuramitsu, H. Habara, and D. Margarone	
Simulations and experiments of phase separation in binary dusty plasmas (<i>11 pages</i>)	053203
Stefan Schütt and André Melzer	
Momentum distribution function and short-range correlations of the warm dense electron gas: <i>Ab initio</i> quantum Monte Carlo results (<i>18 pages</i>)	053204
Kai Hunger, Tim Schoof, Tobias Dornheim, Michael Bonitz, and Alexey Filinov	
Azimuthal magnetic field distribution in gas-puff Z-pinch implosions with and without external magnetic stabilization (<i>8 pages</i>)	053205
N. Aybar, M. Dozies, D. B. Reisman, M. Cvejić, D. Mikitchuk, F. Conti, E. Kroupp, R. Doron, Y. Maron, and F. N. Beg	
Equation of state modeling with pseudoatom molecular dynamics (<i>17 pages</i>)	053206
A. A. Ovechkin, P. A. Loboda, A. L. Falkov, and P. A. Sapozhnikov	
Enhancements in laser-generated hot-electron production via focusing cone targets at short pulse and high contrast (<i>7 pages</i>)	053207
D. R. Rusby, P. M. King, A. Pak, N. Lemos, S. Kerr, G. Cochran, I. Pagano, A. Hannasch, H. Quevedo, M. Spinks, M. Donovan, A. Link, A. Kemp, S. C. Wilks, G. J. Williams, M. J.-E. Manuel, Z. Gavin, A. Haid, F. Albert, M. Aufderheide, H. Chen, C. W. Siders, A. Macphee, and A. Mackinnon	
Energy and momentum conservation upon reflection of a solitary pulse in a bounded magnetized plasma (<i>21 pages</i>)	053208
Renaud Gueroult	

(Continued)

Collisional redistribution of hydrogen line radiation in low- and moderate-density magnetized plasmas (<i>9 pages</i>)	053209
J. Rosato	
Sliding-wave acceleration of ions in high-density gas jet targets (<i>5 pages</i>)	053210
Zsolt Lécz, Ashutosh Sharma, Alexander Andreev, József Fülöp, and Christos Kamperidis	
Computational Physics	
Understanding population annealing Monte Carlo simulations (<i>24 pages</i>)	053301
Martin Weigel, Lev Barash, Lev Shchur, and Wolfhard Janke	
Algorithmic augmentation in the pseudopotential-based lattice Boltzmann method for simulating the pool boiling phenomenon with high-density ratio (<i>19 pages</i>)	053302
Aritra Mukherjee, Dipankar N. Basu, and Pranab K. Mondal	
Phase reduction technique on a target region (<i>9 pages</i>)	053303
Makoto Iima	
Gradient flows and proximal splitting methods: A unified view on accelerated and stochastic optimization (<i>19 pages</i>)	053304
Guilherme França, Daniel P. Robinson, and René Vidal	
Green's function method for dynamic contact calculations (<i>10 pages</i>)	053305
Joseph M. Monti, Lars Pastewka, and Mark O. Robbins	
Solving nonlinear integral equations for laser pulse retrieval with Newton's method (<i>15 pages</i>)	053306
Michael Jasiulek	
Consistent evaporation formulation for the phase-field lattice Boltzmann method (<i>11 pages</i>)	053307
Makoto Sugimoto, Yuta Sawada, Masayuki Kaneda, and Kazuhiko Suga	
Enhanced single-node lattice Boltzmann boundary condition for fluid flows (<i>26 pages</i>)	053308
Francesco Marson, Yann Thorimbert, Bastien Chopard, Irina Ginzburg, and Jonas Latt	
Interpolation for the lattice-Boltzmann method to simulate colloid transport in porous media (<i>7 pages</i>)	053309
Jianguo Jiang and Jichun Wu	
Quantitative phase field simulations of polycrystalline solidification using a vector order parameter (<i>13 pages</i>)	053310
Tatu Pinomaa, Nana Ofori-Opoku, Anssi Laukkanen, and Nikolas Provatas	
Simplified method for simulation of incompressible viscous flows inspired by the lattice Boltzmann method (<i>24 pages</i>)	053311
Jun-Jie Huang	
Reconstruction of nanoscale particles from single-shot wide-angle free-electron-laser diffraction patterns with physics-informed neural networks (<i>12 pages</i>)	053312
Thomas Stielow and Stefan Scheel	