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 107, NUMBER 5
PARTS A AND B

CONTENTS

MAY 2023

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages L052101–054222, and Part B pages 054301–056602.

PART A

LETTERS

Statistical Physics

Thermodynamic uncertainty relations for steady-state thermodynamics *(5 pages)* L052101
Takuya Kamijima, Sosuke Ito, Andreas Dechant, and Takahiro Sagawa

Ensemble dependence of information-theoretic contributions to the entropy production *(6 pages)* L052102
Krzysztof Ptaszyński and Massimiliano Esposito

Non-self-averaging of current in a totally asymmetric simple exclusion process with quenched disorder *(6 pages)* L052103
Issei Sakai and Takuma Akimoto

Information-to-work conversion in single-molecule experiments: From discrete to continuous feedback *(7 pages)* L052104
Regina K. Schmitt, Patrick P. Potts, Heiner Linke, Jonas Johansson, Peter Samuelsson, Marc Rico-Pasto, and Felix Ritort

Nonlinear Dynamics and Chaos

Saddle-node bifurcation of periodic orbit route to hidden attractors *(5 pages)* L052201
Suresh Kumarasamy, Malay Banerjee, Vaibhav Varshney, Manish Dev Shrimali, Nikolay V. Kuznetsov, and Awadhesh Prasad

Completely integrable replicator dynamics associated to competitive networks *(5 pages)* L052202
Joshua Paik and Christopher Griffin

Colloids, Complex Fluids, and Active Matter

Entry of microparticles into giant lipid vesicles by optical tweezers *(6 pages)* L052601
Florent Fessler, Vaibhav Sharma, Pierre Muller, and Antonio Stocco

Shape- and orientation-dependent diffusiophoresis of colloidal ellipsoids *(6 pages)* L052602
Viet Sang Doan, Dong-Ook Kim, Craig Snoeyink, Ying Sun, and Sangwoo Shin

Films and Interfaces

Scaling laws for two-dimensional dendritic crystal growth in a narrow channel *(6 pages)* L052801
Younggil Song, Damien Tourret, and Alain Karma

(Continued)

2470-0045(202305)107:5:B;1-Z

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).

PHYSICAL REVIEW E THIRD SERIES, VOLUME 107, NUMBER 5 MAY 2023

Granular Materials

Grain size distribution does not affect the residual shear strength of granular materials: An experimental proof *(6 pages)* L052901
Oscar Polanía, Miguel Cabrera, Mathieu Renouf, Emilien Azéma, and Nicolas Estrada

Solid Mechanics

Canceling the elastic Poynting effect with geometry *(4 pages)* L053001
M. Destrade, Y. Du, J. Blackwell, N. Colgan, and V. Balbi

Computational Physics

Semidefinite programming algorithm for the quantum mechanical bootstrap *(5 pages)* L053301
David Berenstein and George Hulsey

ARTICLES

Statistical Physics

Computer simulations and mode-coupling theory of glass-forming confined hard-sphere fluids *(14 pages)* 054101
Gerhard Jung and Thomas Franosch

Steady-state thermodynamics: Description equivalence and violation of reservoir independence *(15 pages)* 054102
Leonardo Ferreira Calazans and Ronald Dickman

Cluster percolation in the two-dimensional Ising spin glass *(15 pages)* 054103
L. Münster and M. Weigel

Group-equivariant autoencoder for identifying spontaneously broken symmetries *(26 pages)* 054104
Devanshu Agrawal, Adrian Del Maestro, Steven Johnston, and James Ostrowski

Nonequilibrium currents in stochastic field theories: A geometric insight *(9 pages)* 054105
J. O'Byrne

Opinion formation models with extreme switches and disorder: Critical behavior and dynamics *(6 pages)* 054106
Kathakali Biswas and Parongama Sen

Penetration of waves in global stochastic conducting media *(11 pages)* 054107
Marco Nizama and Manuel O. Cáceres

Spectral properties of size-invariant shape transformation *(16 pages)* 054108
Alhun Aydin

Leftward, rightward, and complete exit-time distributions of jump processes *(7 pages)* 054109
J. Klinger, R. Voituriez, and O. Bénichou

Measurement-based quantum Otto engine with a two-spin system coupled by anisotropic interaction: Enhanced efficiency at finite times *(11 pages)* 054110
Chayan Purkait and Asoka Biswas

Dynamical large deviations of linear diffusions *(18 pages)* 054111
Johan du Buisson and Hugo Touchette

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Order-disorder transition in the zero-temperature Ising model on random graphs *(5 pages)* 054112
Armin Pournaki, Eckehard Olbrich, Sven Banisch, and Konstantin Klemm

Fluctuations of heat in driven two-state systems: Application to a single-electron box with superconducting gap *(5 pages)* 054113
Tuomas Pyhäranta, Luca Peliti, and Jukka P. Pekola

Sum-of-squares bounds on correlation functions in a minimal model of turbulence *(8 pages)* 054114
Vladimir Parfenyev, Evgeny Mogilevskiy, and Gregory Falkovich

Full counting statistics and coherences: Fluctuation symmetry in heat transport with the unified quantum master equation *(14 pages)* 054115
Matthew Gerry and Dvira Segal

Tensor network construction for lattice gas models: Hard-core and triangular lattice models *(7 pages)* 054116
Sergey S. Akimenko

Evidence of *T*-type structures of hard square boards in capillary confinement *(13 pages)* 054117
Roohollah Aliabadi, Soudabe Nasirimoghadam, and Henricus Herman Wensink

Universal singularities of anomalous diffusion in the Richardson class *(6 pages)* 054118
Attilio L. Stella, Aleksei Chechkin, and Gianluca Teza

Transient chiral dynamics revealed by two-dimensional circular dichroism spectroscopy *(10 pages)* 054119
Zihui Liu, Ajay Jha, Xian-Ting Liang, and Hong-Guang Duan

Demixing of homogeneous binary lipid membranes induced by protein inclusions *(26 pages)* 054120
Piotr Nowakowski, Bernd Henning Stumpf, Ana-Sunčana Smith, and Anna Maciołek

Exact results for the residual entropy of ice hexagonal monolayer *(8 pages)* 054121
De-Zhang Li, Wei-Jie Huang, Yao Yao, and Xiao-Bao Yang

Quantum criticality of a $\mathbb{Z}_3$-symmetric spin chain with long-range interactions *(12 pages)* 054122
Xue-Jia Yu, Chengxiang Ding, and Limei Xu

Nontrivial effect of dephasing: Enhancement of rectification of spin current in graded XX chains *(9 pages)* 054123
Saulo H. S. Silva, Gabriel T. Landi, and Emmanuel Pereira

Inverse problem beyond two-body interaction: The cubic mean-field Ising model *(10 pages)* 054124
Pierluigi Contucci, Godwin Osabutey, and Cecilia Vernia

Quantum battery based on dipole-dipole interaction and external driving field *(10 pages)* 054125
Wuji Zhang, Shuyue Wang, Chunfeng Wu, and Gangcheng Wang

Derivation of field theory for the classical dimer model using bosonization *(18 pages)* 054126
Neil Wilkins and Stephen Powell

Simulating first-order phase transition with hierarchical autoregressive networks *(12 pages)* 054127
Piotr Białas, Paulina Czarnota, Piotr Korcyl, and Tomasz Stebel

Bivariate moments of the two-point correlation function for embedded Gaussian unitary ensemble with k-body interactions *(18 pages)* 054128
V. K. B. Kota

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Ornstein-Uhlenbeck process and generalizations: Particle dynamics under comb constraints and stochastic resetting *(18 pages)* 054129
Pece Trajanovski, Petar Jolakoski, Kiril Zelenkovski, Alexander Iomin, Ljupco Kocarev, and Trifce Sandev

Most probable paths for active Ornstein-Uhlenbeck particles *(8 pages)* 054130
Sandipan Dutta

Sample-to-sample fluctuations of transport coefficients in the totally asymmetric simple exclusion process with quenched disorder *(13 pages)* 054131
Issei Sakai and Takuma Akimoto

First and second laws of information processing by nonequilibrium dynamical states *(13 pages)* 054132
Mikhael T. Semaan and James P. Crutchfield

Pooling probability distributions and partial information decomposition *(9 pages)* 054133
S. J. van Enk

Detecting genuine tripartite entanglement via general symmetric informationally complete measurements *(7 pages)* 054134
Jia Hao, Hui Zhao, Shao-Ming Fei, Chen Xie, and Zhi-Xi Wang

Topological and nontopological mechanisms of loop formation in chromosomes: Effects on the contact probability *(8 pages)* 054135
Kirill Polovnikov and Bogdan Slavov

Depinning in the quenched Kardar-Parisi-Zhang class. I. Mappings, simulations, and algorithm *(20 pages)* 054136
Gauthier Mukerjee, Juan A. Bonachela, Miguel A. Muñoz, and Kay Jörg Wiese

Depinning in the quenched Kardar-Parisi-Zhang class. II. Field theory *(15 pages)* 054137
Gauthier Mukerjee and Kay Jörg Wiese

Self-diffusion of a relativistic Lennard-Jones gas via semirelativistic molecular dynamics *(6 pages)* 054138
David Miles Testa, Pontus Svensson, Jacob Jackson, Thomas Campbell, and Gianluca Gregori

Exact spatiotemporal dynamics of lattice random walks in hexagonal and honeycomb domains *(18 pages)* 054139
Daniel Marris, Seeralan Sarvaharman, and Luca Giuggioli

Bounded learning and planning in public goods games *(9 pages)* 054140
Prakhar Godara and Stephan Herminghaus

Screened Coulomb interaction in insulators with strong disorder *(9 pages)* 054141
V. A. Stephanovich, W. Olchawa, and E. V. Kirichenko

Nonlinear Dynamics and Chaos

Collapse and the interplay between essentiality and impact in socioecological systems *(13 pages)* 054201
R. C. Alamino and B. Nunes

Signatures of the interplay between chaos and local criticality on the dynamics of scrambling in many-body systems *(17 pages)* 054202
Felix Meier, Mathias Steinhuber, Juan Diego Urbina, Daniel Waltner, and Thomas Guhr

Discontinuous codimension-two bifurcation in a Vlasov equation *(16 pages)* 054203
Yoshiyuki Y. Yamaguchi and Julien Barré

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Chimera patterns with spatial random swings between periodic attractors in a network of FitzHugh-Nagumo oscillators *(9 pages)* 054204
S. G. Ngueuteu Mbouna, Tanmoy Banerjee, and Eckehard Schöll

Chaotic chimera attractors in a triangular network of identical oscillators *(12 pages)* 054205
Seungjae Lee and Katharina Krischer

Fundamental and second-order dark soliton solutions of two- and three-component Manakov equations in the defocusing regime *(28 pages)* 054206
Wen-Juan Che, Chong Liu, and Nail Akhmediev

Using coupling imperfection to control amplitude death *(5 pages)* 054207
Frank Thomas Ndjomatchoua, Byliole S. Djouda, Carlos Lawrence Gninzanlong, Thierry Landry Michel Mbong Djomo, Maxime Fabrice Kepnang Pebeu, and Clément Tchawoua

Breathers in lattices with alternating strain-hardening and strain-softening interactions *(18 pages)* 054208
M. M. Lee, E. G. Charalampidis, S. Xing, C. Chong, and P. G. Kevrekidis

Predicting chaotic dynamics from incomplete input via reservoir computing with $(D + 1)$-dimension input and output *(11 pages)* 054209
Lufa Shi, Youfang Yan, Hengtong Wang, Shengjun Wang, and Shi-Xian Qu

Experimental study of the elastic enhancement factor in a three-dimensional wave-chaotic microwave resonator exhibiting strongly overlapping resonances *(6 pages)* 054210
Małgorzata Białous, Barbara Dietz, and Leszek Sirko

Nonlinear dynamics and bifurcations of a planar undulating magnetic microswimmer *(9 pages)* 054211
Jithu Paul, Yizhar Or, and Oleg V. Gendelman

Modulation instability in nonlinear flexible mechanical metamaterials *(11 pages)* 054212
A. Demiquel, V. Achilleos, G. Theocharis, and V. Tournat

Statistics of phase space localization measures and quantum chaos in the kicked top model *(12 pages)* 054213
Qian Wang and Marko Robnik

Attractors and bifurcation diagrams in complex climate models *(8 pages)* 054214
Maura Brunetti and Charline Ragon

Period-doubling bifurcations and islets of stability in two-degree-of-freedom Hamiltonian systems *(10 pages)* . . . 054215
Alexandre R. Nieto, Jesús M. Seoane, and Miguel A. F. Sanjuán

Influence of the internal degrees of freedom of coronene molecules on the nonlinear dynamics of a columnar chain *(11 pages)* 054216
Alexander V. Savin and Sergey V. Dmitriev

Effects of nonlinearity and a new nonlinear resonance in two-path phonon transmittance in lattices with two-dimensional arrays of atomic defects *(19 pages)* 054217
I. P. Koroleva (Kikot) and Yu. A. Kosevich

Flow-driven control of pulse width in excitable media *(9 pages)* 054218
Adrian Paul Misselwitz, Suzanne Lafon, Jean-Daniel Julien, and Karen Alim

Effect of heterogeneous environmental conditions on labyrinthine vegetation patterns *(9 pages)* 054219
S. Echeverría-Alar, D. Pinto-Ramos, M. Tlidi, and M. G. Clerc

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Relative asymptotic oscillations of the out-of-time-ordered correlator as a quantum chaos indicator *(12 pages)* . . . 054220
Jakub Novotný and Pavel Stránský

Quantum pseudointegrable Hamiltonian impact system *(9 pages)* 054221
Omer Yaniv and Vered Rom-Kedar

Reconstruction of intermittent time series as a superposition of pulses *(23 pages)* 054222
Sajidah Ahmed, Odd Erik Garcia, and Audun Theodorsen

PART B

Networks and Complex Systems

Feasibility and stability in large Lotka Volterra systems with interaction structure *(7 pages)* 054301
Xiaoyuan Liu, George W. A. Constable, and Jonathan W. Pitchford

Deterministic and stochastic cooperation transitions in evolutionary games on networks *(14 pages)* 054302
Nagi Khalil, I. Leyva, J. A. Almendral, and I. Sendiña-Nadal

Belief propagation on networks with cliques and chordless cycles *(13 pages)* 054303
Peter Mann and Simon Dobson

Epidemic control in networks with cliques *(14 pages)* 054304
L. D. Valdez, L. Vassallo, and L. A. Braunstein

Hierarchical community structure in networks *(22 pages)* 054305
Michael T. Schaub, Jiaze Li, and Leto Peel

Influence maximization: Divide and conquer *(12 pages)* 054306
Siddharth Patwardhan, Filippo Radicchi, and Santo Fortunato

Analysis of a continuous-time adaptive voter model *(11 pages)* 054307
Emmanuel Kravitzch, Yezekael Hayel, Vineeth S. Varma, and Antoine O. Berthet

Global excitability and network structure in the human brain *(13 pages)* 054308
Youssef Kora, Salma Salhi, Jörn Davidsen, and Christoph Simon

Biological Physics

Wrapping dynamics and critical conditions for active nonspherical nanoparticle uptake *(8 pages)* 054401
Ke Xiao, Rui Ma, and Chen-Xu Wu

Characterizing the information transmission of inverse stochastic resonance and noise-induced activity amplification in neuronal systems *(12 pages)* 054402
Nataniel Martínez, Roberto R. Deza, and Fernando Montani

Kinetic relaxation of giant vesicles validates diffusional softening in a binary lipid mixture *(10 pages)* 054403
Kayla Sapp, Mina Aleksanyan, Kaitlyn Kerr, Rumiana Dimova, and Alexander Sodt

Onset model of mutually catalytic self-replicative systems formed by an assembly of polynucleotides *(11 pages)* 054404
Yasuji Sawada, Yasukazu Daigaku, and Kenji Toma

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Morphological instability of solid tumors in a nutrient-deficient environment *(11 pages)* 054405
Chien-Han Yen, Yi-Chieh Lai, and Kuo-An Wu

Effect of internal damping on locomotion in frictional environments *(10 pages)* 054406
Brian Van Stratum, Jonathan Clark, and Kourosh Shoele

Role of ephaptic coupling in discordant alternans domain sizes and action potential propagation in the heart *(13 pages)* 054407
Niels F. Otani, Eileen Figueroa, James Garrison, Michelle Hewson, Laura Muñoz, Flavio H. Fenton, Alain Karma, and Seth H. Weinberg

Models of vimentin organization under actin-driven transport *(15 pages)* 054408
Youngmin Park, Cécile Leduc, Sandrine Etienne-Manneville, and Stéphanie Portet

Polymers

Force-induced melting of DNA hairpin: Unfolding pathways and phase diagrams *(11 pages)* 054501
Sumitra Rudra, Keerti Chauhan, Amit Raj Singh, and Sanjay Kumar

Colloids, Complex Fluids, and Active Matter

Inertial active ratchet: Simulation versus theory *(9 pages)* 054601
M. Muhsin and M. Sahoo

Single active particle in a harmonic potential: Question about the existence of the Jarzynski relation *(7 pages)* . . . 054602
Grzegorz Szamel

Synchronization and alignment of model oscillators based on Quincke rotation *(11 pages)* 054603
Zhengyan Zhang and Kyle J. M. Bishop

Elastic response of colloidal smectic liquid crystals: Insights from microscopic theory *(16 pages)* 054604
H. H. Wensink and E. Grelet

Nuclear spin relaxation in aqueous paramagnetic ion solutions *(21 pages)* 054605
David A. Faux, Örs Istók, Arifah A. Rahaman, Peter J. McDonald, Eoin McKiernan, and Dermot F. Brougham

Stability of interlocked self-propelled dumbbell clusters *(10 pages)* 054606
Fabian Jan Schwarzendahl, Abraham Maulean-Amieva, C. Patrick Royall, and Hartmut Löwen

Inertial and geometrical effects of self-propelled elliptical Brownian particles *(13 pages)* 054607
Federica Montana, Carlo Camporeale, Amilcare Porporato, and Lamberto Rondoni

Controlling the direction of steady electric fields in liquid using nonantiperiodic potentials *(6 pages)* 054608
Aref Hashemi, Mehrdad Tahernia, William D. Ristenpart, and Gregory H. Miller

Liquid Crystals

Liquid-crystal composites of carbon nanotubes in a magnetic field: Bridging continuum theory and a molecular-statistical approach *(16 pages)* 054701
Danil A. Petrov

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Director anchoring on a simple edge dislocation at the surface of induced smectic-C_A films *(18 pages)* 054702
Yves Galerne

Films and Interfaces

Simple rose model of water in constant electric field *(14 pages)* 054801
Peter Ogrin and Tomaz Urbic

Granular Materials

Stochastic methods for slip prediction in a sheared granular system *(13 pages)* 054901
P. Bretz, L. Kondic, and M. Kramar

Theory of rigidity and numerical analysis of density of states of two-dimensional amorphous solids with dispersed frictional grains in the linear response regime *(22 pages)* 054902
Daisuke Ishima, Kuniyasu Saitoh, Michio Otsuki, and Hisao Hayakawa

Local and global measures of the shear moduli of jammed disk packings *(16 pages)* 054903
Shiyun Zhang, Weiwei Jin, Dong Wang, Ding Xu, Jerry Zhang, Mark D. Shattuck, and Corey S. O'Hern

Random sequential adsorption of aligned regular polygons and rounded squares: Transition in the kinetics of packing growth *(7 pages)* 054904
Michał Cieśla, Piotr Kubala, and Aref Abbasi Moud

Counterflow-induced clustering: Exact results *(18 pages)* 054905
Amit Kumar Chatterjee and Hisao Hayakawa

In-depth influence of the top surface fabrication of a bead packing *(8 pages)* 054906
Luc Oger, Renaud Delannay, and Yves Le Gonidec

Solid Mechanics

Impact of a pressurized membrane: Coefficient of restitution *(7 pages)* 055001
Baptiste Darbois Texier and Loïc Tadrist

Role of composition in fracture behavior of two-phase solids *(12 pages)* 055002
Subrat Senapati, Anuradha Banerjee, and R. Rajesh

Geometric rules for the annihilation dynamics of step lines on fracture fronts *(8 pages)* 055003
Will Steinhardt and Shmuel M. Rubinstein

Geometric theory of mechanical screening in two-dimensional solids *(13 pages)* 055004
Noemie S. Livne, Amit Schiller, and Michael Moshe

Anomalous elasticity and emergent dipole screening in three-dimensional amorphous solids *(9 pages)* 055005
Harish Charan, Michael Moshe, and Itamar Procaccia

Theory of transition from brittle to ductile fracture *(7 pages)* 055006
K. C. Le, H. Jeong, and T. M. Tran

Oblique impact of a buckling table-tennis ball on a rigid surface *(6 pages)* 055007
Théophile Rémond, Vincent Dolique, Renaud G. Rinaldi, and Jean-Christophe Géminard

(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).

PHYSICAL REVIEW E THIRD SERIES, VOLUME 107, NUMBER 5 MAY 2023

Fluid Dynamics

Theory of the force of friction acting on water chains flowing through carbon nanotubes *(12 pages)* 055101
J. B. Sokoloff and A. W. C. Lau

Delayed Hopf bifurcation and control of a ferrofluid interface via a time-dependent magnetic field *(15 pages)* 055102
Zongxin Yu and Ivan C. Christov

Critical conditions for development of a second pair of Dean vortices in curved microfluidic channels *(6 pages)* 055103
Minyoung Kim and Ali Borhan

Taylor's swimming sheet in a smectic-*A* liquid crystal *(8 pages)* 055104
Harsh Soni

Optimal policies for Bayesian olfactory search in turbulent flows *(19 pages)* 055105
R. A. Heinonen, L. Biferale, A. Celani, and M. Vergassola

Bolgiano-Obukhov spectrum and mixing efficiency in stably stratified turbulence *(12 pages)* 055106
Shadab Alam, Mahendra K. Verma, and Pranav Joshi

Flocking turbulence of microswimmers in confined domains *(11 pages)* 055107
L. Puggioni, G. Boffetta, and S. Musacchio

Transformation hydrodynamic metamaterials: Rigorous arguments on form invariance and structural design with spatial variance *(17 pages)* 055108
Gaole Dai and Jun Wang

Plasma Physics

Experimental study of the mechanism of prepulse current on Z-pinch plasma using Faraday rotation diagnosis *(7 pages)* 055201
Zhiyuan Jiang, Jian Wu, Ziwei Chen, Wei Wang, Zhenyu Wang, Yuanbo Lu, Yiming Zhao, Huantong Shi, and Xingwen Li

Magnetosonic waves propagation in a magnetorotating quantum plasma *(8 pages)* 055202
Yusra A. A. Hager, Mahmood A. H. Khaled, and Mohamed A. Shukri

Occam's razor on the mechanism of resistive-wall-mode-induced β limits in diverted tokamaks *(6 pages)* 055203
D. Brunetti, J. P. Graves, C. J. Ham, and S. Saarelma

Intensity of focused waves near turning points *(12 pages)* 055204
N. A. Lopez, E. Kur, and D. J. Strozzi

Helical correction to turbulent magnetic diffusivity *(4 pages)* 055205
Krzysztof A. Mizerski

Parameter study of decaying magnetohydrodynamic turbulence *(17 pages)* 055206
Andres Armua, Arjun Berera, and Jaime Calderón-Figueroa

Nanoplasma resonance condition in the middle-infrared spectral range *(12 pages)* 055207
V. Leshchenko, B. Smith, A. Camacho Garibay, P. Agostini, L. F. DiMauro, and L. Fang

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Ring structural transitions in strongly coupled dusty plasmas *(12 pages)* 055208
Vikram Dharodi and Evdokiya Kostadinova

Second-harmonic electron-cyclotron resonance heating: A possible impact from mode coupling near the resonance *(11 pages)* 055209
Maxim Tereshchenko

Spin Hall effect of radiofrequency waves in magnetized plasmas *(7 pages)* 055210
Yichen Fu, I. Y. Dodin, and Hong Qin

Observation of fast sound in two-dimensional dusty plasma liquids *(8 pages)* 055211
Zhenyu Ge, Dong Huang, Shaoyu Lu, Chen Liang, Matteo Baggioli, and Yan Feng

Fundamental solution of diffusion equation for Kappa gas: Diffusion length for suprathermal electrons in solar wind *(8 pages)* 055212
M. H. Benetti, F. E. M. Silveira, and I. L. Caldas

Charged particle beam transport in a flying focus pulse with orbital angular momentum *(15 pages)* 055213
Martin Formanek, John P. Palastro, Marija Vranic, Dillon Ramsey, and Antonino Di Piazza

Structure formation by electrostatic interactions in strongly coupled medium *(12 pages)* 055214
Mamta Yadav, Priya Deshwal, Srimanta Maity, and Amita Das

Computational Physics

Flexible class of exact Hubbard-Stratonovich transformations *(8 pages)* 055301
Seher Karakuzu, Benjamin Cohen-Stead, Cristian D. Batista, Steven Johnston, and Kipton Barros

Stable recursive auxiliary field quantum Monte Carlo algorithm in the canonical ensemble: Applications to thermometry and the Hubbard model *(14 pages)* 055302
Tong Shen, Hatem Barghathi, Jiangyong Yu, Adrian Del Maestro, and Brenda M. Rubenstein

Particle-based mesoscopic model for phase separation in a binary fluid mixture *(10 pages)* 055303
Surabhi Jaiswal, Soudamini Sahoo, and Snigdha Thakur

Method and computer library for calculation of the Boltzmann collision integrals on discrete momentum lattice *(12 pages)* 055304
I. O. Kuznetsov and P. F. Kartsev

Fourth-order multiple-relaxation-time lattice Boltzmann model and equivalent finite-difference scheme for one-dimensional convection-diffusion equations *(17 pages)* 055305
Ying Chen, Zhenhua Chai, and Baochang Shi

General mechanisms for stabilizing weakly compressible models *(19 pages)* 055306
Jinhua Lu and Nikolaus A. Adams

Midpoint projection algorithm for stochastic differential equations on manifolds *(18 pages)* 055307
Ria Rushin Joseph, Jesse van Rhijn, and Peter D. Drummond

Thermodynamics of fermions at any temperature based on parametrized partition function *(8 pages)* 055308
Yunuo Xiong and Hongwei Xiong

(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).

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 107, NUMBER 5** **MAY 2023**

Deep learning method of stochastic reconstruction of three-dimensional digital cores from a two-dimensional image *(20 pages)* 055309
Juan Li, Qizhi Teng, Ningning Zhang, Honggang Chen, and Xiaohai He

COMMENTS

Comment on "Harvesting information to control nonequilibrium states of active matter" *(6 pages)* 056601
Antoine Bérut

Reply to "Comment on 'Harvesting information to control nonequilibrium states of active matter' " *(2 pages)* 056602
Rémi Goerlich, Luís Barbosa Pires, Giovanni Manfredi, Paul-Antoine Hervieux, and Cyriaque Genet

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).