

PHYSICAL REVIEW E

For editorial and subscription correspondence,
please see inside front cover
(ISSN: 1539-3755)

PERIODICALS
Postmaster send address changes to:
APS Subscription Services
Suite 1N01
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 81, NUMBER 5

CONTENTS

MAY 2010

PART 2: NONLINEAR AND PLASMA PHYSICS, FLUID DYNAMICS, AND RELATED TOPICS

RAPID COMMUNICATIONS

Interdisciplinary physics

- Small-world behavior in time-varying graphs (*4 pages*) 055101(R)
J. Tang, S. Scellato, M. Musolesi, C. Mascolo, and V. Latora

Chaos and pattern formation

- Synchronization transition in the Kuramoto model with colored noise (*4 pages*) 055201(R)
Ralf Tönjes
- Steady motion of hairpin-shaped vortex filaments in excitable systems (*4 pages*) 055202(R)
Sumana Dutta and Oliver Steinbock
- Relativistic quantum level-spacing statistics in chaotic graphene billiards (*4 pages*) 055203(R)
Liang Huang, Ying-Cheng Lai, and Celso Grebogi
- Spinning propagation of diffusionally unstable planar fronts (*4 pages*) 055204(R)
Olga Nekhamkina and Moshe Sheintuch

Computational physics

- Metadynamics convergence law in a multidimensional system (*4 pages*) 055701(R)
Yanier Crespo, Fabrizio Marinelli, Fabio Pietrucci, and Alessandro Laio

ARTICLES

Interdisciplinary physics

- Power law signature of media exposure in human response waiting time distributions (*6 pages*) 056101
Riley Crane, Frank Schweitzer, and Didier Sornette
- Model for rumor spreading over networks (*11 pages*) 056102
Daniel Trpevski, Wallace K. S. Tang, and Ljupco Kocarev



Copyright 2010 by The American Physical Society

(Continued)



1539-3755(201005)81:5;2;1-W

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 81, NUMBER 5	MAY 2010
Evolutionary dynamics of public goods games with diverse contributions in finite populations (<i>8 pages</i>)		056103
Jing Wang, Bin Wu, Xiaojie Chen, and Long Wang		
Optimal network configuration for maximal coherence resonance in excitable systems (<i>7 pages</i>)		056104
Marko Gosak, Dean Korošak, and Marko Marhl		
Dynamical organization towards consensus in the Axelrod model on complex networks (<i>8 pages</i>)		056105
Beniamino Guerra, Julia Poncela, Jesús Gómez-Gardeñes, Vito Latora, and Yamir Moreno		
Lattice splitting under intermittent flows (<i>6 pages</i>)		056106
Markus Schläpfer and Konstantinos Trantopoulos		
Effect of social group dynamics on contagion (<i>12 pages</i>)		056107
Zhenyuan Zhao, J. P. Calderón, Chen Xu, Guannan Zhao, Dan Fenn, Didier Sornette, Riley Crane, Pak Ming Hui, and Neil F. Johnson		
Spreading of persistent infections in heterogeneous populations (<i>9 pages</i>)		056108
J. Sanz, L. M. Floría, and Y. Moreno		
Spectral properties of the Google matrix of the World Wide Web and other directed networks (<i>8 pages</i>)		056109
Bertrand Georgeot, Olivier Giraud, and Dima L. Shepelyansky		
Spatial model of autocatalytic reactions (<i>12 pages</i>)		056110
Pietro de Anna, Francesca Di Patti, Duccio Fanelli, Alan J. McKane, and Thierry Dauxois		
Chaos and pattern formation		
Dynamics of two semiconductor lasers coupled by a passive resonator (<i>13 pages</i>)		056201
H. Erzgräber, S. Wieczorek, and B. Krauskopf		
Utilizing the eikonal relationship in strategies for reentrant wave termination in excitable media (<i>5 pages</i>)		056202
Marcel Hörning, Akihiro Isomura, Zhiheng Jia, Emilia Entcheva, and Kenichi Yoshikawa		
Front dynamics and pinning-depinning phenomenon in spatially periodic media (<i>12 pages</i>)		056203
F. Haudin, R. G. Elías, R. G. Rojas, U. Bortolozzo, M. G. Clerc, and S. Residori		
Design of easily synchronizable oscillator networks using the Monte Carlo optimization method (<i>8 pages</i>)		056204
Tatsuo Yanagita and Alexander S. Mikhailov		
Exponential energy growth in a Fermi accelerator (<i>6 pages</i>)		056205
Kushal Shah, Dmitry Turaev, and Vered Rom-Kedar		
Directed percolation criticality due to stochastic switching between attractive and repulsive coupling in coupled circle maps (<i>9 pages</i>)		056206
Abhijeet R. Sonawane		
Reaction-diffusion systems with stochastic time delay in kinetics (<i>6 pages</i>)		056207
Shrabani Sen, Pushpita Ghosh, and Deb Shankar Ray		
Quasipotential approach to critical scaling in noise-induced chaos (<i>8 pages</i>)		056208
Tamás Tél and Ying-Cheng Lai		
Simple and complex square waves in an edge-emitting diode laser with polarization-rotated optical feedback (<i>7 pages</i>)		056209
Athanasios Gavrielides, David W. Sukow, Guinevere Burner, Taylor McLachlan, John Miller, and Jake Amonette		

CONTENTS - *Continued*

PHYSICAL REVIEW E	THIRD SERIES, VOLUME 81, NUMBER 5	MAY 2010
Collective behavior of inanimate boats (5 pages)		056210
Nobuhiko J. Suematsu, Satoshi Nakata, Akinori Awazu, and Hiraku Nishimori		
Transition from clustered state to spatiotemporal chaos in a small-world networks (8 pages)		056211
Ashwini V. Mahajan and Prashant M. Gade		
Evolving enhanced topologies for the synchronization of dynamical complex networks (13 pages)		056212
Thomas E. Gorochowski, Mario di Bernardo, and Claire S. Grierson		
Synchronous solutions and their stability in nonlocally coupled phase oscillators with propagation delays (6 pages)		056213
Gautam C. Sethia, Abhijit Sen, and Fatihcan M. Atay		
Spontaneous suppression of spiral turbulence based on feedback strategy (4 pages)		056214
Wenqiong Guo, Chun Qiao, Zhimeng Zhang, Qi Ouyang, and Hongli Wang		
Intense energy transfer and superharmonic resonance in a system of two coupled oscillators (12 pages)		056215
Agnessa Kovaleva, Leonid Manevitch, and Elina Manevitch		
Fluid dynamics		
Spatially inhomogeneous transition probabilities as memory effects for diffusion in statistically homogeneous random velocity fields (7 pages)		056301
Nicolae Suci		
Investigation of the Richtmyer-Meshkov instability with double perturbation interface in nonuniform flows (5 pages)		056302
Jing-song Bai, Jin-hong Liu, Tao Wang, Li-yong Zou, Ping Li, and Duo-wang Tan		
Canonical variables for steep planar water waves over nonuniform beds (5 pages)		056303
V. P. Ruban		
Resonance of flexible flapping wings at low Reynolds number (5 pages)		056304
Hassan Masoud and Alexander Alexeev		
Lubrication forces in air and accommodation coefficient measured by a thermal damping method using an atomic force microscope (11 pages)		056305
Christopher D. F. Honig, John E. Sader, Paul Mulvaney, and William A. Ducker		
Lennard-Jones fluid-fluid interfaces under shear (7 pages)		056306
Guillaume Galliero		
Extensional rheology of active suspensions (10 pages)		056307
David Saintillan		
Intermittency of surface-layer wind velocity series in the mesoscale range (12 pages)		056308
Jean-François Muzy, Rachel Baïle, and Philippe Poggi		
Stability of buoyant convection in a layer submitted to acoustic streaming (22 pages)		056309
W. Dridi, D. Henry, and H. Ben Hadid		
Macroscopic wettability based on an interfacial jump condition (8 pages)		056310
Yukihiro Yonemoto and Tomoaki Kunugi		
Significance testing for wavelet bicoherence and its application in analyzing nonlinearity in turbulent shear flows (11 pages)		056311
Zhongfu Ge		

(Continued)

CONTENTS - Continued

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 81, NUMBER 5

MAY 2010

Vibrations of a diamagnetically levitated water droplet (8 pages)	056312
R. J. A. Hill and L. Eaves	
Tangling clustering of inertial particles in stably stratified turbulence (14 pages)	056313
A. Eidelman, T. Elperin, N. Kleeorin, B. Melnik, and I. Rogachevskii	
Prediction of shock structure using the bimodal distribution function (11 pages)	056314
Maxim A. Solovchuk and Tony W. H. Sheu	
Simple model for turbulence intermittencies based on self-avoiding random vortex stretching (9 pages)	056315
Nicolas Rimbart	
Energy spectra and fluxes for Rayleigh-Bénard convection (12 pages)	056316
Pankaj Kumar Mishra and Mahendra K. Verma	
Scaling law for bubbles induced by different external sources: Theoretical and experimental study (11 pages)	056317
S. W. Gong, S. W. Ohl, E. Klaseboer, and B. C. Khoo	
Magnetic resonance imaging of two-component liquid-liquid flow in a circular capillary tube (6 pages)	056318
Jing Zhang and Bruce J. Balcom	
Dynamic modes of microcapsules in steady shear flow: Effects of bending and shear elasticities (10 pages)	056319
Hiroshi Noguchi	
Rheology of a dilute suspension of liquid-filled elastic capsules (11 pages)	056320
Prosenjit Bagchi and R. Murthy Kalluri	
Hydrodynamic instability in the transport of miscible reactive slices through porous media (12 pages)	056321
S. H. Hejazi and J. Azaiez	
Stability of rolls in rotating magnetoconvection in a layer with no-slip electrically insulating horizontal boundaries (20 pages)	056322
Olga Podvigina	
Plasma physics	
Sheath structure and formation of dust voids in cylindrical plasma discharges (5 pages)	056401
Zuquan Hu (胡祖权), Yinhua Chen (陈银华), Feng Huang (黄凤), Gui-fen Shi (时桂芬), Jugao Zheng (郑聚高), and M. Y. Yu (郁明阳)	
Fluid modeling of void closure in microgravity noble gas complex plasmas (12 pages)	056402
Victor Land, Lorin S. Matthews, Truell W. Hyde, and Diana Bolser	
Relativistic warm plasma theory of nonlinear laser-driven electron plasma waves (14 pages)	056403
C. B. Schroeder and E. Esarey	
Viscoelastic response of Yukawa liquids (9 pages)	056404
Z. Donkó, J. Goree, and P. Hartmann	
Relativistic mass and charge of photons in thermal plasmas through electromagnetic field quantization (7 pages)	056405
Felipe A. Asenjo, Víctor Muñoz, and J. Alejandro Valdivia	
Nonlinear electron oscillations in a viscous and resistive plasma (11 pages)	056406
A. A. Skorupski and E. Infeld	

(Continued)

Classical physics

Size effects in Kirchhoff flexible rods (5 pages)	056601
R. J. Zhang	
Complex group velocity and energy transport in absorbing media (12 pages)	056602
Vladimir Gerasik and Marek Stastna	
Stability and dynamics of two-soliton molecules (17 pages)	056603
U. Al Khawaja	
Soliton tunneling in the nonlinear Schrödinger equation with variable coefficients and an external harmonic potential (4 pages)	056604
Wei-Ping Zhong and Milivoj R. Belić	

Computational physics

Analytic continuation of quantum Monte Carlo data by stochastic analytical inference (8 pages)	056701
Sebastian Fuchs, Thomas Pruschke, and Mark Jarrell	
SHIFT: An implementation for lattice Boltzmann simulation in low-porosity porous media (12 pages)	056702
Jingsheng Ma, Kejian Wu, Zeyun Jiang, and Gary D. Couples	
Cluster solver for dynamical mean-field theory with linear scaling in inverse temperature (7 pages)	056703
E. Khatami, C. R. Lee, Z. J. Bai, R. T. Scalettar, and M. Jarrell	
Natural convection heat transfer simulation using energy conservative dissipative particle dynamics (14 pages)	056704
Eiyad Abu-Nada	
Optimizing the FEDVR-TDCC code for exploring the quantum dynamics of two-electron systems in intense laser pulses (7 pages)	056705
S. X. Hu	
Robust rotational-velocity-Verlet integration methods (8 pages)	056706
Dmitri Rozmanov and Peter G. Kusalik	
Improved axisymmetric lattice Boltzmann scheme (10 pages)	056707
Q. Li, Y. L. He, G. H. Tang, and W. Q. Tao	
Stability and dynamical properties of Rosenau-Hyman compactons using Padé approximants (13 pages)	056708
Bogdan Mihaila, Andres Cardenas, Fred Cooper, and Avadh Saxena	

BRIEF REPORTS

Interdisciplinary physics

Impact of critical mass on the evolution of cooperation in spatial public goods games (4 pages)	057101
Attila Szolnoki and Matjaž Perc	
Phase transitions to cooperation in the prisoner's dilemma (4 pages)	057102
Dirk Helbing and Sergi Lozano	
Voter model on a directed network: Role of bidirectional opinion exchanges (4 pages)	057103
Sung-Guk Han, Jaegon Um, and Beom Jun Kim	
Defector-accelerated cooperativeness and punishment in public goods games with mutations (4 pages)	057104
Dirk Helbing, Attila Szolnoki, Matjaž Perc, and György Szabó	

Plasma physics

- Soliton interaction in a complex plasma (*4 pages*) 057401
P. Harvey, C. Durniak, D. Samsonov, and G. Morfill

Classical physics

- Optical properties of a metal film perforated with coaxial elliptical hole arrays (*4 pages*) 057601
Shan Wu, Lin Zhou, Yu-min Wang, Guo-dong Wang, Qian-jin Wang, Cheng-ping Huang, and
Yong-yuan Zhu
- Long-wavelength electromagnetic propagation in magnetoplasmonic core-shell nanostructures (*4 pages*) 057602
M. Essone Mezeme, S. Lasquellec, and C. Brosseau

ERRATA

- Erratum: Exact effective transport dynamics in a one-dimensional random environment [Phys. Rev. E **72**, 031110 (2005)] (*3 pages*) 059901(E)
Marco Dentz and Brian Berkowitz
- Publisher's Note: Nematic biaxiality in a bent-core material [Phys. Rev. E **81**, 051706 (2010)] (*1 page*) 059902(E)
Hyung Guen Yoon, Shin-Woong Kang, Ronald Y. Dong, Alberto Marini, Kattera A. Suresh,
Mohan Srinivasarao, and Satyendra Kumar
- Publisher's Note: Abel solution to a bremsstrahlung inverse problem [Phys. Rev. E **81**, 036413 (2010)] (*1 page*) 059903(E)
Cliff A. Thomas