

Plasma physics

- Addendum to “Equation of state of classical Coulomb plasma mixtures” (*4 pages*) 047401
 A. Y. Potekhin, G. Chabrier, A. I. Chugunov, H. E. DeWitt, and F. J. Rogers
- Effects of energy loss on interaction dynamics of energetic electrons with plasmas (*4 pages*) 047402
 C. K. Li and R. D. Petrasso

Computational physics

- Multiresolution phase extension of a trypsin inhibitor structure from 5 Å to 2 Å based on diffraction amplitudes alone (*4 pages*) 047701
 Xiangnan Liu and Wu-Pei Su
- Generalization of the homogeneous nonequilibrium molecular dynamics method for calculating thermal conductivity to multibody potentials (*4 pages*) 047702
 Kranthi K. Mandadapu, Reese E. Jones, and Panayiotis Papadopoulos

COMMENTS

- Comment on “Fundamentals of pair diffusion in kinematic simulations of turbulence” (*3 pages*) 048301
 B. J. Devenish and D. J. Thomson

ERRATA

- Publisher’s Note: Topology, symmetry, phase transitions, and noncollinear spin structures [Phys. Rev. E **80**, 031123 (2009)] (*1 page*) 049901(E)
 F. A. N. Santos and M. D. Coutinho-Filho
- Publisher’s Note: From complex structures to complex processes: Percolation theory applied to the formation of a city [Phys. Rev. E **80**, 037102 (2009)] (*1 page*) 049902(E)
 Agnieszka Bitner, Robert Hołyst, and Marcin Fiałkowski
- Publisher’s Note: Exact solutions to three-dimensional generalized nonlinear Schrödinger equations with varying potential and nonlinearities [Phys. Rev. E **80**, 036607 (2009)] (*1 page*) 049903(E)
 Zhenya Yan and V. V. Konotop
- Publisher’s Note: Minimizing thermodynamic length to select intermediate states for free-energy calculations and replica-exchange simulations [Phys. Rev. E **80**, 046705 (2009)] (*1 page*) 049904(E)
 Daniel K. Shenfeld, Huafeng Xu, Michael P. Eastwood, Ron O. Dror, and David E. Shaw

Compensation of Gaussian curvature in developable cones is local (<i>5 pages</i>)	046610
Jin W. Wang and Thomas A. Witten	
Two-dimensional paradigm for symmetry breaking: The nonlinear Schrödinger equation with a four-well potential (<i>9 pages</i>)	046611
C. Wang, G. Theocharis, P. G. Kevrekidis, N. Whitaker, K. J. H. Law, D. J. Frantzeskakis, and B. A. Malomed	
Computational physics	
Spin dephasing in the dipole field around capillaries and cells: Numerical solution (<i>12 pages</i>)	046701
C. H. Ziener, S. Glutsch, P. M. Jakob, and W. R. Bauer	
Gas-kinetic schemes for direct numerical simulations of compressible homogeneous turbulence (<i>26 pages</i>) . . .	046702
Wei Liao, Yan Peng, and Li-Shi Luo	
Heterogeneous long-range correlated deformation of semiflexible random fiber networks (<i>11 pages</i>)	046703
H. Hatami-Marbini and R. C. Picu	
Monte Carlo determination of multiple extremal eigenpairs (<i>10 pages</i>)	046704
T. E. Booth and J. E. Gubernatis	
Minimizing thermodynamic length to select intermediate states for free-energy calculations and replica-exchange simulations (<i>4 pages</i>)	046705
Daniel K. Shenfeld, Huafeng Xu, Michael P. Eastwood, Ron O. Dror, and David E. Shaw	
Parquet approximation for the 4×4 Hubbard cluster (<i>6 pages</i>)	046706
S. X. Yang, H. Fotso, J. Liu, T. A. Maier, K. Tomko, E. F. D'Azevedo, R. T. Scalettar, T. Pruschke, and M. Jarrell	
Accurate simulation dynamics of microscopic filaments using “caterpillar” Oseen hydrodynamics (<i>8 pages</i>)	046707
A. G. Bailey, C. P. Lowe, I. Pagonabarraga, and M. Cosentino Lagomarsino	
Exact algorithm for sampling the two-dimensional Ising spin glass (<i>16 pages</i>)	046708
Creighton K. Thomas and A. Alan Middleton	

BRIEF REPORTS

Chaos and pattern formation

$1/f^\alpha$ noise and integrable systems (<i>4 pages</i>)	047201
J. C. Barba, F. Finkel, A. González-López, and M. A. Rodríguez	
Estimating parameters of a nonlinear dynamical system (<i>4 pages</i>)	047202
R. E. Amritkar	
Pulses of chaos synchronization in coupled map chains with delayed transmission (<i>4 pages</i>)	047203
Bernhard Schmitzer, Wolfgang Kinzel, and Ido Kanter	

Fluid dynamics

Cavitation bubble dynamics in microfluidic gaps of variable height (<i>4 pages</i>)	047301
Pedro A. Quinto-Su, Kang Y. Lim, and Claus-Dieter Ohl	

(Continued)

Gas flow driven by thermal creep in dusty plasma (7 pages)	046402
T. M. Flanagan and J. Goree	
Growth rate and the cutoff wavelength of the Darrieus-Landau instability in laser ablation (9 pages)	046403
Mikhail Modestov, Vitaly Bychkov, Damir Valiev, and Mattias Marklund	
Critical fluctuations and anomalous transport in soft Yukawa-Langevin systems (11 pages)	046404
S. Ratynskaia, G. Regnoli, K. Rypdal, B. Klumov, and G. Morfill	
Coulomb crystals in the magnetic field (11 pages)	046405
D. A. Baiko	
Solitary waves and double layers in a dusty electronegative plasma (6 pages)	046406
A. A. Mamun, P. K. Shukla, and B. Eliasson	
Transport coefficients in nonequilibrium gas-mixture flows with electronic excitation (9 pages)	046407
E. V. Kustova and L. A. Puzyreva	
Multiple scattering of slow ions in a partially degenerate electron fluid (6 pages)	046408
Romain Popoff, Gilles Maynard, and Claude Deutsch	
Quasitransient regimes of backward Raman amplification of intense x-ray pulses (8 pages)	046409
V. M. Malkin and N. J. Fisch	
Topological characterization of the transition from laminar regime to fully developed turbulence in the resistive pressure-gradient-driven turbulence model (11 pages)	046410
L. Garcia, B. A. Carreras, I. Llerena, and I. Calvo	
Classical physics	
Power loss and electromagnetic energy density in a dispersive metamaterial medium (5 pages)	046601
Pi-Gang Luan	
Experimental analysis of recoil effects induced by fluorescence photons (7 pages)	046602
Alexander Zhdanov, Satish Rao, Andrey Fedyanin, and Dmitri Petrov	
Exact multisolitonic solutions and their interactions in a (3+1)-dimensional system (12 pages)	046603
Cheng-Lin Bai	
Discrete reduced-symmetry solitons and second-band vortices in two-dimensional nonlinear waveguide arrays (15 pages)	046604
Magnus Johansson, Andrey A. Sukhorukov, and Yuri S. Kivshar	
Bulk and surface magnetoinductive breathers in binary metamaterials (9 pages)	046605
M. I. Molina, N. Lazarides, and G. P. Tsironis	
Chirped dissipative solitons of the complex cubic-quintic nonlinear Ginzburg-Landau equation (8 pages)	046606
V. L. Kalashnikov	
Localization of the electric-field distribution in graded core-shell metamaterials (5 pages)	046607
En-Bo Wei and K. W. Yu	
Single and multiple vibrational resonance in a quintic oscillator with monostable potentials (8 pages)	046608
S. Jeyakumari, V. Chinnathambi, S. Rajasekar, and M. A. F. Sanjuan	
Trajectory of an optical vortex in atmospheric turbulence (9 pages)	046609
A. Dipankar, R. Marchiano, and P. Sagaut	

Negative refraction, surface modes, and superlensing effect via homogenization near resonances for a finite array of split-ring resonators (7 pages)	046309
M. Farhat, S. Guenneau, S. Enoch, and A. B. Movchan	
Numerical simulation of gas-phonon coupling in thermal transpiration flows (10 pages)	046310
Xiaohui Guo, Dhruv Singh, Jayathi Murthy, and Alina A. Alexeenko	
Nonlocal form of the rapid pressure-strain correlation in turbulent flows (10 pages)	046311
Peter E. Hamlington and Werner J. A. Dahm	
Analysis of induced-charge electro-osmotic flow in a microchannel embedded with polarizable dielectric blocks (11 pages)	046312
Cunlu Zhao and Chun Yang	
Field-controlled adhesion in confined magnetorheological fluids (8 pages)	046313
Sérgio A. Lira and José A. Miranda	
Eddy diffusivity from hydromagnetic Taylor-Couette flow experiments (5 pages)	046314
Marcus Gellert and Günther Rüdiger	
Instability mechanisms and transition scenarios of spiral turbulence in Taylor-Couette flow (4 pages)	046315
Alvaro Meseguer, Fernando Mellibovsky, Marc Avila, and Francisco Marques	
Homologous onset of double layer convection (6 pages)	046316
F. H. Busse and M. Petry	
Two-dimensional supersonic nonlinear Schrödinger flow past an extended obstacle (25 pages)	046317
G. A. El, A. M. Kamchatnov, V. V. Khodorovskii, E. S. Annibale, and A. Gammal	
Evaporation and capillary coupling across vertical textural contrasts in porous media (13 pages)	046318
Peter Lehmann and Dani Or	
Motion of a droplet through microfluidic ratchets (6 pages)	046319
Jing Liu (刘晶), Yit Fatt Yap (叶逸发), and Nam-Trung Nguyen (阮南忠)	
Diagnosing temperature change inside sonoluminescing bubbles by calculating line spectra (6 pages)	046320
Yu An and Chaohui Li	
Emergence of acoustic waves from vorticity fluctuations: Impact of non-normality (6 pages)	046321
Joseph George and R. I. Sujith	
Viscous properties of isotropic fluids composed of linear molecules: Departure from the classical Navier-Stokes theory in nano-confined geometries (9 pages)	046322
J. S. Hansen, Peter J. Daivis, and B. D. Todd	
Rehinging biflagellar locomotion in a viscous fluid (7 pages)	046323
Saverio E. Spagnolie	
Sedimentation of particles in a vigorously convecting fluid (8 pages)	046324
G. Lavorel and M. Le Bars	
Sonoluminescence radiation from different concentrations of sulfuric acid (7 pages)	046325
A. Moshaii, Kh. Imani, and M. Silatani	
Plasma physics	
Waiting-time distributions of magnetic discontinuities: Clustering or Poisson process? (7 pages)	046401
A. Greco, W. H. Matthaeus, S. Servidio, and P. Dmitruk	

Time-delay-induced instabilities in reaction-diffusion systems (<i>6 pages</i>)	046212
Shrabani Sen, Pushpita Ghosh, Syed Shahed Riaz, and Deb Shankar Ray	
Understanding dynamics of the system using Hilbert phases: An application to study neonatal and fetal brain signals (<i>8 pages</i>)	046213
R. B. Govindan, S. Vairavan, J. D. Wilson, H. Preissl, J. Vrba, C. L. Lowery, and H. Eswaran	
Dynamical formation of stable irregular transients in discontinuous map systems (<i>6 pages</i>)	046214
Hailin Zou, Shuguang Guan, and C.-H. Lai	
Existence of hysteresis in the Kuramoto model with bimodal frequency distributions (<i>9 pages</i>)	046215
Diego Pazó and Ernest Montbrió	
Loschmidt echo and the local density of states (<i>7 pages</i>)	046216
Natalia Ares and Diego A. Wisniacki	
Modeling of a density oscillator (<i>12 pages</i>)	046217
T. Kano and S. Kinoshita	
Semiclassical description of wave packet revival (<i>9 pages</i>)	046218
Fabricio Toscano, Raúl O. Vallejos, and Diego Wisniacki	
Unified framework for detecting phase synchronization in coupled time series (<i>11 pages</i>)	046219
Junfeng Sun and Michael Small	
Predicting the coherence resonance curve using a semianalytical treatment (<i>5 pages</i>)	046220
Santidan Biswas, Dibyendu Das, P. Parmananda, and Anirban Sain	
Faceting and coarsening dynamics in the complex Swift-Hohenberg equation (<i>15 pages</i>)	046221
Lendert Gelens and Edgar Knobloch	
Fluid dynamics	
Exact vectorial law for homogeneous rotating turbulence (<i>9 pages</i>)	046301
Sébastien Galtier	
Influence of anisotropy on anomalous scaling of a passive scalar advected by the Navier-Stokes velocity field (<i>19 pages</i>)	046302
E. Jurčíšínová, M. Jurčíšin, and R. Remecký	
Electrically initiated upstream coalescence cascade of droplets in a microfluidic flow (<i>9 pages</i>)	046303
Michele Zagnoni, Charles N. Baroud, and Jonathan M. Cooper	
Scaling and memory in the return intervals of energy dissipation rate in three-dimensional fully developed turbulence (<i>6 pages</i>)	046304
Chuang Liu (刘闯), Zhi-Qiang Jiang (蒋志强), Fei Ren (任飞), and Wei-Xing Zhou (周炜星)	
Linear analysis of incompressible Rayleigh-Taylor instability in solids (<i>12 pages</i>)	046305
A. R. Piriz, J. J. López Cela, and N. A. Tahir	
Stagnation point von Kármán coefficient (<i>13 pages</i>)	046306
V. Dallas, J. C. Vassilicos, and G. F. Hewitt	
Basics of lava-lamp convection (<i>7 pages</i>)	046307
Balázs Gyüre and Imre M. Jánosi	
Kinematic α effect in the presence of a large-scale motion (<i>13 pages</i>)	046308
Alice Courvoisier and Eun-jin Kim	

Interest rates in quantum finance: The Wilson expansion and Hamiltonian (23 pages)	046119
Belal E. Baaquie	
Fracture surface statistics of filled elastomers (5 pages)	046120
Thomas Horst, Katrin Reincke, Sybill Ilisch, Gert Heinrich, and Wolfgang Grellmann	
Analytical results for bond percolation and k -core sizes on clustered networks (13 pages)	046121
James P. Gleeson and Sergey Melnik	
Similarity index based on local paths for link prediction of complex networks (9 pages)	046122
Linyuan Lü, Ci-Hang Jin, and Tao Zhou	
Residential segregation and cultural dissemination: An Axelrod-Schelling model (5 pages)	046123
C. Gracia-Lázaro, L. F. Lafuerza, L. M. Floría, and Y. Moreno	
Binding site models of friction due to the formation and rupture of bonds: State-function formalism, force-velocity relations, response to slip velocity transients, and slip stability (15 pages)	046124
Manoj Srinivasan and Sam Walcott	
Viscoelastic subdiffusion: From anomalous to normal (11 pages)	046125
Igor Goychuk	
Chaos and pattern formation	
Rotating bouncing disks, tossing pizza dough, and the behavior of ultrasonic motors (11 pages)	046201
Kuang-Chen Liu, James Friend, and Leslie Yeo	
Intrinsic localized modes in parametrically driven arrays of nonlinear resonators (14 pages)	046202
Eyal Kenig, Boris A. Malomed, M. C. Cross, and Ron Lifshitz	
Statistics of resonance states in open chaotic systems: A perturbative approach (8 pages)	046203
Charles Poli, Dmitry V. Savin, Olivier Legrand, and Fabrice Mortessagne	
Recovery of chaotic tunneling due to destruction of dynamical localization by external noise (13 pages)	046204
Akiyuki Ishikawa, Atushi Tanaka, and Akira Shudo	
Exciting traffic jams: Nonlinear phenomena behind traffic jam formation on highways (12 pages)	046205
Gábor Orosz, R. Eddie Wilson, Róbert Szalai, and Gábor Stépán	
Dynamics of chaotic systems with attractive and repulsive couplings (6 pages)	046206
Yuehua Chen, Jinghua Xiao, Weiqing Liu, Lixiang Li, and Yixian Yang	
Using the minimum description length principle for global reconstruction of dynamic systems from noisy time series (6 pages)	046207
Ya. I. Molkov, D. N. Mukhin, E. M. Loskutov, A. M. Feigin, and G. A. Fidelin	
Rotational motion of traveling spots in dissipative systems (10 pages)	046208
Takashi Teramoto, Katsuya Suzuki, and Yasumasa Nishiura	
Propagating fronts in the complex Ginzburg-Landau equation generate fixed-width bands of plane waves (6 pages)	046209
Matthew J. Smith and Jonathan A. Sherratt	
Universality in the one-dimensional chain of phase-coupled oscillators (13 pages)	046210
Tony E. Lee, G. Refael, M. C. Cross, Oleg Kogan, and Jeffrey L. Rogers	
Periodically forced ensemble of nonlinearly coupled oscillators: From partial to full synchrony (12 pages) . . .	046211
Yernur Baibolatov, Michael Rosenblum, Zeinulla Zh. Zhanabaev, Meyramgul Kyzgarina, and Arkady Pikovsky	