PHYSICAL REVIEW E

For editorial and subscription correspondence, please see inside front cover
(ISSN: 1063-651X)

PERIODICALS
Postmaster send address changes to:
American Institute of Physics
Suite 1NO1
2 Huntington Quadrangle
Melville, NY 11747-4502

THIRD SERIES, VOLUME 63, NUMBER 3
PARTS 1 AND 2

CONTENTS

MARCH 2001

The Table of Contents is a total listing of Parts 1 and 2.

PART 1

RAPID COMMUNICATIONS

Statistical physics of soft matter

Nonlinear equation for anomalous diffusion: Unified power-law and stretched exponential exact solution *(4 pages)* . . . . . 030101(R)
L. C. Malacarne, R. S. Mendes, I. T. Pedron, and E. K. Lenzi

Molecular motor based entirely on the Coulomb interaction *(4 pages)* . . . . . 030102(R)
Markus Porto

Granular materials

Dissipative Abelian sandpiles and random walks *(4 pages)* . . . . . 030301(R)
C. Vanderzande and F. Daerden

Structured and complex fluids

Undulations in a confined lamellar system with surface anchoring *(4 pages)* . . . . . 030501(R)
T. Ishikawa and O. D. Lavrentovich

Averaging rheological quantities in descriptions of soft glassy materials *(3 pages)* . . . . . 030502(R)
François Lequeux and Armand Ajdari

Biological physics

Social games in a social network *(4 pages)* . . . . . 030901(R)
Guillermo Abramson and Marcelo Kuperman

Anomalous swelling in phospholipid bilayers is not coupled to the formation of a ripple phase *(4 pages)* . . . . 030902(R)
P. C. Mason, J. F. Nagle, R. M. Epand, and J. Katsaras

REGULAR ARTICLES

Statistical physics of soft matter

Icosahedron-fcc transition size by molecular dynamics simulation of Lennard-Jones clusters at a finite temperature *(8 pages)* 031101
Tamio Ikeshoji, Gérard Torchet, Marie-Françoise de Feraudy, and Kenji Koga

Weighted density functional theory for simple fluids: Supercritical adsorption of a Lennard-Jones fluid in an ideal slit pore *(9 pages)* 031102
M. B. Sweatman

Copyright 2001 by The American Physical Society

(Continued)

1063-651X(200103)63:3:1;1-D

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 63, NUMBER 3** **MARCH 2001**

Random Ginzburg-Landau model revisited: Reentrant phase transitions *(10 pages)* 031103
Javier Buceta, Juan M. R. Parrondo, and F. Javier de la Rubia
Numerical study of persistence in models with absorbing states *(7 pages)* 031104
Ezequiel V. Albano and Miguel A. Muñoz
Ground-state fluctuations in finite Fermi systems *(8 pages)* 031105
Muoi N. Tran, M. V. N. Murthy, and R. K. Bhaduri
Slow dynamics and aging in a constrained diffusion model *(12 pages)* 031106
Federico Corberi, Mario Nicodemi, Marina Piccioni, and Antonio Coniglio
Effects of colored noise on stochastic resonance in a bistable system subject to multiplicative and additive noise *(8 pages)* 031107
Ya Jia, Xiao-ping Zheng, Xiang-ming Hu, and Jia-rong Li
Kac-potential treatment of nonintegrable interactions *(8 pages)* 031108
Benjamin P. Vollmayr-Lee and Erik Luijten
Simple model of a random walk with arbitrarily long memory *(5 pages)* 031109
Arturo Berrones and Hernán Larralde
Mirror symmetry breaking through an internal degree of freedom leading to directional motion *(5 pages)* . . . 031110
S. Cilla, F. Falo, and L. M. Floría
Josephson vortex in a ratchet potential: Theory *(10 pages)* 031111
E. Goldobin, A. Sterck, and D. Koelle
Euler-Poincaré characteristics of classes of disordered media *(13 pages)* 031112
C. H. Arns, Mark A. Knackstedt, W. V. Pinczewski, and K. R. Mecke

Equilibrium and linear transport properties of fluids

Wetting of a symmetrical binary fluid mixture on a wall *(12 pages)* 031201
F. Schmid and N. B. Wilding
Diffusion and localization of surface gravity waves over irregular bathymetry *(11 pages)* 031202
A. Stepaniants
Generic van der Waals equation of state and statistical mechanical representations of the van der Waals parameters *(9 pages)* 031203
Byung Chan Eu and Kyunil Rah
Mean-atom-trajectory model for the velocity autocorrelation function of monatomic liquids *(6 pages)* 031204
Eric D. Chisolm, Brad E. Clements, and Duane C. Wallace
Critical properties and phase separation in lattice Boltzmann fluid mixtures *(18 pages)* 031205
Nicos S. Martys and Jack F. Douglas
Criterion for determining clustering versus reentrant melting behavior for bounded interaction potentials *(9 pages)* 031206
C. N. Likos, A. Lang, M. Watzlawek, and H. Löwen
Pressure dependence of structural relaxation time in terms of the Adam-Gibbs model *(6 pages)* 031207
R. Casalini, S. Capaccioli, M. Lucchesi, P. A. Rolla, and S. Corezzi

Granular materials

Grain dynamics in a two-dimensional granular flow *(16 pages)* 031301
S. Hørlück and P. Dimon
Effect of applied interparticle force on the static and dynamic angles of repose of spherical granular material *(5 pages)* 031302
A. J. Forsyth, S. R. Hutton, M. J. Rhodes, and C. F. Osborne
Nonlinear hydrodynamical approach to granular materials *(13 pages)* 031303
Scott A. Hill and Gene F. Mazenko
Dissipative properties and scaling law for a layer of granular material on a vibrating plate *(3 pages)* 031304
Guoqing Miao, Lei Sui, and Rongjue Wei

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

Selection of velocity profile and flow depth in granular flows *(8 pages)* 031305
B. Andreotti and S. Douady

Colloidal dispersions, suspensions, and aggregates

Growth kinetics and structure of fibrin gels *(17 pages)* 031401
F. Ferri, M. Greco, G. Arcovito, F. Andreasi Bassi, M. De Spirito, E. Paganini, and M. Rocco
Dynamic susceptibilities of an assembly of dipolar particles in an elastic environment *(10 pages)* 031402
Yu. L. Raikher, V. V. Rusakov, W. T. Coffey, and Yu. P. Kalmykov
Phase coexistence in colloidal suspensions: An analytic Poisson-Boltzmann treatment *(10 pages)* 031403
Michael Knott and Ian J. Ford

Structured and complex fluids

Mechanical properties of a model of attractive colloidal solutions *(11 pages)* 031501
E. Zaccarelli, G. Foffi, K. A. Dawson, F. Sciortino, and P. Tartaglia
Tube diameter in tightly entangled solutions of semiflexible polymers *(22 pages)* 031502
David C. Morse
Novel phases and reentrant melting of two-dimensional colloidal crystals *(34 pages)* 031503
Leo Radzihovsky, Erwin Frey, and David R. Nelson
Phase-field modeling of microstructural pattern formation during directional solidification of peritectic alloys without morphological instability *(15 pages)* 031504
Tak Shing Lo, Alain Karma, and Mathis Plapp
Rheological and small-angle neutron scattering studies of aqueous solutions of branched PEO-PPO-PEO copolymers *(11 pages)* 031505
Christelle Perreur, Jean-Pierre Habas, Jean Peyrelasse, Jeanne François, and Alain Lapp

Films, interfaces, and crystal growth

Line tension approaching a first-order wetting transition: Experimental results from contact angle measurements *(11 pages)* 031601
J. Y. Wang, S. Betelu, and B. M. Law
Interfacial fluctuations near the critical filling transition *(6 pages)* 031602
A. Bednorz and M. Napiórkowski
Coiling instability of multilamellar membrane tubes with anchored polymers *(11 pages)* 031603
Ilan Tsafrir, Marie-Alice Guedeau-Boudeville, Daniel Kandel, and Joel Stavans
Numerical study of the Marangoni instability resulting in surface tension auto-oscillations: General regularities of the system evolution *(10 pages)* 031604
N. M. Kovalchuk, V. I. Kovalchuk, and D. Vollhardt

Liquid crystals

Formation and distribution of point defects on a disclination line near a free nematic interface *(9 pages)* 031701
Jordi Ignés-Mullol, Jean Baudry, and Patrick Oswald
Interactions between colloidal inclusions in two-dimensional smectic-*C** films *(4 pages)* 031702
P. Cluzeau, P. Poulin, G. Joly, and H. T. Nguyen
Influence of ions on the ''V-shaped'' electro-optic response of ferroelectric liquid crystals *(5 pages)* 031703
M. Čopič, J. E. Maclennan, and N. A. Clark
Landau–de Gennes theory of surface-enhanced ordering in smectic films *(9 pages)* 031704
A. N. Shalaginov and D. E. Sullivan
Surface depinning of smectic-*A* edge dislocations *(6 pages)* 031705
M. Slavinec, S. Kralj, S. Žumer, and T. J. Sluckin

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 63, NUMBER 3** **MARCH 2001**

Dynamics of free-standing smectic-*A* films *(11 pages)* 031706
V. P. Romanov and S. V. Ul'yanov
Time-resolved infrared spectroscopy of nematic-liquid-crystal electro-optic switching *(6 pages)* 031707
Won Gun Jang and Noel A. Clark
Fluctuation-entanglement mechanism for director anchoring at nematic polymer surfaces *(4 pages)* 031708
F. N. Braun and C. Viney

Polymers

Molecular weight dependence of reductions in the glass transition temperature of thin, freely standing polymer films *(10 pages)* 031801
K. Dalnoki-Veress, J. A. Forrest, C. Murray, C. Gigault, and J. R. Dutcher
Cold and warm swelling of hydrophobic polymers *(5 pages)* 031802
Paolo De Los Rios and Guido Caldarelli
Chain aggregation in dilute solutions of poly(methyl methacrylate) below the phase-separation temperature *(10 pages)* 031803
Tomohide Nakagawa, Yoshiki Nakamura, Naoki Sasaki, and Mitsuo Nakata
Monte Carlo simulation of morphologies of self-assembled amphiphilic diblock copolymers in solution *(4 pages)* 031804
Xuehao He, Haojun Liang, and Caiyuan Pan

Biological physics

Exactness of the annealed and the replica symmetric approximations for random heteropolymers *(12 pages)* 031901
Ugo Bastolla and Peter Grassberger
Shot noise in the leaky integrate-and-fire neuron *(11 pages)* 031902
Nicolas Hohn and Anthony N. Burkitt
Population dynamics with and without selection *(7 pages)* 031903
Andrzej Pękalski and Katarzyna Sznajd-Weron
Long-range intermolecular interaction between broken DNA fragments *(6 pages)* 031904
Anatoliy O. Pinchuk and Vladimir I. Vysotskii
Coexistence of multiple spiral waves with independent frequencies in a heterogeneous excitable medium *(4 pages)* 031905
Fagen Xie, Zhilin Qu, James N. Weiss, and Alan Garfinkel
Global dynamics and stochastic resonance of the forced FitzHugh-Nagumo neuron model *(10 pages)* 031906
Pu-Lin Gong and Jian-Xue Xu
Effects of correlated and independent noise on signal processing in neuronal systems *(9 pages)* 031907
Feng Liu, Bambi Hu, and Wei Wang
Analytic model for ring pattern formation by bacterial swarmers *(14 pages)* 031908
Scott Arouh
Kinetic proofreading can explain the supression of supercoiling of circular DNA molecules by type-II topoisomerases *(11 pages)* 031909
Jie Yan, Marcelo O. Magnasco, and John F. Marko
Behavioral stochastic resonance: How a noisy army betrays its outpost *(11 pages)* 031910
Jan A. Freund, Jochen Kienert, Lutz Schimansky-Geier, Beatrix Beisner, Alexander Neiman, David F. Russell, Tatyana Yakusheva, and Frank Moss
Dynamics of moments of FitzHugh-Nagumo neuronal models and stochastic bifurcations *(9 pages)* 031911
Seiji Tanabe and K. Pakdaman
Adaptive learning by extremal dynamics and negative feedback *(12 pages)* 031912
Per Bak and Dante R. Chialvo

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

Difference between ''proteinlike'' and ''nonproteinlike'' heteropolymers *(7 pages)* 031913
Hu Chen, Xin Zhou, and Zhong-Can Ou-Yang
Noise-induced transport of two coupled particles *(10 pages)* 031914
Stefan Klumpp, Andreas Mielke, and Christian Wald
Theory of periodic swarming of bacteria: Application to *Proteus mirabilis (11 pages)* 031915
A. Czirók, M. Matsushita, and T. Vicsek
Stochastic resonance in neuron models: Endogenous stimulation revisited *(6 pages)* 031916
Hans E. Plesser and Theo Geisel

BRIEF REPORTS

Statistical physics of soft matter

Nonequilibrium roughening transition in a volume conserving system *(3 pages)* 032101
Kwangho Park, Hyun-Joo Kim, and In-mook Kim
Liquid-solid phase transition of a system with two particles in a rectangular box *(4 pages)* 032102
Akinori Awazu

Films, interfaces, and crystal growth

Entropy fluctuations for directed polymers in $2+1$ dimensions *(4 pages)* 032601
Xiao-Hong Wang, Shlomo Havlin, and Moshe Schwartz
Positional order and thermal expansion of surface crystalline *N*-alkane monolayers *(3 pages)* 032602
B. M. Ocko, E. B. Sirota, M. Deutsch, E. DiMasi, S. Coburn, Joe Strzalka, Songyan Zheng, Andrey Tronin, Thomas Gog, and Chitra Venkataraman

Liquid crystals

Saddle-splay elasticity and interfacial nematostatics *(4 pages)* 032701
Alejandro D. Rey

Biological physics

Thermodynamically important contacts in folding of model proteins *(4 pages)* 032901
Antonio Scala, Nikolay V. Dokholyan, Sergey V. Buldyrev, and H. Eugene Stanley

PART 2

RAPID COMMUNICATIONS

General methods of statistical physics

Corrections to scaling for the two-dimensional dynamic *XY* model *(4 pages)* . . . . . 035101(R)
H. P. Ying, B. Zheng, Y. Yu, and S. Trimper

Chaos and pattern formation

Chaotic motion around prolate deformed bodies *(4 pages)* . . . . . 035201(R)
Eduardo Guéron and Patricio S. Letelier
Reducing nonideal to ideal coupling in random matrix description of chaotic scattering: Application to the time-delay problem *(4 pages)* . . . . . 035202(R)
Dmitry V. Savin, Yan V. Fyodorov, and Hans-Jürgen Sommers

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

Nonlinear hydrodynamics and turbulence

Single-bubble sonoluminescence from noble gases *(4 pages)* . . . . . 035301(R)
Kyuichi Yasui
Shock wave criterion for propagating solitary states in driven surface waves *(4 pages)* . . . . . 035302(R)
O. Lioubashevski and J. Fineberg
Measuring nonextensitivity parameters in a turbulent Couette-Taylor flow *(4 pages)* . . . . . 035303(R)
Christian Beck, Gregory S. Lewis, and Harry L. Swinney
Symmetry breaking, anomalous scaling, and large-scale flow generation in a convection cell *(4 pages)* . . . . . 035304(R)
Ananias G. Tomboulides and Victor Yakhot

Classical physics, including nonlinear media

Equivalence of three approaches describing partially incoherent wave propagation in inertial nonlinear media *(4 pages)* . . . . . 035601(R)
Demetrios N. Christodoulides, Eugenia D. Eugenieva, Tamer H. Coskun, Mordechai Segev, and Matthew Mitchell

REGULAR ARTICLES

General methods of statistical physics

Critical properties of the reaction-diffusion model $2A \rightarrow 3A$, $2A \rightarrow 0$ *(10 pages)* 036101
Enrico Carlon, Malte Henkel, and Ulrich Schollwöck
Pair contact process with diffusion: A new type of nonequilibrium critical behavior? *(3 pages)* 036102
Haye Hinrichsen
Noisy random resistor networks: Renormalized field theory for the multifractal moments of the current distribution *(20 pages)* 036103
Olaf Stenull and Hans-Karl Janssen
Variational mean-field study of a continuum model of crystalline tensionless surfaces *(9 pages)* 036104
Esteban Moro and Rodolfo Cuerno
Mean first passage times of processes driven by white shot noise *(8 pages)* 036105
F. Laio, A. Porporato, L. Ridolfi, and I. Rodriguez-Iturbe
Partition function for a one-dimensional δ-function Bose gas *(14 pages)* 036106
Go Kato and Miki Wadati
Traveling waves in an optimal velocity model of freeway traffic *(11 pages)* 036107
Peter Berg and Andrew Woods
Kinetic evolution of unmixing in an AlLi alloy using x-ray intensity fluctuation spectroscopy *(7 pages)* 036108
F. Livet, F. Bley, R. Caudron, E. Geissler, D. Abernathy, C. Detlefs, G. Grübel, and M. Sutton
Dynamic phase transition in a time-dependent Ginzburg-Landau model in an oscillating field *(11 pages)* 036109
H. Fujisaka, H. Tutu, and P. A. Rikvold
Noise properties in the Nagel-Schreckenberg traffic model *(6 pages)* 036110
Shu-ping Chen and Ding-wei Huang
Self-organized criticality and universality in a nonconservative earthquake model *(5 pages)* 036111
Stefano Lise and Maya Paczuski
Domain wall formation in the Cahn-Hilliard-Cook equation *(6 pages)* 036112
Jacek Dziarmaga and Mariusz Sadzikowski
Exact sampling from nonattractive distributions using summary states *(5 pages)* 036113
Andrew M. Childs, Ryan B. Patterson, and David J. C. MacKay
Exact phase diagram of a model with aggregation and chipping *(7 pages)* 036114
R. Rajesh and Satya N. Majumdar

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 63, NUMBER 3** **MARCH 2001**

Bunching transition in a time-headway model of a bus route *(7 pages)* 036115
Takashi Nagatani
Synergetic theory for a jamming transition in traffic flow *(4 pages)* 036116
Alexander I. Olemskoi and Alexei V. Khomenko
Phase-field modeling of stress-induced instabilities *(27 pages)* 036117
Klaus Kassner, Chaouqi Misbah, Judith Müller, Jens Kappey, and Peter Kohlert
Fate of zero-temperature Ising ferromagnets *(4 pages)* 036118
V. Spirin, P. L. Krapivsky, and S. Redner
Irreversible phase transitions driven by an oscillatory parameter in a far-from-equilibrium system *(8 pages)* 036119
G. P. Saracco and E. V. Albano
Elastic properties of inhomogeneous media with chaotic structure *(7 pages)* 036120
V. V. Novikov, K. W. Wojciechowski, D. V. Belov, and V. P. Privalko
Soluble two-species diffusion-limited models in arbitrary dimensions *(25 pages)* 036121
M. Mobilia and P.-A. Bares
Dynamic scaling for avalanches in disordered systems *(6 pages)* 036122
Guang-Ping Zheng and Mo Li
Translational invariance in nucleation theories: Theoretical formulation *(13 pages)* 036123
Y. Drossinos, P. G. Kevrekidis, and P. G. Georgopoulos
Random field Ising systems on a general hierarchical lattice: Rigorous inequalities *(5 pages)* 036124
Avishay Efrat and Moshe Schwartz
Renormalization group and perfect operators for stochastic differential equations *(22 pages)* 036125
Qing Hou, Nigel Goldenfeld, and Alan McKane
Intermittence and roughening of periodic elastic media *(7 pages)* 036126
E. T. Seppälä, M. J. Alava, and P. M. Duxbury
Decoherence and thermalization in a simple bosonic system *(9 pages)* 036127
Pavel Cejnar, Vladimir Zelevinsky, and Valentin V. Sokolov
Self-generated power-law tails in probability distributions *(4 pages)* 036128
H. Eduardo Roman and Markus Porto
Locked-to-running transition in the two-dimensional underdamped driven Frenkel-Kontorova model *(13 pages)* 036129
O. M. Braun, M. V. Paliy, J. Röder, and A. R. Bishop
Self-organized criticality and the self-organizing map *(6 pages)* 036130
John A. Flanagan
Random walks on fractals and stretched exponential relaxation *(4 pages)* 036131
Philippe Jund, Rémi Jullien, and Ian Campbell
Heat kernel regularization of the effective action for stochastic reaction-diffusion equations *(17 pages)* 036132
David Hochberg, Carmen Molina-París, and Matt Visser

Chaos and pattern formation

Transcritical riddling in a system of coupled maps *(15 pages)* 036201
O. Popovych, Yu. Maistrenko, E. Mosekilde, A. Pikovsky, and J. Kurths
Integrals of motion and semipermeable surfaces to bound the amplitude of a plasma instability *(8 pages)* . . . 036202
S. Neukirch
Parametric dependent Hamiltonians, wave functions, random matrix theory, and quantal-classical correspondence *(7 pages)* 036203
Doron Cohen and Tsampikos Kottos
Synchronization of Kauffman networks *(10 pages)* 036204
Luis G. Morelli and Damián H. Zanette

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 63, NUMBER 3** **MARCH 2001**

Chaotic dynamics from interspike intervals *(5 pages)* 036205
Alexey N. Pavlov, Olga V. Sosnovtseva, Erik Mosekilde, and Vadim S. Anishchenko
Singular statistics *(16 pages)* 036206
Eugène Bogomolny, Ulrich Gerland, and Charles Schmit
Dynamic localization of Lyapunov vectors in Hamiltonian lattices *(9 pages)* 036207
Arkady Pikovsky and Antonio Politi
Milnor strange nonchaotic attractor with complex basin of attraction *(4 pages)* 036208
H. L. Yang
Nonlinear noise reduction using reference data *(4 pages)* 036209
Karsten Sternickel, Arndt Effern, Klaus Lehnertz, Thomas Schreiber, and Peter David
Strong desynchronizing effects of weak noise in globally coupled systems *(7 pages)* 036210
Jun-nosuke Teramae and Yoshiki Kuramoto
Interacting pairs of periodic solutions lead to tori in lasers subject to delayed feedback *(11 pages)* 036211
D. Pieroux, T. Erneux, T. Luzyanina, and K. Engelborghs
Using thresholding at varying intervals to obtain different temporal patterns *(9 pages)* 036212
Sudeshna Sinha
Lyapunov exponents in disordered chaotic systems: Avoided crossing and level statistics *(4 pages)* 036213
Volker Ahlers, Rüdiger Zillmer, and Arkady Pikovsky
Phase signal coupling induced $n:m$ phase synchronization in drive-response oscillators *(6 pages)* 036214
J. Y. Chen, K. W. Wong, H. Y. Zheng, and J. W. Shuai
Approach to energy eigenvalues and eigenfunctions from nonperturbative regions of eigenfunctions *(4 pages)* 036215
Wen-ge Wang
Cluster synchronization modes in an ensemble of coupled chaotic oscillators *(4 pages)* 036216
Vladimir N. Belykh, Igor V. Belykh, and Erik Mosekilde
Learning to control a complex multistable system *(12 pages)* 036217
Sabino Gadaleta and Gerhard Dangelmayr
Sensitive boundary condition dependence of noise-sustained structure *(5 pages)* 036218
Koichi Fujimoto and Kunihiko Kaneko
Analysis of a parametrically driven pendulum *(17 pages)* 036219
Randy Kobes, Junxian Liu, and Slaven Peleš
Real-time memory on an excitable field *(4 pages)* 036220
Ikuko N. Motoike, Kenichi Yoshikawa, Yasutaka Iguchi, and Satoshi Nakata
Dimension of interaction dynamics *(15 pages)* 036221
Daniel Wójcik, Andrzej Nowak, and Marek Kuś
Localization transition in incommensurate non-Hermitian systems *(6 pages)* 036222
Amin Jazaeri and Indubala I. Satija
Bicritical scaling behavior in unidirectionally coupled oscillators *(10 pages)* 036223
Sang-Yoon Kim and Woochang Lim
Chaotic advection near a three-vortex collapse *(17 pages)* 036224
X. Leoncini, L. Kuznetsov, and G. M. Zaslavsky
Phase-frequency synchronization in a chain of periodic oscillators in the presence of noise and harmonic forcings *(8 pages)* 036225
Tatjana E. Vadivasova, Galina I. Strelkova, and Vadim S. Anishchenko
Transition to stochastic synchronization in spatially extended systems *(10 pages)* 036226
Lucia Baroni, Roberto Livi, and Alessandro Torcini
Fractals and dynamical chaos in a two-dimensional Lorentz gas with sinks *(10 pages)* 036227
I. Claus and P. Gaspard

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

Nonlinear hydrodynamics and turbulence

Singularities in the Boussinesq equation and in the generalized Korteweg–de Vries equation *(7 pages)* 036301
Yang Lei and Yang Kongqing
Anomalous scaling in two models of passive scalar advection: Effects of anisotropy and compressibility *(7 pages)* 036302
N. V. Antonov and Juha Honkonen
Stability of a viscous fluid in an oscillating gravitational field *(8 pages)* 036303
A. A. Ivanov and A. S. Chuvatin
Cascades in helical turbulence *(4 pages)* 036304
P. D. Ditlevsen and P. Giuliani
Amplitude measurements of Faraday waves *(9 pages)* 036305
A. Wernet, C. Wagner, D. Papathanassiou, H. W. Müller, and K. Knorr
Formulation of subgrid stresses for large-scale fluid equations *(7 pages)* 036306
Fernando O. Minotti and Sergio Dasso
Saffman-Taylor problem on a sphere *(10 pages)* 036307
Fernando Parisio, Fernando Moraes, José A. Miranda, and Michael Widom

Plasma physics

Transitions of macroscopic structures and self-induced chaos observed in plasmas by a dc hollow cathode discharge having features of nonlinear open systems *(8 pages)* 036401
Y. Kondoh, T. Ubusawa, D. Asanuma, Y. Hayakawa, A. Matsuoka, T. Takahashi, M. Goto, and T. Okada
Ionizational instability in an ionized inert gas flowing in a magnetic field *(9 pages)* 036402
R. V. Vasil'eva, A. V. Erofeev, E. A. D'yakonova, T. A. Lapushkina, and S. A. Poniaev
Experimental study of a subpicosecond pulse laser interacting with metallic and dielectric targets *(4 pages)* 036403
L. M. Chen, J. Zhang, H. Teng, Q. L. Dong, Z. L. Chen, T. J. Liang, L. Z. Zhao, and Z. Y. Wei
Atomic spectral line free parameter deconvolution procedure *(7 pages)* 036404
V. Milosavljević and G. Poparić
Stochastic properties of strongly coupled plasmas *(9 pages)* 036405
I. V. Morozov, G. E. Norman, and A. A. Valuev
Levitation of cylindrical particles in the sheath of an rf plasma *(6 pages)* 036406
B. M. Annaratone, A. G. Khrapak, A. V. Ivlev, G. Söllner, P. Bryant, R. Sütterlin, U. Konopka, K. Yoshino, M. Zuzic, H. M. Thomas, and G. E. Morfill
Necessity of bunch compression for heavy-ion-induced hydrodynamics and studies of beam fragmentation in solid targets at a proposed synchrotron facility *(8 pages)* 036407
N. A. Tahir, A. Kozyreva, P. Spiller, D. H. H. Hoffmann, and A. Shutov
Plasma perturbation induced by laser photodetachment *(7 pages)* 036408
M. Nishiura, M. Sasao, M. Wada, and M. Bacal
Kinetic model of ionization waves in a positive column at intermediate pressures in inert gases *(10 pages)* 036409
Yu. B. Golubovskii, V. A. Maiorov, V. O. Nekutchaev, J. Behnke, and J. F. Behnke
Hydrodynamic characteristics of transient Ni-like x-ray lasers *(6 pages)* 036410
Y. J. Li and J. Zhang

Physics of beams

Stimulated electromagnetic shock radiation: Classical second-order calculations *(19 pages)* 036501
A. A. Risbud and N. C. Kamerkar

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

Simulation and design of stable channel-guided laser wakefield accelerators *(13 pages)* 036502
R. F. Hubbard, D. Kaganovich, B. Hafizi, C. I. Moore, P. Sprangle, A. Ting, and A. Zigler
Constraints on plasma compensation of beam-beam effects in muon colliders *(4 pages)* 036503
K. V. Lotov

Classical physics, including nonlinear media

Nonlinearity and disorder: Classification and stability of nonlinear impurity modes *(18 pages)* 036601
Andrey A. Sukhorukov, Yuri S. Kivshar, Ole Bang, Jens J. Rasmussen, and Peter L. Christiansen
Soliton internal mode bifurcations: Pure power law? *(5 pages)* 036602
T. Kapitula, P. G. Kevrekidis, and C. K. R. T. Jones
Twisted localized modes *(6 pages)* 036603
P. G. Kevrekidis, A. R. Bishop, and K. Ø. Rasmussen
Stability of multiple pulses in discrete systems *(8 pages)* 036604
T. Kapitula, P. G. Kevrekidis, and B. A. Malomed
Phase-induced stability in a parametric dimer *(9 pages)* 036605
Mauro Copelli and Katja Lindenberg
Localized electromagnetic and weak gravitational fields in the source-free space *(10 pages)* 036606
G. N. Borzdov
Scattering of sound by a vorticity filament: An experimental and numerical investigation *(11 pages)* 036607
Sébastien Manneville, Philippe Roux, Mickaël Tanter, Agnès Maurel, Mathias Fink, Frédéric Bottausci, and Philippe Petitjeans
Measurement of the gain volume in amplifying and scattering media by a two-beam spatial-correlation method *(4 pages)* 036608
Tetsu Ito and Makoto Tomita
Dynamics of a charged particle in a linearly polarized traveling electromagnetic wave *(9 pages)* 036609
A. Bourdier and S. Gond
Group velocity, energy velocity, and superluminal propagation in finite photonic band-gap structures *(5 pages)* 036610
G. D'Aguanno, M. Centini, M. Scalora, C. Sibilia, M. J. Bloemer, C. M. Bowden, J. W. Haus, and M. Bertolotti
Isomeric photonic molecules formed from coupled microresonators *(4 pages)* 036611
G. Guttroff, M. Bayer, A. Forchel, P. A. Knipp, and T. L. Reinecke
Stability of repulsive Bose-Einstein condensates in a periodic potential *(11 pages)* 036612
J. C. Bronski, L. D. Carr, B. Deconinck, J. N. Kutz, and K. Promislow
Dichromatic nonlinear eigenmodes in slab waveguide with $\chi^{(2)}$ nonlinearity *(5 pages)* 036613
S. A. Darmanyan and M. Nevière
Radiative losses due to pulse interactions in birefringent nonlinear optical fibers *(9 pages)* 036614
Noel F. Smyth and William L. Kath

Computational physics

Viscous flow and jump dynamics in molecular supercooled liquids. I. Translations *(10 pages)* 036701
Cristiano De Michele and Dino Leporini
Viscous flow and jump dynamics in molecular supercooled liquids. II. Rotations *(10 pages)* 036702
Cristiano De Michele and Dino Leporini
Three-dimensional optical trajectory tracing and energy deposition of a laser beam in a laser-driven fusion *(5 pages)* 036703
Shi-Bing Liu, Ping-Qing Luo, Yong-Hui Zhang, Shao-Ping Zhu, and Wei-Yan Zhang

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 63, NUMBER 3 MARCH 2001

BRIEF REPORTS

General methods of statistical physics

Critical behavior of the long-range Ising chain from the largest-cluster probability distribution *(4 pages)* 037101
Katarina Uzelac, Zvonko Glumac, and Ante Aničić

Unified optimization criterion for energy converters *(4 pages)* 037102
A. Calvo Hernández, A. Medina, J. M. M. Roco, J. A. White, and S. Velasco

Quantum phase transitions and the extended coupled cluster method *(4 pages)* 037103
N. E. Ligterink, N. R. Walet, and R. F. Bishop

Two-step melting transition in confined hard spheres in three dimensions *(4 pages)* 037104
Willem K. Kegel

Chaos and pattern formation

Spectral oscillations in a frequency-modulation laser operation *(4 pages)* 037201
Stefano Longhi

Two-dimensional type-I intermittency *(4 pages)* 037202
Chil-Min Kim and Won-Ho Kye

Nonlinear hydrodynamics and turbulence

Invisible mean field dynamos *(4 pages)* 037301
R. Kaiser and A. Tilgner

Plasma physics

Interaction of an electromagnetic wave packet with an ionization front: Copropagating configuration *(4 pages)* 037401
M. I. Bakunov, A. V. Maslov, and P. A. Ivanov

Bounds on the length of magnetic field lines in a two-dimensional plasma *(4 pages)* 037402
Manuel Núñez

Classical physics, including nonlinear media

Decay of discrete nonlinear Schrödinger breathers through inelastic multiphonon scattering *(4 pages)* 037601
Magnus Johansson

Phase retrieval from images in the presence of first-order vortices *(4 pages)* 037602
L. J. Allen, H. M. L. Faulkner, K. A. Nugent, M. P. Oxley, and D. Paganin

Ermakov-Lewis angles for one-parameter supersymmetric families of Newtonian free damping modes *(4 pages)* 037603
Haret C. Rosu and Pedro B. Espinoza

ERRATA

Erratum: Largest cluster in subcritical percolation [Phys. Rev. E **62**, 1660 (2000)] *(1 page)* . . . . . 039901(E)
Martin Z. Bazant

Cumulative Author Index i

(Continued)