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 60, NUMBER 4
PARTS A AND B

CONTENTS

OCTOBER 1999

The Table of Contents is a total listing of Parts A and B.
Part A consists of pages R3459–4198, and Part B pages 4199–5004.

PART A

Note to Reader i

RAPID COMMUNICATIONS

General methods of statistical physics

Territory covered by *N* random walkers R3459
S. B. Yuste and L. Acedo
Spatial stochastic resonance in one-dimensional Ising systems R3463
Zoltán Néda, Árpád Rusz, Erzsébet Ravasz, Porus Lakdawala, and Parshant M. Gade
Observability of stochastic resonance in neutron scattering R3467
C. A. Condat and Pedro W. Lamberti
Flow-distributed oscillations: Stationary chemical waves in a reacting flow R3471
Mads Kærn and Michael Menzinger
Exact interface model for wetting in the planar Ising model R3475
P. J. Upton

Chaos and nonlinear dynamical systems

Experimental investigation of universal parametric correlators using a vibrating plate R3479
K. Schaadt and A. Kudrolli

Classical fluids

Anisotropic nonperturbative zero modes for passively advected magnetic fields R3483
Alessandra Lanotte and Andrea Mazzino
Dynamical evolution of sand ripples under water R3487
Alexandre Stegner and José Eduardo Wesfreid
Taylor dispersion and molecular displacements in Poiseuille flow R3491
S. L. Codd, B. Manz, J. D. Seymour, and P. T. Callaghan

Liquid crystals

Multistable alignment in free suspended nematic liquid crystal films R3495
V. Nazarenko and A. Nych

Complex fluids, polymers, and granular materials

Possibility of rarefaction shock wave under short pulse laser ablation of solids R3498
Nadezhda M. Bulgakova

Copyright 1999 by The American Physical Society

(Continued)

1063-651X(199910)60:4:A;1-T

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Long-range density fluctuations in a symmetric diblock copolymer R3501
Tadanori Koga, Tsuyoshi Koga, Kohtaro Kimishima, and Takeji Hashimoto

Plasma physics

Formation of a conducting channel in air by self-guided femtosecond laser pulses R3505
S. Tzortzakis, M. A. Franco, Y.-B. André, A. Chiron, B. Lamouroux, B. S. Prade, and A. Mysyrowicz

Classical physics, including nonlinear media

Instabilities of cavity solitons in optical parametric oscillators R3508
Dmitry V. Skryabin

ARTICLES

General methods of statistical physics

Ground-state degeneracy of Potts antiferromagnets on two-dimensional lattices: Approach using infinite cyclic strip graphs 3512
Robert Shrock and Shan-Ho Tsai
Transport on an annealed disordered lattice 3516
Radim Vočka
Pauli paramagnetic gas in the framework of Riemannian geometry 3520
Kamran Kaviani and Ali Dalafi-Rezaie
Improved high-temperature expansion and critical equation of state of three-dimensional Ising-like systems 3526
Massimo Campostrini, Andrea Pelissetto, Paolo Rossi, and Ettore Vicari
Coarsening kinetics from a variable-mobility Cahn-Hilliard equation: Application of a semi-implicit Fourier spectral method 3564
Jingzhi Zhu, Long-Qing Chen, Jie Shen, and Veena Tikare
Simplified replica treatment of various random-energy and random-field models with confinement potential 3573
Gerhard Diener and Lutz Brusch
Spectral statistics and dynamics of Lévy matrices 3580
Mariela Araujo, Ernesto Medina, and Eduardo Aponte
Constructing new periodic exact solutions of evolution equations 3589
Jian-min Mao, Liu Zengrong, and Cao Yongluo
Noise-induced phase separation: Mean-field results 3597
M. Ibañes, J. García-Ojalvo, R. Toral, and J. M. Sancho
Domain-wall free energy of spin-glass models: Numerical method and boundary conditions 3606
Koji Hukushima
Phase-field model of dendritic sidebranching with thermal noise 3614
Alain Karma and Wouter-Jan Rappel
Pattern selection in a lattice of pulse-coupled oscillators 3626
X. Guardiola and A. Díaz-Guilera
Statistical mechanics of self-driven Carnot cycles 3633
Eric Smith
Damage spreading transition in glasses: A probe for the ruggedness of the configurational landscape 3646
M. Heerema and F. Ritort
Universal behavior in an irreversible model with C_{3v} symmetry 3666
Adriana Brunstein and Tânia Tomé
Geometry of fully coordinated, two-dimensional percolation 3670
E. Cuansing, J. H. Kim, and H. Nakanishi

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Energy distribution of the quantum harmonic oscillator under random time-dependent perturbations 3676
J. Garnier
Renormalization group for renormalization-group equations toward the universality classification of infinite-order phase transitions 3688
Chigak Itoi and Hisamitsu Mukaida
Structural relaxation in atomic clusters: Master equation dynamics 3701
Mark A. Miller, Jonathan P. K. Doye, and David J. Wales
Renormalization-group study of one-dimensional systems with roughening transitions 3719
G. Bianconi, M. A. Muñoz, A. Gabrielli, and L. Pietronero
Steady-state currents in sharp stochastic ratchets 3727
Małgorzata M. Kłosek and Robert W. Cox
Electromigration-induced soliton propagation on metal surfaces 3736
R. Mark Bradley
Black-eye patterns: A representation of three-dimensional symmetries in thin domains 3741
M. Gabriela M. Gomes
Critical-point finite-size scaling in the microcanonical ensemble 3748
A. D. Bruce and N. B. Wilding
Ground-state degeneracies of Ising spin glasses on diamond hierarchical lattices 3761
E. M. F. Curado, F. D. Nobre, and S. Coutinho
Asymmetry and direction reversal in fluctuation-induced biased Brownian motion 3771
Yi-der Chen, Bo Yan, and Robert Miura
Vortex dynamics in a three-state model under cyclic dominance 3776
György Szabó, M. A. Santos, and J. F. F. Mendes
Finite times to equipartition in the thermodynamic limit 3781
J. De Luca, A. J. Lichtenberg, and S. Ruffo
Stationary states of Toom cellular automata in simulations 3787
Danuta Makowiec
Reaction-controlled cooperative desorption in a one-dimensional lattice: A dynamical approach 3797
F. Baras, F. Vikas, and G. Nicolis
Self-similar renormalization approach to barrier crossing processes 3804
A. N. Drozdov and Shigeo Hayashi
Density dependence of vibrational energy relaxation rates in supercritical solution: A hydrodynamic model 3814
V. B. Nemtsov, I. I. Fedchenia, A. V. Kondratenko, and J. Schroeder
Critical behavior of the two-dimensional spin-diluted Ising model via the equilibrium ensemble approach 3823
Giorgio Mazzeo and Reimer Kühn
Dynamical universality classes of vapor deposition models with evaporation 3837
S. H. Yook and Yup Kim
Critical behavior of roughening transitions in parity-conserving growth processes 3842
Haye Hinrichsen and Géza Ódor
Magnetic critical behavior of two-dimensional random-bond Potts ferromagnets in confined geometries 3853
Christophe Chatelain and Bertrand Berche

Chaos and nonlinear dynamical systems

Chaotic dynamics in classical *s*-wave helium 3866
Zai-Qiao Bai and Yan Gu
Uncertain destination dynamics 3876
Hongyan Sun, Stephen K. Scott, and Kenneth Showalter,
Dynamical localization of ultracold sodium atoms 3881
C. F. Bharucha, J. C. Robinson, F. L. Moore, Bala Sundaram, Qian Niu, and M. G. Raizen

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 60, NUMBER 4** **OCTOBER 1999**

Chaos and reconnection in relativistic cyclotron motion in an elliptically polarized electric field 3896
Duck-Hee Kwon and Hai-Woong Lee
Boundedness of dynamical systems and chaos synchronization 3905
Elman Mohammed-Oglu Shahverdiev
Bifurcation to worms in electroconvection 3910
Urs Bisang and Guenter Ahlers
Homoclinic crossing in open systems: Chaos in periodically perturbed monopole plus quadrupolelike potentials 3920
P. S. Letelier and A. E. Motter
Amplification of weak signals and stochastic resonance via on-off intermittency with symmetry breaking 3928
Changsong Zhou and C.-H. Lai
Spectrum of stochastic evolution operators: Local matrix representation approach 3936
Predrag Cvitanović, Niels Søndergaard, Gergely Palla, Gábor Vattay, and C. P. Dettmann
Anderson localization in a string of microwave cavities 3942
C. Dembowski, H.-D. Gräf, R. Hofferbert, H. Rehfeld, A. Richter, and T. Weiland
Ergodic properties of a generic nonintegrable quantum many-body system in the thermodynamic limit 3949
Tomaž Prosen
Universality in quantum parametric correlations 3969
P. Lebœuf and M. Sieber
Symbolic dynamics analysis of nonstationary data from a model of a magnetic system with solitons 3973
T. Buchner and J. J. Żebrowski
Semiclassical treatment of diffraction in billiard systems with a flux line 3982
Martin Sieber
Classical diffusion and quantum level velocities: Systematic deviations from random matrix theory 3992
Arul Lakshminarayan, Nicholas R. Cerruti, and Steven Tomsovic
Coupled map car-following model and its delayed-feedback control 4000
Keiji Konishi, Hideki Kokame, and Kentaro Hirata
Phase space reconstruction using input-output time series data 4008
David M. Walker and Nicholas B. Tufillaro
Synchronization and resonance in a driven system of coupled oscillators 4014
H. Hong, M. Y. Choi, K. Park, B.-G. Yoon, and K.-S. Soh
Nonhyperbolic behavior in the thermostated Lorentz gas 4021
H. Odbadrakh and G. P. Morriss

Classical fluids

Filling transition for a wedge 4027
K. Rejmer, S. Dietrich, and M. Napiórkowski
Influence of compressibility on scaling regimes of strongly anisotropic fully developed turbulence 4043
N. V. Antonov, M. Hnatich, and M. Yu. Nalimov
Nonlinear viscosity and Grad's method 4052
F. J. Uribe and L. S. García-Colín
Burnett description for plane Poiseuille flow 4063
F. J. Uribe and Alejandro L. Garcia
Frequency-dependent viscosity of xenon near the critical point 4079
Robert F. Berg, Michael R. Moldover, and Gregory A. Zimmerli
Alternative optical equation for dielectric liquids 4099
Z. Niedrich
Relation of shear viscosity and self-diffusion coefficient for simple liquids 4105
Kyunil Rah and Byung Chan Eu

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Nonbound dislocations in hexagonal patterns: pentagon lines in surface-tension-driven Bénard convection 4117
Kerstin Eckert and André Thess
Relation between transport and thermodynamic properties in liquid *sp*-electron metals near freezing 4125
J. A. Alonso and N. H. March
Reciprocity and cross coupling of two-phase flow in porous media from Onsager theory 4130
Eirik G. Flekkøy and Steven R. Pride
Biasymptotic formula for the turbulent energy cascade 4138
R. Badii and P. Talkner
Wavy film flows down an inclined plane: Perturbation theory and general evolution equation for the film thickness 4143
A. L. Frenkel and K. Indireshkumar
Kinetic approach to the Gaussian thermostat in a dilute sheared gas in the thermodynamic limit 4158
R. van Zon
Universal long-time properties of Lagrangian statistics in the Batchelor regime and their application to the passive scalar problem 4164
E. Balkovsky and A. Fouxon
Temporal surrogates of spatial turbulent statistics: The Taylor hypothesis revisited 4175
Victor S. L'vov, Anna Pomyalov, and Itamar Procaccia
Structure function of passive scalars in two-dimensional turbulence 4185
Bruno Eckhardt and Jörg Schumacher
Patterns in small aspect ratio Bénard-Marangoni convection 4193
M. L. Ramón, D. Maza, and H. L. Mancini

PART B

Note to Reader i

Liquid crystals

Dynamics of chevron structure formation. II. Permeation-dominated phenomena 4199
A. N. Shalaginov, L. D. Hazelwood, and T. J. Sluckin
Interaction of spherical particles dispersed in a liquid crystal above the nematic-isotropic phase transition 4210
A. Borštnik, H. Stark, and S. Žumer
NMR spectra from Monte Carlo simulations of polymer dispersed liquid crystals 4219
C. Chiccoli, P. Pasini, G. Skačej, C. Zannoni, and S. Žumer
Mesoscopic model for the viscosities of nematic liquid crystals 4226
Agnieszka Chrzanowska, Martin Kröger, and Shaun Sellers
Molecular theory of Hex*B*-Sm*A*-isotropic transitions in ultrathin liquid crystal films 4235
Jue Shi, Long-pei Shi, and D. L. Lin

Complex fluids, polymers, and granular materials

Dynamics of water coning 4244
Jonn-Erik Farmen, Geri Wagner, Unni Oxaal, Paul Meakin, Jens Feder, and Torstein Jøssang
Growth of a single-domain smectic phase in a thin liquid-crystalline polymer film 4252
M. W. J. van der Wielen, M. A. Cohen Stuart, G. J. Fleer, A. R. Schlatmann, and D. K. G. de Boer
Statistical mechanics of charged polymers in electrolyte solutions: A lattice field theory approach 4257
Stefan Tsonchev, Rob D. Coalson, and Anthony Duncan
Metastable versus unstable transients at the onset of a shear-induced phase transition 4268
J.-F. Berret and G. Porte
Elongation of confined ferrofluid droplets under applied fields 4272
S. Banerjee, M. Fasnacht, S. Garoff, and M. Widom

(Continued)

PHYSICAL REVIEW E **THIRD SERIES, VOLUME 60, NUMBER 4** **OCTOBER 1999**

Orientational order in model dipolar fluids 4280
Philip J. Camp and G. N. Patey
Two-phase flow through porous media in the fixed-contact-line regime 4285
S. R. Pride and E. G. Flekkøy
Thermodynamics of a nonionic sponge phase 4300
T. D. Le, U. Olsson, H. Wennerström, and P. Schurtenberger
Monte Carlo simulation of submonolayer vapor-deposition polymerization 4310
Y.-P. Zhao, A. R. Hopper, G.-C. Wang, and T.-M. Lu
Surface hydrodynamics on a freely standing layer of a polymer solution 4319
M. Hernández-Contreras, M. W. Kim, and P. Pincus
Doppler shift anisotropy in small angle neutron scattering 4330
B. E. Wyslouzil, G. Wilemski, J. L. Cheung, R. Strey, and J. Barker
Orientation of particles in an electrorheological fluid under an electric field 4336
Yucheng Lan, Xiaoyu Xu, Shouqiang Men, and Kunquan Lu
Transport coefficients for granular media from molecular dynamics simulations 4340
C. Bizon, M. D. Shattuck, J. B. Swift, and Harry L. Swinney
Kinetic model of phase separation in binary mixtures with hard mobile impurities 4352
Valeriy V. Ginzburg, Gongwen Peng, Feng Qiu, David Jasnow, and Anna C. Balazs
Wetting of mesoscopic soft cylinders: Structure and layering transitions 4360
Heiko Ahrens, Norbert Hugenberg, Manfred Schmidt, and Christiane A. Helm
Lateral interactions of charges in thin liquid films and the Berezinskii-Kosterlitz-Thouless transition 4371
Konstantin Kornev
Tethered membranes far from equilibrium: Buckling dynamics 4377
Dorel Moldovan and Leonardo Golubovic
Statistics of shear-induced rearrangements in a two-dimensional model foam 4385
Shubha Tewari, Dylan Schiemann, Douglas J. Durian, Charles M. Knobler, Stephen A. Langer, and Andrea J. Liu
Phase separation of rigid-rod suspensions in shear flow 4397
Peter D. Olmsted and C.-Y. David Lu
Forces between like-charged plates in electrolyte solution: Ion-solvent packing versus electrostatic effects 4416
Frank Otto and G. N. Patey
Velocity-jump instabilities in Hele-Shaw flow of associating polymer solutions 4423
D. H. Vlad, Jordi Ignes-Mullol, and J. V. Maher
Electrostatics of a modulated membrane with specific adsorption 4431
O. Pecina and J. P. Badiali
Influence of temperature and pressure on dielectric relaxation in a supercooled epoxy resin 4444
S. Corezzi, P. A. Rolla, M. Paluch, J. Zioło, and D. Fioretto
Static light scattering measurements along a critical decomposition line of a ternary liquid mixture 4453
O. Müller and J. Winkelmann
Molecular weight effects on chain pull-out fracture of reinforced polymeric interfaces 4460
Mohsen Sabouri-Ghomi, Slava Ispolatov, and Martin Grant
Coefficient of restitution of colliding viscoelastic spheres 4465
Rosa Ramírez, Thorsten Pöschel, Nikolai V. Brilliantov, and Thomas Schwager
Small-angle x-ray scattering study of kinetics of spinodal decomposition in *N*-isopropylacrylamide gels 4473
Guangdong Liao, Yonglin Xie, Karl F. Ludwig, Jr., Rama Bansil, and Patrick Gallagher
Topological and spatial aspects of the hydration of solutes of extreme solvation entropy 4482
Dan L. Bergman, Alexander P. Lyubartsev, and Aatto Laaksonen
Attractive interactions between rodlike polyelectrolytes: Polarization, crystallization, and packing 4496
Francisco J. Solis and Monica Olvera de la Cruz

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Simple model for granular friction 4500
Hisao Hayakawa
Phase transitions in electrorheological fluids using molecular dynamics simulations 4505
Giovanni Lapenta, Giovanni Maizza, Antonio Palmieri, Gianmarco Boretto, and Massimo Debenedetti
Similarity of relaxation in supercooled liquids and interacting arrays of oscillators 4511
K. L. Ngai and Kwok Yeung Tsang
Linear viscoelasticity of an inverse ferrofluid 4518
B. J. de Gans, C. Blom, A. P. Philipse, and J. Mellema
Molecular dynamics study of replica symmetry in the vulcanization transition 4528
Sandra Barsky and Michael Plischke
A constitutive relation describing the shear-banding transition 4534
Jan K. G. Dhont
Effect of added copolymer on the critical properties of polymer mixtures 4545
M. D. Dadmun and Dean Waldow
Geometrical characterization of hard-sphere systems 4551
Patrick Richard, Luc Oger, Jean-Paul Troadec, and Annie Gervois

Biological physics

Mesostructure of polymer collapse and fractal smoothing 4559
G. E. Crooks, B. Ostrovsky, and Y. Bar-Yam
Rate coding in a chain of pulse-coupled oscillators 4564
Takanobu Yamanobe, K. Pakdaman, and Shunsuke Sato
Noise-induced breakdown of coherent collective motion in swarms 4571
Alexander S. Mikhailov and Damián H. Zanette
Information theoretical approach to the storage capacity of neural networks with binary weights 4576
Hiroki Suyari and Ikuo Matsuba
Categorization in the symmetrically dilute Hopfield network 4580
P. R. Krebs and W. K. Theumann
Turing patterns on a sphere 4588
C. Varea, J. L. Aragón, and R. A. Barrio
Universal low-frequency vibrations of proteins from a simple interaction potential 4593
M. Nöllmann and P. Etchegoin
Salt-induced liquid-liquid phase separation of protein-surfactant complexes 4597
Janaky Narayanan and Vinod W. Deotare
Avalanche of bifurcations and hysteresis in a model of cellular differentiation 4604
Gábor Fáth and Zbigniew Domański
Modulated phases in multicomponent fluid membranes 4610
P. B. Sunil Kumar, G. Gompper, and R. Lipowsky
Curvature effects on activation speed and repolarization in an ionic model of cardiac myocytes 4619
P. Comtois and A. Vinet
Protein ground state candidates in a simple model: An enumeration study 4629
V. Shahrezaei, N. Hamedani, and M. R. Ejtehadi
Mechanism of stochastic resonance enhancement in neuronal models driven by $1/f$ noise 4637
Daichi Nozaki, James J. Collins, and Yoshiharu Yamamoto
Nucleation theory for helix unfolding in peptide chains 4645
Ariel Fernández and Andrés Colubri
Statistical mechanics of protein sequences 4652
T. Gregory Dewey

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Scaling behavior in crackle sound during lung inflation 4659
Adriano M. Alencar, Zoltán Hantos, Ferenc Peták, József Tolnai, Tibor Asztalos, Stefano Zapperi, José S. Andrade, Jr., Sergey V. Buldyrev, H. Eugene Stanley, and Béla Suki
Origin of the low-frequency modes of globular proteins 4664
Simone Melchionna and Alessandro Desideri
Equilibrium and dynamical properties of semiflexible chain molecules with confined transverse fluctuations 4671
Ludger Harnau and Peter Reineker
Dielectric dispersion of biological matter: Model combining Debye-type and ''universal'' responses 4677
Valerică Raicu
Effects of nonequilibrium fluctuations on ionic transport through biomembranes 4681
Kwonmoo Lee and W. Sung
Statistical analysis of stochastic resonance in a simple setting 4687
Priscilla E. Greenwood, Lawrence M. Ward, and Wolfgang Wefelmeyer
Origin of the designability of protein structures 4696
Rie Tatsumi and George Chikenji

Plasma physics

Resistivity-independent dissipation of magnetohydrodynamic waves in an inhomogeneous plasma 4701
F. Califano and C. Chiuderi
Shielding and charging of dust particles in the plasma sheath 4708
S. Benkadda, V. N. Tsytovich, and S. V. Vladimirov
Heavy-ion-beam–induced hydrodynamic effects in solid targets 4715
N. A. Tahir, D. H. H. Hoffmann, J. A. Maruhn, P. Spiller, and R. Bock
Quantum kinetic theory of plasmas in strong laser fields 4725
D. Kremp, Th. Bornath, M. Bonitz, and M. Schlanges
Plasma-wall boundary layers 4733
V. Baritello, F. Porcelli, and F. Subba
Packings and defects of strongly coupled two-dimensional Coulomb clusters: Numerical simulation 4743
Ying-Ju Lai and Lin I
Relativistic plasma viscosity of the Burnett kind 4754
V. S. Tsypin, R. M. O. Galvão, I. C. Nascimento, N. L. Tsintsadze, L. N. Tsintsadze, M. Tendler, and J. P. Neto
Experimental and simulated neon spectra in the 10-nm wavelength region from tokamak and reversed field pinch plasmas 4760
M. Mattioli, K. B. Fournier, L. Carraro, C. DeMichelis, P. Monier-Garbet, M. E. Puiatti, F. Sattin, P. Scarin, and M. Valisa
Anomalous diffusion in a running sandpile model 4770
B. A. Carreras, V. E. Lynch, D. E. Newman, and G. M. Zaslavsky

Physics of beams

Analysis of Gaussian beam and Bessel beam driven laser accelerators 4779
B. Hafizi, A. K. Ganguly, A. Ting, C. I. Moore, and P. Sprangle
Maps for distributions and their time evolution 4793
Étienne Forest and David S. Robin
Linear theory of multistage forward-wave amplifiers 4811
G. S. Nusinovich and M. Walter
Relaxation oscillations of the synchrotron motion caused by narrow-band impedances 4823
C. Limborg and J. Sebek

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Classical physics, including nonlinear media

Coupled-field description of zero-average dispersion management 4836
C. Paré, V. Roy, F. Lesage, P. Mathieu, and P.-A. Bélanger
Wave transport in random media: The ballistic to diffusive transition 4843
Z. Q. Zhang, I. P. Jones, H. P. Schriemer, J. H. Page, D. A. Weitz, and Ping Sheng
Sound propagation in urban areas: A periodic disposition of buildings 4851
J. Picaut, J. Hardy, and L. Simon
Switching of electromagnetic waves by two-layered periodic dielectric structures 4860
Gregory V. Morozov, Roman Gr. Maev, and G. W. F. Drake
Soliton generation in optical fibers for a dual-frequency input 4868
N.-C. Panoiu, I. V. Mel'nikov, D. Mihalache, C. Etrich, and F. Lederer
Collapse arresting in an inhomogeneous quintic nonlinear Schrödinger model 4877
Yu. B. Gaididei, J. Schjødt-Eriksen, and P. L. Christiansen
Dispersive properties of finite, one-dimensional photonic band gap structures: Applications to nonlinear quadratic interactions 4891
M. Centini, C. Sibilia, M. Scalora, G. D'Aguanno, M. Bertolotti, M. J. Bloemer, C. M. Bowden, and I. Nefedov
Radiative transfer in chiral random media 4899
Alexander A. Kokhanovsky
Scattering of dislocated wave fronts by vertical vorticity and the Aharonov-Bohm effect. I. Shallow water 4908
Christophe Coste, Fernando Lund, and Makoto Umeki
Scattering of dislocated wave fronts by vertical vorticity and the Aharonov-Bohm effect. II. Dispersive waves 4917
Christophe Coste and Fernando Lund

Computational physics

Extension of the mapped Fourier method to time-dependent problems 4926
Ulrich Kleinekathöfer and David J. Tannor
Evolving three-dimensional cellular automata to perform a quasiperiod-3 collective behavior task 4934
Francisco Jiménez-Morales
Active clusters in disordered systems 4941
S. Bastea and P. M. Duxbury

BRIEF REPORTS

General methods of statistical physics

Reversible fluctuation rectifier 4946
I. M. Sokolov
Canonical phase-space approach to the noisy Burgers equation 4950
Hans C. Fogedby
Thermal noise can facilitate energy conversion by a ratchet system 4954
Fumiko Takagi and Tsuyoshi Hondou
Nonuniform reaction rate distribution for the generalized Fisher equation: Ignition ahead of the reaction front 4958
Sergei Fedotov

Chaos and nonlinear dynamical systems

Effects of time-delayed interactions on dynamic patterns in a coupled phase oscillator system 4962
Seon Hee Park, Seunghwan Kim, Hyeon-Bong Pyo, and Sooyeul Lee

(Continued)

PHYSICAL REVIEW E THIRD SERIES, VOLUME 60, NUMBER 4 OCTOBER 1999

Synchronization and coherence in thermodynamic coupled map lattices with intermediate-range coupling 4966
Prashant M. Gade and Chin-Kun Hu
Improved false nearest neighbor method to detect determinism in time series data 4970
Rainer Hegger and Holger Kantz

Classical fluids

Flow of a vortex-pair street and the evolution of salt fingers 4974
Hie-Tae Moon
Diameters of vortex spirals in three-dimensional turbulence 4978
H. O. Rasmussen

Liquid crystals

Pretransitional behavior above the nematic-isotropic phase transition of an auxetic trimer liquid crystal 4980
Daeseung Kang, Milind P. Mahajan, Shiyong Zhang, Rolfe G. Petschek, Charles Rosenblatt, Chaobin He, Puwei Liu, and A. C. Griffin

Complex fluids, polymers, and granular materials

Classical-nonclassical crossover behavior of critical and noncritical liquid binary solutions in a strong electric field 4983
Jerzy Zioło and Sylwester J. Rzoska
Stochastic hierarchical model for cluster-cluster aggregation 4986
R. E. Amritkar

Plasma physics

Ionization, electron attachment, and drift in CHF_3 4990
J. de Urquijo, I. Alvarez, and C. Cisneros

ERRATA

Erratum: Multifractal analysis of the atomic spectral line series [Phys. Rev. E **54**, 2431 (1996)] 4993
Andrés Sáiz and Vicent J. Martínez
Erratum: Hydrodynamic interactions between two spheres at contact [Phys. Rev. E **59**, 3182 (1999)] 4994
M. L. Ekiel-Jeżewska, F. Feuillebois, N. Lecoq, K. Masmoudi, R. Anthore, F. Bostel, and E. Wajnryb
Erratum: Directed percolation depinning models: Evolution equations [Phys. Rev. E **59**, 4243 (1999)] 4994
Lidia A. Braunstein, R. C. Buceta, N. Giovambattista, and A. Diaz-Sánchez
Erratum: Analytical approach to time lag in binary nucleation [Phys. Rev. E **59**, 5124 (1999)] 4995
P. Demo, Z. Kožíšek, and R. Šášik

Cumulative Author Index 4996