

Comment on “Highly nonlinear, sign-varying shift of hydrogen spectral lines in dense plasmas” (2 pages)	058401
Hans R. Griem	

ERRATA

Erratum: Superballistic spreading of wave packets [Phys. Rev. E 64 , 012301 (2001)] (1 page)	059901(E)
L. Hufnagel, R. Ketzmerick, T. Kottos, and T. Geisel	
Erratum: Reunion of random walkers with a long range interaction: Applications to polymers and quantum mechanics [Phys. Rev. E 63 , 051103 (2001)] (1 page)	059902(E)
Sutapa Mukherji and Somendra M. Bhattacharjee	
Erratum: Rarefaction shock wave: Formation under short-pulse laser ablation of solids [Phys. Rev. E 63 , 046311 (2001)] (1 page)	059903(E)
Nadezhda M. Bulgakova, Igor. M. Bourakov, and Natalia A. Bulgakova	

Cumulative Author Index	i
--------------------------------------	---

BRIEF REPORTS**General methods of statistical physics**

Time-scale invariance of relaxation processes of density fluctuation in slow neutron scattering in liquid cesium (4 pages)	057101
R. M. Yulmetyev, A. V. Mokshin, P. Hänggi, and V. Yu. Shurygin	
Free energy fluctuations for bimodal directed polymers in 1 + 1 dimensions (4 pages)	057102
Xiao-Hong Wang	
Magnetic order in the Ising model with parallel dynamics (4 pages)	057103
Emilio N. M. Cirillo, Francesca R. Nardi, and Antonio D. Polosa	
Ising model on a small world network (4 pages)	057104
Andrzej Pękalski	
Scaling of random spreading in small world networks (3 pages)	057105
Jani Lahtinen, János Kertész, and Kimmo Kaski	
Mean-field theory for car accidents (4 pages)	057106
Ding-wei Huang and Wei-chung Tseng	

Nonlinear hydrodynamics and turbulence

Heuristic model for the energy spectrum of phase turbulence (4 pages)	057301
J. T. N. Medeiros and A. S. da Rosa Simões	

Plasma physics

Femtosecond laser-guided electric discharge in air (4 pages)	057401
S. Tzortzakis, B. Prade, M. Franco, A. Mysyrowicz, S. Hüller, and P. Mora	
Thermodynamic functions of harmonic Coulomb crystals (4 pages)	057402
D. A. Baiko, A. Y. Potekhin, and D. G. Yakovlev	

Classical physics, including nonlinear media and photonic materials

Dynamics of localized and nonlocalized optical vortex solitons in cubic-quintic nonlinear media (4 pages) . .	057601
V. I. Berezghiani, V. Skarka, and N. B. Aleksić	

COMMENTS

Comment on “Critical behavior of a two-species reaction-diffusion problem” (3 pages)	058101
Hans-Karl Janssen	
Reply to “Comment on ‘Critical behavior of a two-species reaction-diffusion problem’ ” (2 pages)	058102
J. E. de Freitas, L. S. Lucena, L. R. da Silva, and H. J. Hilhorst	
Comment on “Simple approach to the creation of a strange nonchaotic attractor in any chaotic system” (5 pages)	058201
Eireen Neumann and Arkady Pikovsky	
Reply to “Comment on ‘Simple approach to the creation of a strange nonchaotic attractor in any chaotic system’ ” (2 pages)	058202
J. W. Shuai and K. W. Wong	
Comment on “Intermittency in chaotic rotations” (3 pages)	058203
Arkady Pikovsky and Michael Rosenblum	
Reply to “Comment on ‘Intermittency in chaotic rotations’ ” (3 pages)	058204
Ying-Cheng Lai, Dieter Armbruster, and Eric J. Kostelich	

Adiabatic interaction of N ultrashort solitons: Universality of the complex Toda chain model (15 pages)	056617
V. S. Gerdjikov, E. V. Doktorov, and J. Yang	
Perturbation theory for domain walls in the parametric Ginzburg-Landau equation (9 pages)	056618
D. V. Skryabin, A. Yulin, D. Michaelis, W. J. Firth, G.-L. Oppo, U. Peschel, and F. Lederer	
Nonlinear modulation of multidimensional lattice waves (10 pages)	056619
Guoxiang Huang, Vladimir V. Konotop, Hon-Wah Tam, and Bambi Hu	
Propagation of wave packets in randomly stratified media (9 pages)	056620
V. D. Freilikher and Yu. V. Tarasov	
Rotating annulus experiment: Large-scale helical soliton in the atmosphere? (8 pages)	056621
Zhao Songnian, Xiong Xiaoyun, Hu Fei, and Zhu Jiang	
Asynchronous development of the Benjamin-Feir unstable mode: Solution of the Davey-Stewartson equation (7 pages)	056622
Masayoshi Tajiri, Kiyohiro Takeuchi, and Takahito Arai	
Resolvent method for computations of localized defect modes of H-polarization in two-dimensional photonic crystals (16 pages)	056623
Alexander Figotin and Vladimir Goren	
Heterogeneous versus discrete mapping problem (8 pages)	056624
P. G. Kevrekidis and I. G. Kevrekidis	
Wave propagation in media having negative permittivity and permeability (15 pages)	056625
Richard W. Ziolkowski and Ehud Heyman	
Computational physics	
Numerically complemented analytic method for solving the time-independent one-dimensional Schrödinger equation (12 pages)	056701
M. Selg	
Probability tree algorithm for general diffusion processes (6 pages)	056702
Lester Ingber, Colleen Chen, Radu Paul Mondescu, David Muzzall, and Marco Renedo	
Rossby vortex simulation on a paraboloidal coordinate system using the lattice Boltzmann method (6 pages)	056703
Huidan Yu and Kaihua Zhao	
Hierarchical approach for computing spin glass ground states (7 pages)	056704
J. Houdayer and Olivier C. Martin	
Semiclassical quantization by harmonic inversion: Comparison of algorithms (6 pages)	056705
Thomas Bartsch, Jörg Main, and Günter Wunner	
Evaluation of atomic integrals for hybrid Gaussian type and plane-wave basis functions via the McMurchie-Davidson recursion formula (4 pages)	056706
Masanori Tachikawa and Motoyuki Shiga	
Structure determination of organic molecules from diffraction data by simulated annealing (6 pages)	056707
Hsiao-Ping Hsu, Ulrich H. E. Hansmann, and Simon C. Lin	

Direct observation of the ponderomotive force effects in short-scale-length laser plasmas by frequency-domain interferometry (5 pages)	056412
P. Audebert, J.-P. Geindre, S. Rebibo, and J.-C. Gauthier	
Physics of beams	
Radiation damping in real time (11 pages)	056501
A. C. R. Mendes and F. I. Takakura	
Quantum effects in high-gain free-electron lasers (10 pages)	056502
C. B. Schroeder, C. Pellegrini, and P. Chen	
Wake field of an electron bunch moving parallel to a dielectric cylinder (8 pages)	056503
D. Schieber and L. Schächter	
Classical physics, including nonlinear media and photonic materials	
Generation of higher-order optical (2 + 1)-dimensional spatial vector solitons in a nonlinear anisotropic medium (7 pages)	056601
Carsten Weilnau, Cornelia Denz, Marcus Ahles, Andreas Stepken, Kristian Motzek, and Friedemann Kaiser	
Construction of exact solutions by spatial translations in inhomogeneous nonlinear Schrödinger equations (6 pages)	056602
Juan J. García-Ripoll, Víctor M. Pérez-García, and Vadym Vekslerchik	
Incoherently coupled steady-state soliton pairs in biased photorefractive-photovoltaic materials (9 pages)	056603
Lu Keqing, Zhang Yanpeng, Tang Tiantong, and Li Bo	
Optical pulse propagation in nonlinear photonic crystals (16 pages)	056604
N. A. R. Bhat and J. E. Sipe	
Solitary wave dynamics in generalized Hertz chains: An improved solution of the equation of motion (4 pages)	056605
Surajit Sen and Marian Manciu	
Pattern formation and localization in the forced-damped Fermi-Pasta-Ulam lattice (8 pages)	056606
Ramaz Khomeriki, Stefano Lepri, and Stefano Ruffo	
Acoustic pulse propagation and localization in bubbly water (9 pages)	056607
Kang-xin Wang and Zhen Ye	
Nonequivalence of phonon modes in the sine-Gordon equation (4 pages)	056608
Niurka R. Quintero and Panayotis G. Kevrekidis	
Electromagnetic properties of the linear oscillating currents flowing through toroidal knots (5 pages)	056609
E. E. Radescu and G. Vaman	
Stability and formation of localized surface waves at the dielectric—photorefractive crystal boundary (11 pages)	056610
Victor Aleshkevich, Yaroslav Kartashov, Alexey Egorov, and Victor Vysloukh	
Microwave magnetoelectric particles: An experimental study of oscillating spectrums (9 pages)	056611
Arun Kumar Saha, Eugene O. Kamenetskii, and Ikuo Awai	
Nonlinear dynamics of higher-order solitons near the oscillatory instability threshold (11 pages)	056612
Kazimir Y. Kolossovski, Alexander V. Buryak, Dmitry V. Skryabin, and Rowland A. Sammut	
Fractal structures and multiparticle effects in soliton scattering (4 pages)	056613
Sergey V. Dmitriev, Yuri S. Kivshar, and Takeshi Shigenari	
Transverse magnetic defect modes in two-dimensional triangular-lattice photonic crystals (7 pages)	056614
N. Stojić, J. Glimm, Y. Deng, and J. W. Haus	
Stability of attractive Bose-Einstein condensates in a periodic potential (9 pages)	056615
J. C. Bronski, L. D. Carr, R. Carretero-González, B. Deconinck, J. N. Kutz, and K. Promislow	
Complexity and regularity of vector-soliton collisions (17 pages)	056616
Yu Tan and Jianke Yang	

Decoherence in a classically chaotic quantum system: Entropy production and quantum-classical correspondence (<i>13 pages</i>)	056238
Diana Monteoliva and Juan Pablo Paz	
Information circulation in a two-mode solid-state laser with optical feedback (<i>6 pages</i>)	056239
Kenju Otsuka, Jing-Yuan Ko, Takayuki Ohtomo, and Kazuyoshi Ohki	
Energy fluctuations of pseudointegrable systems with growing surface roughness (<i>6 pages</i>)	056240
Stefanie Russ	
Nonlinear hydrodynamics and turbulence	
Turbulence of polymer solutions (<i>14 pages</i>)	056301
E. Balkovsky, A. Fouxon, and V. Lebedev	
Dynamical equations for high-order structure functions, and a comparison of a mean-field theory with experiments in three-dimensional turbulence (<i>14 pages</i>)	056302
Susan Kurien and Katepalli R. Sreenivasan	
Evolution of triangles in a two-dimensional turbulent flow (<i>11 pages</i>)	056303
Patrizia Castiglione and Alain Pumir	
Self-similar fluctuation and large deviation statistics in the shell model of turbulence (<i>13 pages</i>)	056304
Yasuya Nakayama, Takeshi Watanabe, and Hirokazu Fujisaka	
Advective transport in the percolation backbone in two dimensions (<i>4 pages</i>)	056305
Jean-Raynald de Dreuzy, Philippe Davy, and Brian Berkowitz	
Calculation of the anomalous exponents in the rapid-change model of passive scalar advection to order ε^3 (<i>28 pages</i>)	056306
L. Ts. Adzhemyan, N. V. Antonov, V. A. Barinov, Yu. S. Kabrits, and A. N. Vasil'ev	
Nonlinear turbulent magnetic diffusion and mean-field dynamo (<i>14 pages</i>)	056307
Igor Rogachevskii and Nathan Kleeorin	
Plasma physics	
Theoretical study of opacity for a mixture of gold and gadolinium at a high temperature (<i>5 pages</i>)	056401
Jun Yan and Yu-Bo Qiu	
Plasma hydrodynamics of the intense laser-cluster interaction (<i>7 pages</i>)	056402
H. M. Milchberg, S. J. McNaught, and E. Parra	
Electrical conductivity measurements of strongly coupled W plasmas (<i>6 pages</i>)	056403
S. Saleem, J. Haun, and H.-J. Kunze	
Canonical Hamiltonian gyrocenter variables and gauge invariant representation of the gyrokinetic equation (<i>14 pages</i>)	056404
Shaojie Wang	
Inverse cascade in decaying three-dimensional magnetohydrodynamic turbulence (<i>6 pages</i>)	056405
Mattias Christensson, Mark Hindmarsh, and Axel Brandenburg	
Transparency of an overdense plasma layer (<i>6 pages</i>)	056406
Baifei Shen and Zhizhan Xu	
Positively charged particles in dusty plasmas (<i>8 pages</i>)	056407
A. A. Samarian, O. S. Vulina, A. P. Nefedov, V. E. Fortov, B. W. James, and O. F. Petrov	
Stochastic growth of ion cyclotron and mirror waves in Earth's magnetosheath (<i>4 pages</i>)	056408
Iver H. Cairns and K. A. Grubits	
Mass effects of light ion swarms in ac electric fields (<i>10 pages</i>)	056409
R. D. White	
Dynamic structure factor for a two-component model plasma (<i>10 pages</i>)	056410
A. Selchow, G. Röpke, A. Wierling, H. Reinholz, T. Pschiwul, and G. Zwicknagel	
Stochastic magnetohydrodynamic turbulence in space dimensions $d \geq 2$ (<i>11 pages</i>)	056411
M. Hnatich, J. Honkonen, and M. Jucisin	

Variational approach to a class of nonlinear oscillators with several limit cycles (6 pages)	056217
M. C. Depassier and J. Mura	
Transition from oscillatory to excitable regime in a system forced at three times its natural frequency (9 pages)	056218
Rafael Gallego, Daniel Walgraef, Maxi San Miguel, and Raúl Toral	
Numerical analysis of spectra of the Frobenius-Perron operator of a noisy one-dimensional mapping: Toward a theory of stochastic bifurcations (7 pages)	056219
Junko Inoue, Shinji Doi, and Sadatoshi Kumagai	
Transforming chaos to periodic oscillations (8 pages)	056220
G. Kociuba, N. R. Heckenberg, and A. G. White	
Effect of evanescent modes and chaos on deterministic scattering in electron waveguides (10 pages)	056221
G. Akguc and L. E. Reichl	
Parameter estimation in spatially extended systems: The Karhunen-Lóeve and Galerkin multiple shooting approach (8 pages)	056222
Anandamohan Ghosh, V. Ravi Kumar, and B. D. Kulkarni	
Semiclassical quantization of strongly chaotic vibrations in an M_7 -like cluster (15 pages)	056223
Atsuko Inoue-Ushiyama and Kazuo Takatsuka	
Modeling of an impact system with a drift (9 pages)	056224
Ekaterina Pavlovskaja, Marian Wiercigroch, and Celso Grebogi	
Periodic forcing in viscous fingering of a nematic liquid crystal (9 pages)	056225
R. Folch, T. Tóth-Katona, A. Buka, J. Casademunt, and A. Hernández-Machado	
Delocalization border and onset of chaos in a model of quantum computation (14 pages)	056226
G. P. Berman, F. Borgonovi, F. M. Izrailev, and V. I. Tsifrinovich	
Effective coupling for open billiards (7 pages)	056227
Konstantin Pichugin, Holger Schanz, and Petr Seba	
Catastrophic bifurcation from riddled to fractal basins (16 pages)	056228
Ying-Cheng Lai and Victor Andrade	
Breathing current domains in globally coupled electrochemical systems: A comparison with a semiconductor model (12 pages)	056229
F. Plenge, P. Rodin, E. Schöll, and K. Krischer	
Energetics of interacting magnetized domains (4 pages)	056230
David P. Jackson and Brennan Gantner	
Phase-locked spatial domains and Bloch domain walls in type-II optical parametric oscillators (15 pages) . . .	056231
Gonzalo Izús, Maxi San Miguel, and Marco Santagiustina	
Liouvillian dynamics of the Hopf bifurcation (17 pages)	056232
P. Gaspard and S. Tasaki	
Approaching classicality in quantum accelerator modes through decoherence (15 pages)	056233
M. B. d'Arcy, R. M. Godun, M. K. Oberthaler, G. S. Summy, K. Burnett, and S. A. Gardiner	
Phase synchronization of chaotic systems with small phase diffusion (10 pages)	056234
Krešimir Josić and Douglas J. Mar	
Symmetry-increasing bifurcation as a predictor of a chaos-hyperchaos transition in coupled systems (5 pages)	056235
S. Yanchuk and T. Kapitaniak	
Dynamical mechanisms of dc current generation in driven Hamiltonian systems (4 pages)	056236
S. Denisov and S. Flach	
Electronic states in a cylindrical quantum lens: Quantum chaos for decreasing system symmetry (7 pages)	056237
C. Trallero-Herrero, C. Trallero-Giner, S. E. Ulloa, and R. Perez-Alvarez	

Non-Gaussian equilibrium in a long-range Hamiltonian system (5 pages)	056134
Vito Latora, Andrea Rapisarda, and Constantino Tsallis	
XY model in small-world networks (5 pages)	056135
Beom Jun Kim, H. Hong, Petter Holme, Gun Sang Jeon, Petter Minnhagen, and M. Y. Choi	
Mean-field approximation for a limit order driven market model (5 pages)	056136
František Slanina	
Near-critical confined fluids and Ising films: Density-matrix renormalization-group study (13 pages)	056137
A. Maciołek, A. Drzewiński, and R. Evans	
Continuum time limit and stationary states of the minority game (12 pages)	056138
Matteo Marsili and Damien Challet	
Kinetics of phase separation in ternary mixtures (10 pages)	056139
Kumela Tafa, Sanjay Puri, and Deepak Kumar	
Nonequilibrium dynamics in the complex Ginzburg-Landau equation (5 pages)	056140
Sanjay Puri, Subir K. Das, and M. C. Cross	
Chaos and pattern formation	
Continuous model for vocal fold oscillations to study the effect of feedback (7 pages)	056201
Rodrigo Laje, Tim Gardner, and G. B. Mindlin	
Two-dimensional model of a reaction-diffusion system as a typewriter (4 pages)	056202
Andrzej L. Kawczyński and Bartłomiej Legawiec	
Interplays between Harper and Mathieu equations (9 pages)	056203
E. Papp and C. Micu	
Unnested islands of period doublings in an injected semiconductor laser (9 pages)	056204
Sebastian Wiczorek, Bernd Krauskopf, and Daan Lenstra	
Angular transport in a nonperiodic Chirikov-Taylor map (11 pages)	056205
D. Lesnik and K. H. Spatschek	
Limitation on stabilizing plane waves via time-delay feedback (6 pages)	056206
Ilan Harrington and Joshua E. S. Socolar	
Analyses of transient chaotic time series (9 pages)	056207
Mukeshwar Dhamala, Ying-Cheng Lai, and Eric J. Kostelich	
Wave function statistics for ballistic quantum transport through chaotic open billiards: Statistical crossover and coexistence of regular and chaotic waves (12 pages)	056208
Hiromu Ishio, Alexander I. Saichev, Almas F. Sadreev, and Karl-Fredrik Berggren	
Chaos and the continuum limit in the gravitational N -body problem: Integrable potentials (11 pages)	056209
Henry E. Kandrup and Ioannis V. Sideris	
Selective communication and information processing by excitable systems (8 pages)	056210
V. B. Kazantsev	
Nonhyperbolic escape and changes in phase-space stability structures in laser-induced multiphoton dissociation of a diatomic molecule (6 pages)	056211
Vassilios Constantoudis and Cleanthes A. Nicolaides	
Control of hyperchaos (4 pages)	056212
Shouliang Bu, Shaoqing Wang, and Hengqiang Ye	
Stability of Turing patterns in the Brusselator model (9 pages)	056213
B. Peña and C. Pérez-García	
Whispering gallery modes in open quantum billiards (5 pages)	056214
R. G. Nazmitdinov, K. N. Pichugin, I. Rotter, and P. Seba	
Classical nonlinearity and quantum decay: The effect of classical phase-space structures (11 pages)	056215
Yosef Ashkenazy, Luca Bonci, Jacob Levitan, and Roberto Roncaglia	
Reconstruction of time-delay systems from chaotic time series (6 pages)	056216
B. P. Bezruchko, A. S. Karavaev, V. I. Ponomarenko, and M. D. Prokhorov	

Thermal conduction in a chain of colliding harmonic oscillators revisited (9 pages)	056111
Mitsusada M. Sano and Kazuo Kitahara	
Flat histogram simulation of lattice polymer systems (7 pages)	056112
Lik Wee Lee and Jian-Sheng Wang	
Macroscopic equations for pattern formation in mixtures of microtubules and molecular motors (8 pages) . . .	056113
Ha Youn Lee and Mehran Kardar	
Cluster size distributions in particle systems with asymmetric dynamics (8 pages)	056114
O. Pulkkinen and J. Merikoski	
Statistical and dynamical study of disease propagation in a small world network (6 pages)	056115
Nouredine Zekri and Jean Pierre Clerc	
Exactly solvable models through the empty-interval method (6 pages)	056116
M. Alimohammadi, M. Khorrami, and A. Aghamohammadi	
Breakdown of the Landauer bound for information erasure in the quantum regime (9 pages)	056117
A. E. Allahverdyan and Th. M. Nieuwenhuizen	
Percolation and jamming in random bond deposition (4 pages)	056118
Grzegorz Kondrat and Andrzej Pękalowski	
Atomic motion in magneto-optical double-well potentials: A testing ground for quantum chaos (8 pages)	056119
Shohini Ghose, Paul M. Alsing, and Ivan H. Deutsch	
Quantum criticality for few-body systems: Path-integral approach (6 pages)	056120
Ricardo A. Sauerwein and Sabre Kais	
Energies and collapse times of symmetric and symmetry-breaking states of finite systems with a U(1) symmetry (4 pages)	056121
Akira Shimizu and Takayuki Miyadera	
Random-bond Potts model in the large- q limit (7 pages)	056122
Róbert Juhász, Heiko Rieger, and Ferenc Igloi	
Criticality in a dynamic mixed system (10 pages)	056123
M. G. Shnirman and E. M. Blanter	
Dynamics of spiral waves under the modulation of noise pulses (5 pages)	056124
Zhenming Zhu and Houwin Xin	
Non-Hamiltonian equations of motion with a conserved energy (9 pages)	056125
Alessandro Sergi and Mauro Ferrario	
Macroscopic traffic models from microscopic car-following models (12 pages)	056126
H. K. Lee, H.-W. Lee, and D. Kim	
Dynamic constitutive relations for polarization and magnetization (14 pages)	056127
James Baker-Jarvis and Pavel Kabos	
Reparametrization-covariant theory for on-line learning of probability distributions (6 pages)	056128
Toshiaki Aida	
Thermodynamic entropy production fluctuation in a two-dimensional shear flow model (9 pages)	056129
F. Bonetto and J. L. Lebowitz	
Quantum thermodynamic cooling cycle (8 pages)	056130
José P. Palao, Ronnie Kosloff, and Jeffrey M. Gordon	
Adaptive and self-averaging Thouless-Anderson-Palmer mean-field theory for probabilistic modeling (14 pages)	056131
Manfred Opper and Ole Winther	
Optimizing traffic lights in a cellular automaton model for city traffic (12 pages)	056132
Elmar Brockfeld, Robert Barlovic, Andreas Schadschneider, and Michael Schreckenberg	
Origin of scaling structure and non-Gaussian velocity distribution in a self-gravitating ring model (14 pages)	056133
Yasuhide Sota, Osamu Iguchi, Masahiro Morikawa, Takayuki Tatekawa, and Kei-ichi Maeda	

Chaos and pattern formation

Mandelbrot set in coupled logistic maps and in an electronic experiment (4 pages)	055201(R)
Olga B. Isaeva, Sergey P. Kuznetsov, and Vladimir I. Ponomarenko	
Spatiotemporal patterns in CO oxidation on Pt(110): The role of nonlinear diffusion (4 pages)	055202(R)
J. Verdasca, P. Borckmans, and G. Dewel	
Golden rule decay versus Lyapunov decay of the quantum Loschmidt echo (4 pages)	055203(R)
Ph. Jacquod, P.G. Silvestrov, and C.W.J. Beenakker	
Synchronization using dynamic coupling (4 pages)	055204(R)
Lutz Junge and Ulrich Parlitz	
Relaxation, the Boltzmann-Jeans conjecture, and chaos (4 pages)	055205(R)
Naoko Nakagawa and Kunihiro Kaneko	
Comparison of averages of flows and maps (4 pages)	055206(R)
Z. Kaufmann and H. Lustfeld	

Classical physics, including nonlinear media and photonic materials

Energy of internal modes of nonlinear waves and complex frequencies due to symmetry breaking (4 pages)	055601(R)
Dmitry V. Skryabin	
Superluminal optical pulse propagation at 1.5 μm in periodic fiber Bragg gratings (4 pages)	055602(R)
S. Longhi, M. Marano, P. Laporta, and M. Belmonte	
Ministop bands in single-defect photonic crystal waveguides (4 pages)	055603(R)
Mario Agio and Costas M. Soukoulis	

REGULAR ARTICLES**General methods of statistical physics**

Determining the density of states for classical statistical models: A random walk algorithm to produce a flat histogram (16 pages)	056101
Fugao Wang and D. P. Landau	
Monomer-dimer reaction model with asymmetric adsorption of monomer and dimer on the catalyst surface (4 pages)	056102
Da-yin Hua and Yu-qiang Ma	
Phase transitions in systems with $1/r^\alpha$ attractive interactions (6 pages)	056103
I. Ispolatov and E. G. D. Cohen	
Critical behavior of a one-dimensional fixed-energy stochastic sandpile (7 pages)	056104
Ronald Dickman, Mikko Alava, Miguel A. Muñoz, Jarkko Peltola, Alessandro Vespignani, and Stefano Zapperi	
Conductivity of continuum percolating systems (14 pages)	056105
Olaf Stenull and Hans-Karl Janssen	
Multibaker map for shear flow and viscous heating (11 pages)	056106
László Mátyás, Tamás Tél, and Jürgen Vollmer	
Number of times a site is visited in two-dimensional random walks (5 pages)	056107
M. Ferraro and L. Zaninetti	
Elastic properties of Sierpinski-like carpets: Finite-element-based simulation (10 pages)	056108
V. G. Oshmyan, S. A. Patlazhan, and S. A. Timan	
Constructing, characterizing, and simulating Gaussian and higher-order point distributions (17 pages)	056109
Martin Kerscher	
Instability of Alexander-McTague crystals and its implication for nucleation (9 pages)	056110
W. Klein	

Order statistics for d -dimensional diffusion processes (<i>4 pages</i>)	052102
S. B. Yuste, L. Acedo, and Katja Lindenberg	
Equilibrium and linear transport properties of fluids	
Breaking of equipartition in one-dimensional heat-conducting systems (<i>4 pages</i>)	052201
Akiko Kato and David Jou	
Experimental estimate of energy accommodation coefficient at high temperatures (<i>4 pages</i>)	052202
I. S. Altman, D. Lee, J. Song, and M. Choi	
Granular materials	
Labyrinthine granular landscapes (<i>3 pages</i>)	052301
H. Caps and N. Vandewalle	
Colloidal dispersions, suspensions, and aggregates	
Dynamic scaling and freezing criteria in quasi-two-dimensional dispersions (<i>4 pages</i>)	052401
Raphaël Pesché, Markus Kollmann, and Gerhard Nägele	
Liquid crystals	
Fluidlike behavior of dielectric permittivity in a wide range of temperature above and below the nematic-isotropic transition (<i>4 pages</i>)	052701
S. J. Rzoska, J. Ziolo, W. Sułkowski, J. Jadżyn, and G. Czechowski	
Shear viscosity of nematic liquid crystals in the vicinity of the smectic-A phase in alkyloxycyanobiphenyl mixtures (<i>4 pages</i>)	052702
Jan Jadżyn and Grzegorz Czechowski	
Biological physics	
$1/f$ noise and dynamical heterogeneity in glasses (<i>4 pages</i>)	052901
Giorgio Careri, Giuseppe Consolini, Zdravko Kutnjak, Cene Filipič, and Adrijan Levstik	
Unfolding rates for the diffusion-collision model (<i>3 pages</i>)	052902
Chris Beck and Xavier Siemens	
Proteinlike behavior of a spin system near the transition between a ferromagnet and a spin glass (<i>4 pages</i>)	052903
Chai-Yu Lin, Chin-Kun Hu, and Ulrich H. E. Hansmann	
Diluted neural networks with adapting and correlated synapses (<i>4 pages</i>)	052904
Massimo Mannarelli, Giuseppe Nardulli, and Sebastiano Stramaglia	
Glassy dynamics and enzymatic activity of lysozyme (<i>4 pages</i>)	052905
F. Pizzitutti and F. Bruni	

PART 2**RAPID COMMUNICATIONS****General methods of statistical physics**

Microthermodynamic formalism (<i>4 pages</i>)	055101(R)
Hans Henrik Rugh	
Gel-free experiments of reaction-diffusion front kinetics (<i>4 pages</i>)	055102(R)
Sung Hyun Park, Stephen Parus, Raoul Kopelman, and Haim Taitelbaum	

Population coding in neuronal systems with correlated noise (<i>11 pages</i>)	051904
Haim Sompolinsky, Hyungsoo Yoon, Kukjin Kang, and Maoz Shamir	
Disordered environments in spatial games (<i>6 pages</i>)	051905
Mendeli H. Vainstein and Jefferson J. Arenzon	
Synchronization of pulse-coupled excitable neurons (<i>13 pages</i>)	051906
Naoki Masuda and Kazuyuki Aihara	
From Davydov solitons to decoherence-free subspaces: Self-consistent propagation of coherent-product states (<i>17 pages</i>)	051907
S. Gheorghiu-Svirschevski	
Transport properties and efficiency of elastically coupled Brownian motors (<i>5 pages</i>)	051908
Akito Igarashi, Shinji Tsukamoto, and Hiromichi Goko	
Field theory for a reaction-diffusion model of quasispecies dynamics (<i>7 pages</i>)	051909
Romualdo Pastor-Satorras and Ricard V. Solé	
Random heteropolymer dynamics (<i>11 pages</i>)	051910
Z. Konkoli, J. Hertz, and S. Franz	
Extinctions in the random replicator model (<i>6 pages</i>)	051911
Viviane M. de Oliveira and J. F. Fontanari	
Hopfield model with self-coupling (<i>9 pages</i>)	051912
Manoranjan P. Singh	
Fractional occurrence of defects in membranes and mechanically driven interleaflet phospholipid transport (<i>10 pages</i>)	051913
Robert M. Raphael, Richard E. Waugh, Saša Svetina, and Boštjan Žekš	
Bursting as an emergent phenomenon in coupled chaotic maps (<i>9 pages</i>)	051914
Gerda de Vries	
Quantitative analysis of the frequency spectrum of the radiation emitted by cytochrome oxidase enzymes (<i>7 pages</i>)	051915
J. A. Tuszyński and J. M. Dixon	
Spherical harmonic decomposition applied to spatial-temporal analysis of human high-density electroencephalogram (<i>9 pages</i>)	051916
B. M. Wingeier, P. L. Nunez, and R. B. Silberstein	
Kirchhoff approximation for diffusive waves (<i>8 pages</i>)	051917
Jorge Ripoll, Vasilis Ntziachristos, Remi Carminati, and Manuel Nieto-Vesperinas	
Constraints, histones, and the 30-nm spiral (<i>13 pages</i>)	051918
Roya Zandi and Joseph Rudnick	
Thermodynamics of local DNA openings (<i>5 pages</i>)	051919
Tomasz Lipniacki	
Intelligent systems in the context of surrounding environment (<i>8 pages</i>)	051920
Joseph Wakeling and Per Bak	
Chromatin: A tunable spring at work inside chromosomes (<i>19 pages</i>)	051921
Eli Ben-Haïm, Annick Lesne, and Jean-Marc Victor	
Effect of surface charges on the curvature moduli of a membrane (<i>9 pages</i>)	051922
V. Kumaran	

BRIEF REPORTS

Statistical physics of soft matter

“Strange” Fermi processes and power-law nonthermal tails from a self-consistent fractional kinetic equation (<i>4 pages</i>)	052101
Alexander V. Milovanov and Lev M. Zelenyi	

Photo-orientation of liquid crystals due to light-induced desorption and adsorption of dye molecules on an aligning surface (5 pages)	051709
E. Ouskova, Yu. Reznikov, S.V. Shiyankovskii, L. Su, J.L. West, O.V. Kuksenok, O. Francescangeli, and F. Simoni	
Nematic model in the presence of a finite disorienting field: Integral equation approach (7 pages)	051710
T. G. Sokolovska, R. O. Sokolovskii, and M. F. Holovko	
Forces in the isotropic phase of a confined nematic liquid crystal 5CB (8 pages)	051711
K. Kočevár and I. Muševič	
Evidence from infrared dichroism, x-ray diffraction, and atomistic computer simulation for a “zigzag” molecular shape in tilted smectic liquid crystal phases (12 pages)	051712
W. G. Jang, M. A. Glaser, C. S. Park, K. H. Kim, Y. Lansac, and N. A. Clark	
Detailed optical studies of several banana-shaped compounds in liquid crystal B2 phase (6 pages)	051713
D. A. Olson, A. Cady, W. Weissflog, H. T. Nguyen, and C. C. Huang	

Polymers

Yield conditions for deformation of amorphous polymer glasses (8 pages)	051801
Jörg Rottler and Mark O. Robbins	
Probing the subglass relaxation behavior in model heterocyclic polymer networks by dielectric spectroscopy (7 pages)	051802
V. Yu. Kramarenko, T. A. Ezquerro, and V. P. Privalko	
Influence of confinement on the orientational phase transitions in the lamellar phase of a block-copolymer melt under shear flow (9 pages)	051803
A. N. Morozov, A. V. Zvelindovsky, and J. G. E. M. Fraaije	
Brillouin scattering study of elastic properties in ferroelectric copolymer single-crystalline films (8 pages) . . .	051804
Leo Otani, Akira Yoshihara, and Hiroji Ohgashi	
Model for the hydration of nonpolar compounds and polymers (6 pages)	051805
Pierpaolo Bruscolini and Lapo Casetti	
Anisotropy effects of Hele-Shaw cells on viscous fingering instability in dilute polymer solutions (3 pages)	051806
Masami Kawaguchi, Yuhsuke Hibino, and Tadaya Kato	
Dynamics of α and β processes in thin polymer films: Poly(vinyl acetate) and poly(methyl methacrylate) (11 pages)	051807
Koji Fukao, Shinobu Uno, Yoshihisa Miyamoto, Akitaka Hoshino, and Hideki Miyaji	
“Ordered” structure in ionic dilute solutions: Dendrimers with univalent and bivalent counterions (9 pages)	051808
Atsuyuki Ohshima, Toshiki Konishi, Junpei Yamanaka, and Norio Ise	
Biaxial deformation of a polymer under shear: NMR test of the Doi-Edwards model with convected constraint release (11 pages)	051809
Ryan J. Cormier, Maria L. Kilfoil, and Paul T. Callaghan	
Thermodynamic behavior of a polymer with interacting bonds on a square lattice (7 pages)	051810
K. D. Machado, M. J. de Oliveira, and J. F. Stilck	

Biological physics

Stability criteria for delayed neural networks (13 pages)	051901
Hongtao Lu	
Stabilization and destabilization of cell membranes by multivalent ions (5 pages)	051902
Bae-Yeun Ha	
Spectra and eigenvectors of scale-free networks (5 pages)	051903
K.-I. Goh, B. Kahng, and D. Kim	

Microscopic dynamics of molecular liquids and glasses: Role of orientations and translation-rotation coupling (18 pages)	051505
T. Theenhaus, R. Schilling, A. Latz, and M. Letz	
Computer simulations of electrorheological fluids in the dipole-induced dipole model (6 pages)	051506
Y. L. Siu, Jones T. K. Wan, and K. W. Yu	
Solid-solid transformations in a confined soft sphere fluid (4 pages)	051507
Chandana Ghatak and K. G. Ayappa	
Energy landscape view of fracture and avalanches in disordered materials (6 pages)	051508
Gerard Gagnon, Jaqunda Patton, and Daniel J. Lacks	
Interfacial conditions during evaporation or condensation of water (9 pages)	051509
C. A. Ward and D. Stanga	
Kinetics and morphologies of viscoelastic phase separation (10 pages)	051510
Jianing Zhang, Zhenli Zhang, Hongdong Zhang, and Yuliang Yang	

Films, interfaces, and crystal growth

Density change effects on crystal growth from the melt (9 pages)	051601
Massimo Conti	
Gas spreading on a heated wall wetted by liquid (10 pages)	051602
Y. Garrabos, C. Lecoutre-Chabot, J. Hegseth, V. S. Nikolayev, D. Beysens, and J.-P. Delville	
Structure formation from mesoscopic soft particles (10 pages)	051603
A. Fernández-Nieves, J. S. van Duijneveldt, A. Fernández-Barbero, B. Vincent, and F. J. de las Nieves	
Roughness scaling in cyclical surface growth (12 pages)	051604
Subhadip Raychaudhuri, Yonathan Shapir, David G. Foster, and Jacob Jorne	
Interface pinning in spontaneous imbibition (6 pages)	051605
M. Dubé, S. Majaniemi, M. Rost, M. J. Alava, K. R. Elder, and T. Ala-Nissila	
Van der Waals interaction mediated by an optically uniaxial layer (5 pages)	051606
A. Šarlah and S. Žumer	

Liquid crystals

Pretransitional behavior of dielectric permittivity on approaching a clearing point in a mixture of nematogens with antagonistic configurations of dipoles (4 pages)	051701
A. Drozd-Rzoska, S. Pawlus, and S. J. Rzoska	
Computer simulation study of the phase behavior of a nematogenic lattice-gas model (5 pages)	051702
Martin A. Bates	
Microscopic structure and dynamics of a partial bilayer smectic liquid crystal (12 pages)	051703
Yves Lansac, Matthew A. Glaser, and Noel A. Clark	
Oriental transitions in a nematic liquid crystal confined by competing surfaces (8 pages)	051704
I. Rodríguez-Ponce, J. M. Romero-Enrique, and L. F. Rull	
Molecular theory of elastic constants of liquid crystals. III. Application to smectic phases with tilted orientational order (15 pages)	051705
Yashwant Singh and Jokhan Ram	
Optical rotation and structure of ferroelectric smectic phases (7 pages)	051706
I. Mušević and M. Škarabot	
Experimental evidence for an achiral orthogonal biaxial smectic phase without in-plane order exhibiting antiferroelectric switching behavior (6 pages)	051707
A. Eremin, S. Diele, G. Pelzl, H. Nádasi, W. Weissflog, J. Salfetnikova, and H. Kresse	
Dielectric investigation of electrically oriented ferroelectric smectic mixture CS-1013 (9 pages)	051708
S. K. Kundu, E. Okabe, W. Haase, and B. K. Chaudhuri	

Stochastic resonance in delayed two-coupled oscillators without common perturbations (<i>5 pages</i>)	051116
Qian Shu Li and Rui Zhu	
Equilibrium and linear transport properties of fluids	
Finite-size effects in molecular dynamics simulations: Intermediate scattering function and velocity of sound. III. Theory and application to a model krypton fluid (<i>10 pages</i>)	051201
J. J. Salacuse and P. A. Egelstaff	
Theory of asymmetric nonadditive binary hard-sphere mixtures (<i>13 pages</i>)	051202
R. Roth, R. Evans, and A. A. Louis	
Granular materials	
Angle of repose and segregation in cohesive granular matter (<i>9 pages</i>)	051301
Azadeh Samadani and A. Kudrolli	
Granular flow down an inclined plane: Bagnold scaling and rheology (<i>14 pages</i>)	051302
Leonardo E. Silbert, Deniz Ertas, Gary S. Grest, Thomas C. Halsey, Dov Levine, and Steven J. Plimpton	
Modeling relaxation and jamming in granular media (<i>4 pages</i>)	051303
B. Kahng, I. Albert, P. Schiffer, and A.-L. Barabási	
Numerical solution of the Smoluchowski equation for a vibrofluidized granular bed (<i>10 pages</i>)	051304
R. D. Wildman, J. M. Huntley, J. P. Hansen, and D. J. Parker	
Nonequilibrium phase transition for a heavy particle in a granular fluid (<i>16 pages</i>)	051305
Andrés Santos and James W. Dufty	
Colloidal dispersions, suspensions, and aggregates	
Buckling and nonlocal elasticity of charged membranes (<i>9 pages</i>)	051401
Roland R. Netz	
Dipolar-interaction-induced fractal pattern formation in magnetic multilayers (<i>6 pages</i>)	051402
F. Yang and F. Pan	
Binary hard-sphere crystals with the cesium chloride structure (<i>4 pages</i>)	051403
A. B. Schofield	
Experimental test of two-dimensional melting through disclination unbinding (<i>10 pages</i>)	051404
R. A. Quinn and J. Goree	
Statistics of largest cluster growth through constant rate random filling of lattices (<i>5 pages</i>)	051405
J. E. de Freitas, L. S. Lucena, and S. Roux	
Spherical polyelectrolyte brushes: Comparison between annealed and quenched brushes (<i>9 pages</i>)	051406
X. Guo and M. Ballauff	
Structured and complex fluids	
Adsorption of a diatomic molecular fluid into random porous media (<i>10 pages</i>)	051501
M. J. Fernaund, E. Lomba, and J. J. Weis	
Thermal force induced by the presence of a particle near a solidifying interface (<i>6 pages</i>)	051502
L. Hadji	
Spatially correlated dynamics in a simulated glass-forming polymer melt: Analysis of clustering phenomena (<i>13 pages</i>)	051503
Y. Gebremichael, T. B. Schröder, F. W. Starr, and S. C. Glotzer	
Dynamic light scattering study of the liquid $\leftrightarrow$ glass transition for the $\text{GdCl}_3\text{-3AlCl}_3$ glass-forming mixture (<i>6 pages</i>)	051504
G. D. Zissi and S. N. Yannopoulos	