

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 77, NUMBER 5

MAY 2008

Liquid crystals

Nonmonotonic behavior of the nematic tilt angle in a temperature-induced surface transition (<i>4 pages</i>)	052701
Giovanni Barbero, Ingolf Dahl, and Lachezar Komitov	
Flexoelectric polarization in the biaxial nematic phase (<i>4 pages</i>)	052702
A. Kapanowski	

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 77, NUMBER 5

MAY 2008

Attractive membrane domains control lateral diffusion (<i>7 pages</i>)	051906
Martin B. Forstner, Douglas S. Martin, Florian R��ckerl, Josef A. K��s, and Carsten Selle	
Molecular motion in cell membranes: Analytic study of fence-hindered random walks (<i>10 pages</i>)	051907
V. M. Kenkre, L. Giuggioli, and Z. Kalay	
Dryland ecosystems: The coupled stochastic dynamics of soil water and vegetation and the role of rainfall seasonality (<i>9 pages</i>)	051908
R. Vezzoli, C. De Michele, H. Pavlopoulos, and R. J. Scholes	
Interplay between a phase response curve and spike-timing-dependent plasticity leading to wireless clustering (<i>6 pages</i>)	051909
Hideyuki C��teau, Katsunori Kitano, and Tomoki Fukai	
Properties of contact matrices induced by pairwise interactions in proteins (<i>10 pages</i>)	051910
Sanzo Miyazawa and Akira R. Kinjo	
Deterministic excitable media under Poisson drive: Power law responses, spiral waves, and dynamic range (<i>9 pages</i>)	051911
Tiago L. Ribeiro and Mauro Copelli	
During vertebrate development, arteries exert a morphological control over the venous pattern through physical factors (<i>16 pages</i>)	051912
Alia Al-Kilani, Sylvie Lorthois, Thi-Hanh Nguyen, Ferdinand Le Noble, Annemiek Cornelissen, Mathieu Unbekandt, Olena Boryskina, Lo��c Leroy, and Vincent Fleury	
Strain hardening, avalanches, and strain softening in dense cross-linked actin networks (<i>6 pages</i>)	051913
Jan A. ��str��m, P. B. Sunil Kumar, Ilpo Vattulainen, and Mikko Karttunen	
Controlling limit-cycle behaviors of brain activity (<i>4 pages</i>)	051914
J. W. Kim and P. A. Robinson	
Instability-induced hierarchy in bipedal locomotion (<i>13 pages</i>)	051915
Kunishige Ohgane and Kei-Ichi Ueda	
Model for the unidirectional motion of a dynein molecule (<i>8 pages</i>)	051916
Sutapa Mukherji	
Geometry of the energy landscape and folding transition in a simple model of a protein (<i>11 pages</i>)	051917
Lorenzo N. Mazzoni and Lapo Casetti	
Bursting regimes in map-based neuron models coupled through fast threshold modulation (<i>18 pages</i>)	051918
Borja Ibarz, Hongjun Cao, and Miguel A. F. Sanju��n	

BRIEF REPORTS

Statistical physics

Role of saddles in topologically driven phase transitions: The case of the <i>d</i> -dimensional spherical model (<i>4 pages</i>)	052101
L. Angelani and G. Ruocco	
Quantum transitions in Lennard-Jones clusters (<i>4 pages</i>)	052102
Jason Deckman, Pavel A. Frantsuzov, and Vladimir A. Mandelshtam	

(Continued)

CONTENTS - *Continued*

PHYSICAL REVIEW E

THIRD SERIES, VOLUME 77, NUMBER 5

MAY 2008

Phase behavior of wormlike rods (<i>4 pages</i>)	051705
Giorgio Cinacchi and Luca De Gaetani	
Thermomechanically driven spirals in a cholesteric liquid crystal (<i>5 pages</i>)	051706
Patrick Oswald and Alain Dequidt	
Experimental study of high-temperature smectic- C_{FI2}^* phase in chiral smectic liquid crystals that exhibit phase-sequence reversal (<i>9 pages</i>)	051707
K. L. Sandhya, J. K. Song, Yu. P. Panarin, J. K. Vij, and S. Kumar	
Dynamical numerical model for nematic order reconstruction (<i>10 pages</i>)	051708
G. Lombardo, H. Ayeb, and R. Barberi	
Energy landscape of a model discotic liquid crystal (<i>8 pages</i>)	051709
Dwaipayan Chakrabarti and David J. Wales	
Bleaching and stimulated recovery of dyes and of photocantilevers (<i>11 pages</i>)	051710
D. Corbett and M. Warner	

Polymers

Effects of nanoscale dispersion in the dielectric properties of poly(vinyl alcohol)-bentonite nanocomposites (<i>10 pages</i>)	051801
María C. Hernández, N. Suárez, Luis A. Martínez, José L. Feijoo, Salvador Lo Mónaco, and Norkys Salazar	
Nematic elastomers: From a microscopic model to macroscopic elasticity theory (<i>10 pages</i>)	051802
Xiangjun Xing, Stephan Pfahl, Swagatam Mukhopadhyay, Paul M. Goldbart, and Annette Zippelius	
Control over phase behavior and solution structure of hairy-rod polyfluorene by means of side-chain length and branching (<i>14 pages</i>)	051803
M. Knaapila, R. Stepanyan, M. Torkkeli, V. M. Garamus, F. Galbrecht, B. S. Nehls, E. Preis, U. Scherf, and A. P. Monkman	
Exact solution to ideal chain with fixed angular momentum (<i>5 pages</i>)	051804
J. M. Deutsch	
Characterization of the dynamics of block copolymer microdomains with local morphological measures (<i>8 pages</i>)	051805
S. Rehse, K. Mecke, and R. Magerle	

Biological physics

Domain formation in membranes caused by lipid wetting of protein (<i>17 pages</i>)	051901
Sergey A. Akimov, Vladimir A. J. Frolov, Peter I. Kuzmin, Joshua Zimmerberg, Yuri A. Chizmadzhev, and Fredric S. Cohen	
Tilable nature of virus capsids and the role of topological constraints in natural capsid design (<i>8 pages</i>)	051902
Ranjan V. Mannige and Charles L. Brooks, III	
Effect of external stress on the thermal melting of DNA (<i>13 pages</i>)	051903
Joseph Rudnick and Tatiana Kuriabova	
Controlling viral capsid assembly with templating (<i>11 pages</i>)	051904
Michael F. Hagan	
Simulation studies of self-organization of microtubules and molecular motors (<i>8 pages</i>)	051905
Zhiyuan Jia, Dmitry Karpeev, Igor S. Aranson, and Peter W. Bates	

(Continued)

Structured and complex fluids

Structure and thermodynamics of a ferrofluid bilayer (<i>18 pages</i>)	051501
Carlos Alvarez, Martial Mazars, and Jean-Jacques Weis	
Charge fluctuations and correlation lengths in finite electrolytes (<i>7 pages</i>)	051502
Young C. Kim and Michael E. Fisher	
Theory of dynamic arrest in colloidal mixtures (<i>14 pages</i>)	051503
R. Juárez-Maldonado and M. Medina-Noyola	
Large-amplitude jumps and non-Gaussian dynamics in highly concentrated hard sphere fluids (<i>10 pages</i>)	051504
Erica J. Saltzman and Kenneth S. Schweizer	
Effective temperature dynamics in an athermal amorphous plasticity theory (<i>9 pages</i>)	051505
Eran Bouchbinder	

Films, interfaces, and crystal growth

Volume versus surface nucleation in freezing aerosols (<i>4 pages</i>)	051601
Ómar F. Sigurbjörnsson and Ruth Signorell	
Phase separation of an asymmetric binary-fluid mixture confined in a nanoscopic slit pore: Molecular-dynamics simulations (<i>11 pages</i>)	051602
Katarzyna Bucior, Leonid Yelash, and Kurt Binder	
Adsorption of fluids in a pore with chemical heterogeneities: The cooperative effect (<i>8 pages</i>)	051603
Zhikuan Feng, Xianren Zhang, and Wenchuan Wang	
Iterative reconstruction of a refractive-index profile from x-ray or neutron reflectivity measurements (<i>9 pages</i>)	051604
Thorsten Hohage, Klaus Giewekemeyer, and Tim Salditt	
Phase-field simulation of stripe arrays on metal bcc(110) surfaces (<i>7 pages</i>)	051605
Yan-Mei Yu, Rainer Backofen, and Axel Voigt	
Dislocation dynamics and surface coarsening of rippled states in the epitaxial growth and erosion on (110) crystal surfaces (<i>12 pages</i>)	051606
Leonardo Golubović and Artem Levandovsky	
Conformal invariance of isoheight lines in a two-dimensional Kardar-Parisi-Zhang surface (<i>4 pages</i>)	051607
A. A. Saberi, M. D. Niray, S. M. Fazeli, M. R. Rahimi Tabar, and S. Rouhani	
Sudden ridge collapse in the stress relaxation of thin crumpled polymer films (<i>5 pages</i>)	051608
Ingo Dierking and Paul Archer	

Liquid crystals

Anchoring of nematic liquid crystals on a thin polymeric film (<i>8 pages</i>)	051701
A. L. Alexe-Ionescu, G. Barbero, and L. Komitov	
Defect-mediated emulsification in two dimensions (<i>11 pages</i>)	051702
K. S. Korolev and David R. Nelson	
Generalization of Berreman's model to the case of large amplitude of the grooves (<i>6 pages</i>)	051703
G. Barbero, A. S. Gliozzi, M. Scalerandi, and L. R. Evangelista	
Topological transitions in two-dimensional lattice models of liquid crystals (<i>7 pages</i>)	051704
H. Chamati and S. Romano	

Inertial effects in Büttiker-Landauer motor and refrigerator at the overdamped limit (<i>11 pages</i>)	051132
Ronald Benjamin and Ryoichi Kawai	
Improved convergence for two-component activity expansions (<i>6 pages</i>)	051133
H. E. DeWitt, F. J. Rogers, and V. Sonnad	
Aging processes in reversible reaction-diffusion systems (<i>9 pages</i>)	051134
Vlad Elgart and Michel Pleimling	
Equilibrium and linear transport properties of fluids	
Monte Carlo simulation in the isobaric-multithermal ensemble of a bulk Lennard-Jones fluid system: Thermodynamic quantities for pressure from $P^*=2.42$ to 7.25 (<i>9 pages</i>)	051201
Chizuru Muguruma and Yuko Okamoto	
Charge transport and mass transport in imidazolium-based ionic liquids (<i>4 pages</i>)	051202
J. R. Sangoro, A. Serghei, S. Naumov, P. Galvosas, J. Kärger, C. Wespe, F. Bordusa, and F. Kremer	
Pore characterization through propagator-resolved transverse relaxation exchange (<i>13 pages</i>)	051203
K. E. Washburn, C. H. Arns, and P. T. Callaghan	
Frustration and anomalous behavior in the Bell-Lavis model of liquid water (<i>15 pages</i>)	051204
Marco Aurélio Alves Barbosa and Vera Bohomoletz Henriques	
Fundamental-measure density functional for mixtures of parallel hard cylinders (<i>9 pages</i>)	051205
Yuri Martínez-Ratón, José A. Capitán, and José A. Cuesta	
Penetrable square-well fluids: Exact results in one dimension (<i>14 pages</i>)	051206
Andrés Santos, Riccardo Fantoni, and Achille Giacometti	
Granular materials	
Frequency-dependent fluctuation-dissipation relations in granular gases (<i>6 pages</i>)	051301
Guy Bunin, Yair Shokef, and Dov Levine	
Fragmentation processes in impact of spheres (<i>10 pages</i>)	051302
H. A. Carmona, F. K. Wittel, F. Kun, and H. J. Herrmann	
Stress, strain, and bulk microstructure in a cohesive powder (<i>8 pages</i>)	051303
R. Andersson, W. G. Bouwman, S. Luding, and I. M. de Schepper	
Correlated motion in the bulk of dense granular flows (<i>6 pages</i>)	051304
Lydie Staron	
Pentagon deposits unpack under gentle tapping (<i>6 pages</i>)	051305
Ana M. Vidales, Luis A. Pugnaloni, and Irene Ippolito	
Colloidal dispersions, suspensions, and aggregates	
Autocalibrated colloidal interaction measurements with extended optical traps (<i>7 pages</i>)	051401
Marco Polin, Yohai Roichman, and David G. Grier	
Particle dynamics within a wetting layer in a colloid-polymer mixture (<i>4 pages</i>)	051402
P. Voudouris, B. Loppinet, and G. Petekidis	
Thermodynamics of nanocluster phases: A unifying theory (<i>5 pages</i>)	051403
N. Destainville and L. Foret	

Gravitational dynamics of an infinite shuffled lattice: Early time evolution and universality of nonlinear correlations (<i>11 pages</i>)	051114
T. Baertschiger, M. Joyce, F. Sylos Labini, and B. Marcos	
Multicritical Nishimori point in the phase diagram of the $\pm J$ Ising model on a square lattice (<i>10 pages</i>)	051115
Martin Hasenbusch, Francesco Parisen Toldin, Andrea Pelissetto, and Ettore Vicari	
Scaling properties of the asymmetric exclusion process with long-range hopping (<i>8 pages</i>)	051116
J. Szavits-Nossan and K. Uzelac	
Self-organized relaxation in a collisionless gravitating system (<i>9 pages</i>)	051117
Yasuhide Sota, Osamu Iguchi, Tohru Tashiro, and Masahiro Morikawa	
Universality in early-stage growth of phase-separating domains near the critical point (<i>13 pages</i>)	051118
Ana Oprisan, Sorinel A. Oprisan, John J. Hegseth, Yves Garrabos, Carole Lecoutre-Chabot, and Daniel Beysens	
Continuous-time random walk for open systems: Fluctuation theorems and counting statistics (<i>12 pages</i>)	051119
Massimiliano Esposito and Katja Lindenberg	
Work fluctuations in quantum spin chains (<i>9 pages</i>)	051120
Sven Dorosz, Thierry Platini, and Dragi Karevski	
Testing percolation theory in the laboratory: Measuring the critical exponents and fractal dimension during gelation (<i>4 pages</i>)	051121
Yasar Yilmaz, Ali Gelir, Esra Alveroglu, and Nihan Uysal	
Existence of an upper critical dimension in the majority voter model (<i>5 pages</i>)	051122
Jae-Suk Yang, In-mook Kim, and Wooseop Kwak	
Simulation study of earthquakes based on the two-dimensional Burridge-Knopoff model with long-range interactions (<i>16 pages</i>)	051123
Takahiro Mori and Hikaru Kawamura	
Entropic rigidity of a crumpling network in a randomly folded thin sheet (<i>8 pages</i>)	051124
Alexander S. Balankin and Orlando Susarrey Huerta	
Simulating the contact process in heterogeneous environments (<i>7 pages</i>)	051125
S. V. Fallert, J. J. Ludlam, and S. N. Taraskin	
Vibrational resonance and the detection of aperiodic binary signals (<i>7 pages</i>)	051126
V. N. Chizhevsky and Giovanni Giacomelli	
Dynamics of annihilation. I. Linearized Boltzmann equation and hydrodynamics (<i>16 pages</i>)	051127
María Isabel García de Soria, Pablo Maynar, Grégory Schehr, Alain Barrat, and Emmanuel Trizac	
Dynamics of annihilation. II. Fluctuations of global quantities (<i>14 pages</i>)	051128
Pablo Maynar, María Isabel García de Soria, Grégory Schehr, Alain Barrat, and Emmanuel Trizac	
Generalized Cahn-Hilliard equation for biological applications (<i>7 pages</i>)	051129
Evgeniy Khain and Leonard M. Sander	
Kinetics of a mixed spin-1 and spin-3/2 Ising system under a time-dependent oscillating magnetic field (<i>9 pages</i>)	051130
Mustafa Keskin, Ersin Kantar, and Osman Cankö	
Microcanonical quantum fluctuation theorems (<i>6 pages</i>)	051131
Peter Talkner, Peter Hänggi, and Manuel Morillo	