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Program of the 79th Statistical Mechanics Meeting

Department of Mathematics, Rutgers University

15–18 May 1998

Here are the titles presented at the last semiannual Statistical Mechanics Meeting, held in May 1998. As usual these titles are informal and, in many cases, there is only one speaker listed, although the work may have been done by many collaborators. Also, the addresses are incomplete, but e-mail addresses are provided if you are interested in communicating with a speaker.

Information about past and future meetings, as well as positions wanted and available can be obtained via WWW browser at the URL ftp://math.rutgers.edu/pub/smm.

The next Statistical Mechanics Meeting will take place December 13–15, 1998, at Rutgers University.

Joel L. Lebowitz

Review Talks

Interface Dynamics in Phase Transitions
T. Souganidis, University of Wisconsin, souganid@math.wisc.edu

Cahn-Hilliard Dynamics
N. Alikakos, University of Tennessee/University of Athens, alikakos@math.utk.edu

Ostwald Ripening in the Presence of Elastic Stress: Self-Similarity, Kinetics and Anisotropy
P. W. Voorhees, Northwestern University, p-voorhees@nwu.edu

Wetting
B. Widom, Cornell University, widom@wisteria.chem.cornell.edu

The Cahn Transition at the Microscopic Scale
J. De Coninck, Université de Mons-Hainaut, joel@gibbs.umh.ac.be

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A Shared Property of Certain Similarity Solutions in Theories of Evaporation-Condensation and Curvature Driven Surface Diffusion
B. Coleman, Rutgers University, bcoleman@stokes.rutgers.edu

A Droplet on a Wall: Microscopic Approach from Effective Interface Models
G. Giacomin, Lausanne, Giambattista.Giacomin@epfl.ch

Phase-Field Modeling of Thermoelastic Materials with Changes of Phase
P. Fife, University of Utah, fife@math.utah.edu

Double Obstacle and Degenerate Phase Field, Cahn-Hilliard and Allen-Cahn Equations
C. M. Elliott, University of Sussex, C.M.Elliott@sussex.ac.uk

A Kinetic Theory Approach to the Scaling Limits of Ising Systems with Long-Range Interactions
E. Carlen, Georgia Institute of Technology, carlen@math.gatech.edu

Scaling and Universality in Phase-Ordering Dynamics
A. D. Rutenberg, McGill University, adruten@physics.mcgill.ca

Triple Junctions, Et Cetera
J. Taylor, Rutgers University, taylor@math.rutgers.edu

Two Length Scales in the Critical X-ray Diffuse Scattering from the Tricritical System V2H
S. C. Moss, The University of Houston, smoss@UH.EDU

Titanium-Based Quasicrystals
K. F. Kelton, Washington University, kfk@howdy.wustl.edu

Penrose Tilings and Quasicrystals
P. Steinhardt, University of Pennsylvania, steinh@steinhardt.hep.upenn.edu

Rational Approximants to Quasicrystals
S. Ranganathan, Indian Institute of Science, rangu@metalrg.iisc.ernet.in

Statistical Mechanics of Random Tiling Quasicrystals
C. Henley, Cornell University, clh@msc.cornell.edu

Symmetries of Quasicrystals
C. Radin, University of Texas, radin@fireant.ma.utexas.edu

Lattice-Gas Models of Quasicrystals
J. Miekisz, Warsaw University, Poland, miekisz@hydra.mimuw.edu.pl

Constructive Field Theory for Interfaces
F. Dunlop, Cergy-Pontoise University, France, dunlop@u-cergy.fr

Spinodal Decomposition and Wetting in Fluid Systems
V. Nikolayev, University of New Orleans, vnikol@jazz.ucc.uno.edu

Lattice Boltzmann Simulations of Complex Fluids
J. Yeomans, Oxford University, j..yeomans1@physics.oxford.ac.uk

Low Temperature Wetting of Antiphase Boundaries: A Gamma Convergence Approach
A. Novick-Cohen, Technion, amync@techunix.technion.ac.il

Mechanism of Formation of Monodispersed Colloids by Nucleation and Aggregation of Nanosize Precursors
V. Privman, Clarkson University, privman@polaris.clarkson.edu

Rise of Vortices and Bifurcation Analysis for a Ginzburg Landau Model in Cylindrical Domains
L. V. Berlyand, Penn State University, berlyand@math.psu.edu

Structure and Properties of Solid Interfaces
T. Tsakalakos, Rutgers University, tsakalak@erebus.rutgers.edu

Alloy Decomposition and Surface Instabilities in Growing Thin Films
R. Desai, University of Toronto, desai@physics.utoronto.ca

Crossover from Ising-Like to Mean-Field Critical Behavior of Simple and Complex Fluids
J. V. Sengers, University of Maryland, js45@umailsrv0.umd.edu

Dynamics of Step Bunching and Pattern Formation on Crystal Surfaces
J. D. Weeks, University of Maryland, jdw@ipst.umd.edu

Coarsening in a Driven Diffusive System: Lattice Models vs. Continuum Descriptions
R. K. P. Zia, VPI and State University, rkpzia@mail.vt.edu

Dynamics of Deformation and Fracture in Amorphous Solids
J. S. Langer, University of California, Santa Barbara, langer@physics.ucsb.edu

Grain Rotation in Sintering at the Nanoscale
P. C. Clapp, University of Connecticut, pclapp@mail.ims.uconn.edu

Round Table: Statistical Mechanics, Partial Differential Equations and Material Science
J. L. Lebowitz, Rutgers University, chair, lebowitz@math.rutgers.edu
M. E. Fisher, University of Maryland
R. Kohn, New York University, kohn@math5.cims.nyu.edu
J. Cahn, NIST, Cah@enh.nist.gov

Faceting of Metal Surfaces Induced by Ultrathin Metal Films
T. Madey, Rutgers University, madey@physics.rutgers.edu

Infinite-Disorder Fixed Points!
D. A. Huse, Princeton University, huse@princeton.edu

Some New Results in the Kinetics of Phase Transitions
W. Klein, Boston University, klein@buphyc.bu.edu

Spinodal Decomposition for Multi-Component Cahn-Hilliard Systems
S. Maier-Paape, University of Augsburg, maier@math.uni-augsburg.de

Transport in Thermal Equilibrium
J. Frohlich, Eth, Zurich, juerg@itp.phys.ethz.ch

Short Communications

* indicates speaker

Cluster Effects in Electromagnetic Wave Tunneling through Polariton Gaps
*A. Yamilov, L. Deych and A. A. Lisyansky, Queens College, alexander_lisyanksky@qc.edu

How we Beat Finite-Size Effects in Phase Segregation Kinetics
*V. Gorentsveig, Rutgers University, P. Fratzl, Wienna University, and J. L. Lebowitz, Rutgers University

Strong Localization in 1D Photonic Crystals with Defects (Analytic Results)
A. Figotin and *V. Gorentsveig, University of North Carolina at Charlotte, vgorents@uncc.edu

Dynamics of Driven Interfaces near Isotropic Percolation Transition
M.-P. Kuittu, Helsinki Institute of Physics, *M. Haataja, McGill University, haataja@physics.mcgill.ca, N. Provatas, University of Illinois at Urbana-Champaign, and T. Ala-Nissila, University of Helsinki

Critical Behavior at a Nonequilibrium Bicritical Point
*D. A. Browne, K. E. Bassler, and K. S. Brown, Louisiana State University, browne@helios.phys.lsu.edu

The Stability of Ginzburg–Landau Vortices
*S. Gustafson, and I. Sigal, University of Toronto, gustaf@math.toronto.edu

The Phase Transition to a Square Vortex Lattice in Type-II Superconductors with Fourfold Anisotropy
*K. Park and D. A. Huse, Princeton University, kpark@feynman.princeton.edh

Renormalization-Group Calculations of Local Energy Densities at Criticality under Relevant Quenched Disorder
*D. Yesilleten and A. Nihat Berker, M.I.T., yesil@mit.edu

Asymmetric Random-Field Tricriticality
*A. Kabakcioglu and A. Nihat Berker, M.I.T., alkan@jabba.mit.edu

Narrow Coexistence Region of the $d = 3$ Hubbard Model
*G. Migliorini and A. Nihat Berker, M.I.T., gabriele@cmt4.mit.edu

Exploring a Tricritical Wing by an "External" Coupling to the Superfluid Order Parameter in ^{3}He–^{4}He Mixtures

A. Lopatnikova, Harvard University, and *A. N. Berker, M.I.T., nihat@cmt5.mit.edu

Magnetic Properties of a Bose-Einstein Condensate
*M. Simkin and E. G. D. Cohen, The Rockefeller University, simkin@calif.rockefeller.edu

Stacking Entropy of Hardsphere Crystals
*S.-C. Mau and D. A. Huse, Princeton University, siunmau@feynman.princeton.edu

Density Fluctuations in Many-Body Systems: New Exact Results
*T. M. Truskett, S. Torquato and P. G. Debenedetti, Princeton University, truskett@material.princeton.edu

Roles of Repulsive and Attractive Forces in Determining the Structure of Nonuniform Liquids: Generalized Mean Field Theory
J. D. Weeks, *K. Katsov, K. Vollmayr, University of Maryland, katsov@Glue.umd.edu

Molecular Dynamics Simulation of Phase Change in Lennard-Jones Fluids
N. G. Hadjiconstantinou, M.I.T., ngh@mit.edu

Modified One-Dimensional Two-Compotent Plasmas
D. Chelst, Rutgers University, chelst@math.rutgers.edu

Charge Separation in Confined Charged Fluids
J. Yu, Universidad Autonoma Metropolitana-Iztapalapa, L. Degreve, Universidad de Sao Paulo, and *M. Lozada-Cassou, Universidad Autonoma Metropolitana-Iztapalapa, marcelo@citlalli.uam.mx

Charge Fluctuations in Electrolytes: The Lebowitz Length
*S. Bekiranov and M. E. Fisher, University of Maryland, bek@minerva.umd.edu

Why Some Simulation Results for Ionic Fluids Look Mean-Field-Like
G. Stell, SUNY at Stony Brook, GSTELL@xray3.chem.sunysb.edu

Weak Ergodicity Breaking in a Simple Free Energy Landscape
B. Chakraborty and *M. Ignatiev, Brandeis University, ignatiev@matter.cc.brandeis.edu

A Growth Model for Quasicrystals
*D. Joseph and V. Elser, Cornell University, joseph@msc.cornell.edu

Volume Changes in Binary Alloy Ordering, A Binary Classical Density Functional Theory Approach
D. L. Olmsted, Brandeis University, olmsted@binah.cc.brandeis.edu

Generalized Landau-Type Theory for Crystal Liquid-Crystal Phase Diagrams
V. V. Ginzburg, We Innovex Inc., v_ginzburg@msn.com

Phase Coexistence in a Single Protein Chain
*R. Du, A. Yu. Grosberg and T. Tanaka, M.I.T., rose@tanaka.mit.edu

Compact Polymers with Continuously Varying Exponents
*J. Kondev, IAS and Princeton University, janek@ias.edu, and J. L. Jacobsen, Oxford

Coupled Cahn–Hilliard Equations
A. Tani, Keio University, tani@math.keio.ac.jp

Ostwald Ripening in a Semi Infinite System
R. Burghaus, Heinrich-Heine-Universität Düsseldorf, burghaus@thphy.uni-duesseldorf.de

Correlation Analysis in the Spreading of Damage in the 2-Dimensional Ising Model
*C. Argolo, A. Mariz and S. Miyazima, Boston University/Escola Tecnica Federal de Alagoas, Brazil, argolo@miranda.bu.edu

Transition to Chaos in Models of Genetic Networks
*C. Hill, Cornell University, cch5@newton.ruph.cornell.edu, B. Sawhill, Bios Group LP, S. Kauffman, Santa Fe Institute and Bios Group LP, and L. Glass, McGill University

Modeling the Dynamics of Stress-Induced Instabilities
*J. Mueller and Martin Grant, McGill University, judith@physics.mcgill.ca

Exact Correlation Functions of the Most General Spin-S Model on the Bethe Lattice
*N. S. Izmailyan and C. K. Hu, Academia Sinica

A Farey Fraction Spin Chain
*P. Kleban and A. Ozluk, University of Maine, kleban@maine.maine.edu

On the Average Magnetization in Spin Glass Models
A. Gandolfi, Universita' di Roma Tor Vergata, gandolfi@axp.mat.uniroma2.it

Exact Solution of the Asymmetric Exclusion Process with Time Discrete Dynamics
N. Rajewsky, Rutgers University, rajewsky@math.rutgers.edu

The Finite Eight Vertex Model
K. Eloranta, Helsinki University of Technology, eloranta@janus.hut.fi

Kinetics of Phase Separation in Polymer Gels: Experimental Test of Cahn Hilliard Theory
*R. Bansil, G. Liao and K. Ludwig, Boston University, rb@buphy.bu.edu

Large Deviations for the Quantum Ideal Gases
M. Lenci, Rutgers University, lenci@math.rutgers.edu

On a Quantum Analogue of KAM Theorem
M. Kunz, M.I.T., mkunz@MIT.EDU

Biased Monte Carlo for Zeolite Structure Solution: A Minimization Problem
*M. Falcioni and M. W. Deem, UCLA, falcioni@ucla.edu

Hydrodynamic Limit of Brownian Particles Interacting with Short and Long Range Forces
*P. Butta and J. L. Lebowitz, Rutgers University, pbutta@math.rutgers.edu

The Kinetic Ising Model in Oscillating Magnetic Field
K.-T. Leung and *Z. Neda, Academia Sinica, Taiwan, neda@phys.sinica.edu.tw

Fluctuation Effects on Quad ratic Autocatalysis Fronts: A Markov Chain Approach
*M. V. Velikanov and R. Kapral, University of Toronto, mvelikan@alchemy.chem.utoronto.ca

Surface vs Bulk Behavior in a Simple Nonequilibrium System
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