

Program of the 77th Statistical Mechanics Meeting

Department of Mathematics, Rutgers University, May 18 and 19, 1997

Here are the titles presented at the last semiannual Statistical Mechanics Meeting, held in May 1997. 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 available and names of people looking for positions, can be obtained from a file labeled `smm` which you will be able to reach directly by anonymous ftp to "math.rutgers.edu;" give "anonymous" as user name and give your e-mail address as the password. You should switch to appropriate directory by "cd pub/smm." Alternatively, this file can be reached via WWW browser at the URL file: `//math.rutgers.edu/pub/smm`.

The next Statistical Mechanics Meeting will take place December 14–16, 1997, at Rutgers University.

Joel L. Lebowitz

REVIEW TALKS

Glassy Dynamics in Models without Quenched Randomness

B. Chakraborty, Brandeis University, `bulbul@snow.cc.brandeis.edu`

Sampling Paths between Stable States in Complex Systems, or Throwing Ropes over Rough Mountain Passes

D. Chandler, University of California at Berkeley, `Chandler@gold.cchem.berkeley.edu`

Exact Expressions for the Effective Moduli of Random Media

S. Torquato, Princeton University, `torquato@matter.princeton.edu`

Microscopic Explanation of the Pitch of Cholesteric Liquid Crystals

A. B. Harris, University of Pennsylvania, harris@harris.physics.upenn.edu

Random-Field Effects in Polymer Stabilized Cholesteric Textures

G. Grinstein, IBM, ggrin@watson.ibm.com

Branching of Magnetic Domains

R. Kohn, New York University, kohn@math5.cims.nyu.edu

Is the Rigidity Percolation Transition First-Order?: Mean-Field Theory

P. Leath, Rutgers University, leath@physics.rutgers.edu

Non-Universal, Universal, and Kind-of Universal Things in Percolation

R. Ziff, The University of Michigan, rziff@engin.umich.edu

Short-Range Spin Glasses in Large Volumes: What the Hell is Going on Here?

C. Newman, New York University, newman@math3.nyu.edu

Statistical Mechanics of River Networks

J. Banavar, Penn State University, jayanth@phys.psu.edu

Can You See the Sound of a Drum?

J.-P. Eckmann, University of Geneva, Jean-Pierre.Eckmann@physics.unige.ch

Random Bonds and Random Fields in Ising and Potts Models

J. Cardy, Oxford University, j.cardy1@physics.oxford.ac.uk

Phase Transitions in Random Field XY Magnets?

D. Fisher, Harvard University, fisher@cmt.harvard.edu

Nonequilibrium Dynamics and Operator Algebras

R. Stinchcombe, Oxford/Rutgers, stinch@physics.rutgers.edu

Self-Organized Short-Term Memories

S. Coppersmith, University of Chicago, snc@control.uchicago.edu

Statistical Mechanics of Search

S. Kirkpatrick, IBM, kirk@watson.ibm.com

Combinatorial Games and Randomness

J. Beck, Rutgers University, jbeck@math.rutgers.edu

Monte Carlo Simulations of Surface Induced Order and Surface Induced Disorder

D. Landau, University of Georgia, DLANDAU@uga.cc.uga.edu

Dynamics of Interacting Strings

P. Duxbury, Michigan State University, DUXBURY@msupa.pa.msu.edu

On the Rigidity of Quantum Interfaces

A. Messenger, Marseille, messenger@cptvax.in2p3.fr

Phase Transitions and Quantum Effects in Adsorbed Layers

P. Nielaba, University of Mainz, nielaba@cleopatra.physik.uni-mainz.de

Phase Separation in Anisotropic Systems

S. Puri, Jawaharlal Nehru University, puri@jnuniv.ernet.in

Dynamical Understanding of Metastability and Continuation through the Critical Point

S. B. Shlosman, UCI, shlosman@math.uci.edu

Why Fractal Patterns? A First-Principles Approach

R. Blumenfeld, Cambridge Hydrodynamics, rafi@xi.com

Phase Transitions of the Flux Line Lattice in High-Temperature Superconductors in the Presence of Disorder

Y. Y. Goldschmidt, University of Pittsburgh, yygold@yadin.phyast.pit.edu

ROUND TABLE: BUBBLE RAFTS AND FOAMS

J. Taylor, Chair

Stabilizing Effects of Plateau Borders

K. Brakke, Susquehanna University, brakke@erenj.com

The Role of Dissipation in Bubble Dynamics

D. Durian, UCLA, durian@physics.ucla.edu

Experimental Measures of Elasticity and Dissipation in Compressed Emulsions

D. Weitz, University of Pennsylvania, weitz@dept.physics.upenn.edu

Elasticity of Compressed Emulsions

G. S. Grest, Exxon, gsgrest@erenj.com

SHORT COMMUNICATIONS

Universal Finite-Size Correction to the Cluster Number for Percolation and the Ising Model

P. Kleban, University of Maine, kleban@maine.maine.edu

On the Dynamics of Infinite Dimensional Hamiltonian Particle Systems

O. Knill, University of Arizona, knill@math.arizona.edu

Studies on the Dilute Ising Model

H. Feldmann, SUNY at Stony Brook, feldmann@insti.physics.sunysb.edu

Random Field Magnets

R. Fisch, Washington University, rxf@howdy.wustl.edu

Griffiths' Singularities in Ising Models on the Cayley Tree

J. C. A. Barata and *D. H. U. Marchetti, University of Sao Paulo, marchett@ime.usp.br

Frustrated Ising Models on Husimi Trees

J. Monroe, Penn State University, jim5@psu.edu

Clustering in 2D Ising Model at Relatively Low Temperature

B. Wu and P. Leath, Rutgers University, wubq@physics.rutgers.edu

Transport of Particles and Random Non-Hermitian Matrices

*Z. Jane Wang, Oxford/Courant, and J. T. Chalker, Oxford University, jwang@clunker.cims.nyu.edu

Effect of the Quality of Sampling on Results of Monte Carlo Simulations of One-Dimensional Biased Single- and Two-Species Reactions

*A. Cadilhe and V. Privman, Clarkson University, cadilham@kepler.sos.clarkson.edu

The Finite Ice-Model: Coexistence of the Frozen and Temperate Zones

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Phase Separation in the Neutral Falicov-Kimball Model

T. Kennedy, University of Arizona, tkg@altar.math.arizona.edu

Density Profiles in Random Quantum Spin Chains

*H. Rieger, Julich, heiko@h1rz9.hlrz.kfa-juelich.de, and F. Igloi, Research Institute for Solid State Physics, Budapest

Supersymmetry and Localization in the Quantum Hall Effect

*J. Kondev and J. B. Marston, Brown University, jane@barus.physics.brown.edu

Numerical Study of a Superconducting Glass Model

J. M. Kosterlitz and *M. V. Simkin, Brown University simkin@barus.physics.brown.edu

Results for Nonlinear Quantum Time-Evolutions

G. A. Goldin, Rutgers University, gagoldin@dimacs.rutgers.edu

Geometric Quantization of Vortices in Superfluid Helium: Some New Results

G. A. Goldin, Rutgers, *R. Owczarek, Rutgers, mathgstn@math.rutgers.edu, and D. H. Sharp, Los Alamos National Laboratory

The Mechanical Response of a Vacuum

R. Golestanian, Zanjan, Iran, and *M. Kardar, MIT, kardar@cmt2.mit.edu

Spin-1 Ising-Model Thermodynamics in the Mean Spherical Approximation

J. S. Hoye, Norwegian Institute of Technology, and *G. Stell, Stony Brook, gstell@xray3.chem.sunysb.edu

Phase Diagram of the Lattice Restricted Primitive Model

*R. Dickman, Lehman College, CUNY, dickman@lcvox.lehman.cuny.edu, and G. Stell, SUNY, Stony Brook

Monte Carlo Methods for Non-Integer q -State Random Cluster Models

J. Jiang, *J. Machta, University of Massachusetts, machta@phast.umass.edu, and L. Chayes, UCLA

- Monte Carlo Study of the Widom-Rowlinson Fluid Using Cluster Methods
*G. Johnson, H. Gould, Clark, J. Machta, University of Massachusetts, and L. K. Chayes, UCLA, gjohnson@bethe.clarku.edu
- Entropy difference between hcp and fcc hard sphere crystals, obtained by a new simulation technique
*S.-C. Mau and D. Huse, Princeton University, siumau@feynman.princeton.edu
- Free Energy of a Semiflexible Polymer in a Tube
T. W. Burkhardt, Temple University, V5328E@VM.TEMPLE.EDU
- Floppy Modes and Rigidity Percolation
*D. J. Jacobs, X. Yu-Qing and M. F. Thorpe, Michigan State University, jacobs@pa.msu.edu
- Geometrical Properties of a Super-rough Surface
*C. Zeng, D. McNamara and A. Middleton, Syracuse University, chen@npac.syr.edu
- Gap Independence and Lacunarity in Percolation Clusters
*J.-P. Hovi, Helsinki University of Technology, hovi@math.yale.edu, A. Aharony, Tel Aviv University, D. Stauffer, Cologne University, and B. B. Mandelbrot, Yale University
- Nonstationary Optimal Paths and Tails of Prehistory Probability Density in Multistable Stochastic Systems
*B. E. Vugmeister, J. Botina and H. Rabitz, Princeton University, vugmeister@grieg.princeton.edu
- Ising Spins with Fixed Ferromagnetic and Random SK Interactions
F. Comets, University of Paris, G. Giacomin, Zurich, and *J. L. Lebowitz, Rutgers University, lebowitz@math.rutgers.edu
- Evidence for Existence of Many Pure States in Realistic Spin Glasses from Ground State Computations
*A. K. Hartmann, University of Heidelberg, hartmann@tphys.uni-heidelberg.de
- Memory Stabilization Using Noise
*M. L. Povinelli, S. N. Coppersmith, University of Chicago, mlpovine@midway.uchicago.edu
- Laser Induced Freezing Into Quasicrystalline-Order in Colloids
C. Das and *H. R. Krishnamurthy, IISc, India, hrkrish@cmt.harvard.edu
- Semi-Phenomenological Theories of Nucleation
*C. F. Delale, Tubitak Research Institute for Basic Sciences, Turkey, delale@mam.gov.tr
- The Poisson Ratio of Crystalline Surfaces
*M. Falcioni, M. Bowick, E. Gutter and G. Thorleifsson, Syracuse University, falcioni@npac.syr.edu,

Gel Formation in a Nearly Adhesive Hard-Sphere Fluid

*N. V. Brilliantov, and J. P. Valleau, University of Toronto,
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Rough Cracks and Minimum Energy Surfaces

*M. J. Alava, Nordita, Denmark, alava@nordita.dk, V. I. Risaanen,
Stuttgart, E. T. Seppala, Helsinki University of Technology, and
P. M. Duxbury, Michigan State University

Domain Statistics in the Nonequilibrium Ising Model

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Universal Corrections to Scaling in Reaction-Diffusion Systems

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Three-Species Diffusion-Limited Reaction with Continuous Density-Decay Exponent

*J. W. Lee and V. Privman, Clarkson University, jwlee@craft.camp.
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Perturbation Theory for the Breakdown of Mass-Action Kinetics in Diffusion-Controlled Chemical Systems

*M. V. Velikanov and R. Kapral, University of Toronto, mvelikan@
alchemy.chem.utoronto.ca

Multifractal Properties of Transit Time Sequences in Ricepiles

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Some Growth Models

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Nonequilibrium Neural Network

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Neuroautonomic Feedback Regulation of the Cardiac Rhythm

*L. Amaral, MIT, P. Ivanov, Boston University, A. Goldberger,
Harvard Medical School, and G. Stanley, Boston University,
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Modeling Ocular Dominance and Orientation Columns in the Visual Cortex

*D. Pierre and M. Kardar, MIT

Analog Quantum Computation and Statistical Mechanics

V. Privman, Clarkson University, privman@albert.phy.clarkson.edu

Dislocation Lines in Two-Sided Flux Array Decorations

*M. Carmen Miguel and M. Kardar, MIT

Phase Separation in a Binary Mixture: Hydrodynamic Effects

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- Critical Hysteresis for n-Component Magnets
M. Kardar and *R. da Silveira, rava@mit.edu
- Phase Transitions in Cubic Systems in the Presence of a Random Field
*D. Nicolaides, Bloomfield College, and A. A. Lisyansky, Queens College, Dnicola@aol.com
- Step Dynamics and Morphological Evolution on Surfaces
*B. Blagojevic and P. M. Duxbury, Michigan State University, blagojevic@pa.msu.edu
- Nearest Neighbor Universalities on Closed Surfaces
*A. G. Percus, and O. C. Martin, Universite Paris-Sud, Orsay percus@ipno.in2p3.fr
- Sensitivity of Ballistic Deposition to Pseudorandom Numbers
*R. M. D'Souza and M. Kardar, MIT and Y. Bar-Yam, Boston University, raissa@mit.edu
- Ground State Entropy of q-state Potts Antiferromagnets: Rigorous Upper and Lower Bounds, and Comparison with Series and Monte Carlo Measurements. Exact Results on Chromatic Polynomials and Their Limits, and Connections with q-state Potts Antiferromagnets
R. Shrock and *S.-H. Tsai, SUNY at Stony Brook, tsai@insti.physics.sunysb.edu
- On the Wolff Algorithm for the Plane Rotator
*L. Chayes, UCLA, lchayes@sonia.math.ucla and J. Machta, University of Massachusetts
- Computer Assisted Proof of Uniqueness of Phase for the Hard-Square Gas in Two Dimensions via Dobrushin-Shlosman Theorem
D. Radulescu, Rutgers University, rdan@raleigh.ibm.com
- Phase Transition in a Continuum Fluid with Finite Range Forces and No Symmetry
J. L. Lebowitz, *A. Mazel, Rutgers University, mazel@math.rutgers.edu, and E. Presutti, University of Rome II
- Analytical Theory of Diffuse Scattering from Distributions of Non-Overlapping Structures
*G. Uimin, Landau Institute, uimin@thp.uni-koeln.de or mila@northstar.dartmouth.edu, and P.-A. Lindgard, Denmark
- Escape Orbits and Dynamics of Infinite Step Billiards
M. Degli Esposti, University of Bologna, G. Del Magno, Georgia Institute of Technology, and *M. Lenci, Rutgers University/Princeton University, marco@math.princeton.edu