

Program of the 86th Statistical Mechanics Meeting Celebrating the 70th Birthday of Michael E. Fisher

Rutgers University, December 16–18, 2001

Please note that in many cases there is only one speaker listed, although the work may have been done with collaborators. Also, the addresses may be incomplete.

Information about past and future meetings, as well as positions wanted and available can be obtained at <http://www.math.rutgers.edu/events/statmech.html>.

The next Statistical Mechanics Meeting will take place May 18–20, 2003, at Rutgers University.

Joel L. Lebowitz

REVIEW TALKS

Earthquakes, Phase Transitions, and Organized Self-Criticality

D. S. Fisher, Harvard University, fisher@physics.harvard.edu

Splintered Electrons in Strongly Correlated Materials

M. P. A. Fisher, University of California, Santa Barbara, mpaf@itp.ucsb.edu

Particle-Hole Symmetric Localization

D. A. Huse, Princeton University, huse@princeton.edu

Can a Signal Travel Faster in a Composite than in Its Constituent Phases?

G. W. Milton and K. Solna, University of Utah, milton@math.utah.edu

Connecting Local Structure to Interface Formation: Generalized van der Waals Theory of Nonuniform Fluids

J. D. Weeks, University of Maryland, jdw@ipst.umd.edu

Old and New Results on Multicritical Points

A. Aharony, Tel Aviv University, aharony@post.tau.ac.il

Casimir Forces in Critical Fluids

S. Dietrich, Max-Planck-Institut für Metallforschung and University of Stuttgart, dietrich@mf.mpg.de

Critical Phenomena in Fluids with Competing Order Parameters

J. V. Sengers, University of Maryland, sengers@ipst.umd.edu

The Puzzling Slow Dynamics of Liquid and Glassy Water

H. E. Stanley, Boston University, hes@buphy.bu.edu

The Hydrophobic Heat-Capacity Anomaly

B. Widom and P. Bhimalapuram, Cornell University, widom@wisteria.chem.cornell.edu

Surface Tension of Electrolyte Solutions

Y. Levin, Universidade Federal do Rio Grande do Sul, levin@if.ufrgs.br

From Polymers to Primitive Models to Polyelectrolytes

G. Stell, SUNY at Stony Brook, gstell@sbchm1.chem.sunysb.edu

Korteweg's Theory of Plaits on Surfaces (1891)

A. Levelt Sengers, NIST, johanna.sengers@nist.gov

DNA Denaturation

D. Mukamel, Weizmann Institute, fnmukaml@wisemail.weizmann.ac.il

Structural Transition in DNA Packaging

D. Jasnow, University of Pittsburgh, jasnow + @pitt.edu

Cross-over Scaling Functions for Two-Dimensional Vesicles, and the Yang-Lee Edge Singularity

J. Cardy, Oxford University, cardy@thphys.ox.ac.uk

The Statistical Physics of Rotating Superfluids

D. Thouless, Washington University, thouless@phys.washington.edu

Puzzles—and Maybe Some Solutions—in the Physics of Fracture

J. S. Langer, University of California, Santa Barbara, langer@physics.ucsb.edu

Whose Knowledge?

N. D. Mermin, Cornell University, mermin@ccmr.cornell.edu

Random Matrices in Various Contexts

E. Brezin, Ecole Normale Supérieure, Paris, Edouard.Brezin@ens.fr

Convective Turbulence: Between Geometry and Algebra

L. P. Kadanoff, University of Chicago, l-kadanoff@uchicago.edu

Human Rights Session, M. J. Fisher on Technology for Economic Growth and Job Creation in Africa, J. L. Lebowitz, and others

3D Normal Metals in the Strong Magnetic Field: Topology and Dynamical Systems

S. Novikov, University of Maryland, novikov@ipst.umd.edu

Statistical and Probabilistic Problems in Metallurgy: Thirty Years Later

J. W. Cahn, NIST, john.cahn@nist.gov

Unzipping DNA and the Sinai Problem

D. R. Nelson, Harvard University, nelson@cmt.harvard.edu

Statistical Mechanics and Biomembranes

J. F. Nagle, Carnegie Mellon, nagle + @andrew.cmu.edu

Cluster Analysis of Gene Expression Data

E. Domany, Weizmann Institute, fedomany@wicc.weizmann.ac.il

Infering Coregulated Genes by Clustering Sequence Motifs

E. Siggia, Rockefeller University, siggia@eds1.rockefeller.edu

Noise in the Brain: Mechanisms and Functional Consequences

H. Sompolinsky, Hebrew University, haim@fiz.huji.ac.il

Movements of Molecular Motors

R. Lipowsky, Max-Planck-Institute of Colloids and Interfaces (MPIKG), Potsdam/Golm, lipowsky@mpikg-golm.mpg.de

Genetic and Biochemical Networks: How to Live with All This Noise?

S. Leibler, Rockefeller University, sudulj@rockefeller.edu

Round Table on Statistical Physics and Biology: What Is the Connection

with E. Domany, S. Leibler, R. Lipowsky, J. F. Nagle, E. Siggia, H. Sompolinsky

Helium in Vycor; a Test of Hyperuniversality

J. D. Reppy, Cornell University, jdr13@cornell.edu

Decoherence in Mesoscopic Systems

R. A. Webb, University of Maryland, rawebb@squid.umd.edu

On Analytic Properties of Scaling Function in 2D Ising Model

S. Zamolodchikov, Rutgers, sashaz@physics.rutgers.edu

New Techniques for Localization Properties of (Continuum) Schrödinger Operators

M. Aizenman, Princeton University, aizenman@math.princeton.edu

Double Conformal Multifractality

B. Duplantier, CEA, Saclay, bertrand@sph.t.saclay.cea.fr

Branched Polymers and Dimensional Reduction

J. Imbrie, University of Virginia, ji2k@virginia.edu

The Law of Invariant Mortality

M. Ya. Azbel, University of California, Santa Barbara and Tel Aviv University, azbel@post.tau.ac.il

Quasiperiodic Ising Models

H. Au-Yang, Oklahoma State University, perk@okstate.edu

Brownian Surfaces

J. Leandre, University of Nancy, France, Remi.Leandre@antares.iecn.u-nancy.fr

SHORT COMMUNICATIONS (* Indicates Speaker)

Demixtion of Polymer Solutions

*J. S. Hager, M. A. Anisimov, and J. V. Sengers, University of Maryland, johannes@glue.umd.edu

Chain Cooperativity and Bipolymer Stretching

*C. Storm and P. Nelson, University of Pennsylvania, storm@physics.upenn.edu

Polymerization in Sulfur Viewed by Acoustics

C. Moody and *V. Kozhevnikov, University of Utah, vkozhev@physics.utah.edu

Influence of Expansion on Hierarchical Structure

*B. N. Miller, TCU and Jean-Louis Rouet, Universite d'Orleans

Dynamical Simulation of Phase Transition in a Model Gravitational System

P. Klinko and *B. N. Miller, TCU

Dynamics of Avalanches in Disordered Ferromagnets with Non-Zero Temperature

A. Traveset, R. A. White, and K. Dahmen, University of Illinois at Urbana, travesse@ux1.cso.uiuc.edu

Step-Step Correlations on Vicinal Surfaces: An Alternative to Terrace-Width Distributions

*T. L. Einstein, University of Maryland, einstein@umd.edu, H. L. Richards, Texas A&M University-Commerce, Hailu Gebremariam Bantu, University of Maryland, and S. D. Cohen, Columbia University

Localization, Resonance and Non-Hermitian Quantum Mechanics

N. Hatano, Aoyama Gakuin University, hatano@phys.aoyama.ac.jp

The Diffusive Continuity Equation

R. F. Streater, King's College, London, ray.streater@kcl.ac.uk

Fractional Calculus Approach to the Excess Wing in the Dielectric Relaxation of Glass Formers

R. Hilfer, University of Stuttgart, hilfer@ica1.uni-stuttgart.de

Universality of Critical Phenomena in Ionic Systems

*A. Ciach, Institute of Physical Chemistry PAS, Warsaw, Poland aciach@ichf.edu.pl, and G. Stell, SUNY at Stony Brook

Towards a General Entropy Functional for Multipolar Systems: The Ions-Dipole Mixture

L. Blum, University of Puerto Rico, lesblum@yahoo.com

Universality Class of Criticality in the Restricted Primitive Model Electrolyte

*E. Luijten, University of Illinois at Urbana-Champaign, luijten@uiuc.edu, M. E. Fisher, A. Z. Panagiotopoulos, and Y. C. Kim

From Potts Model Partition Functions to Knot Theory Through Tutte Polynomials—New Exact Results

*S.-C. Chang and Robert Shrock, SUNY at Stony Brook, chang@insti.physics.sunysb.edu

Semi-Flexible Polymer in a Uniform Force Field

A. Lamura, FZ Juelich, Germany/University di Bari, Italy, *T. W. Burkhardt, FZ Juelich/Temple University, tburk@unix.temple.edu, and G. Gompper, FZ Juelich

Dynamics of Breaking of Weak Chemical Bonds. What Is Measured in AFM Experiments?

A. B. Kolomeisky, Rice University, tolya@ruf.rice.edu

Nonequilibrium Thermodynamics of Single Macromolecules and Its Applications

H. Qian, University of Washington, qian@amath.washington.edu

Occurance of Chaos in Simple Neuronal Systems

L. Andrey, Academy of Sciences, Prague, andre@cs.cas.cz

More on the Density of Anchored Clusters in Critical Percolation

*P. Kleban, Maine, kleban@maine.edu, and R. Ziff, Michigan

Zipf's Law in Percolation

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

Conformal Mapping Approaches to Fracture

*H. G. E. Hentschel, Emory University, phshgeh@physics.emory.edu, A. Levermann and I. Procaccia

Can a Net Attractive Potential Increase the Pressure?

G. A. Baker, Jr., Los Alamos National Laboratory, gbj@viking.lanl.gov

Von Neumann Entropy and Quantum Information Rate

Y. Suhov, University of Cambridge, yms@statslab.cam.ac.uk

Probabilistic Analysis of the Phase Space Flow for Linear Programming: A Scaling Theory

A. Ben-Hur, J. Feinberg, *S. Fishman, and H. T. Siegelmann, Technion, Israel, fishman@physics.technion.ac.il

Equilibrium Shapes of Flat Knots

R. Metzler, *A. Hanke, P. G. Dommersnes, Y. Kantor, and M. Kardar, MIT, hanke@MIT.EDU

To How Far, and Why, Does Scaling Persist Away from a Critical Point? Theoretical Considerations

J. A. White, American University, jwhite@american.edu

Hierarchic Trees with Branching Number Close to One: Noiseless KPZ Like Equation for Imitation of 2-d and 3-d Phase Transitions

D. Saakian, Yerevan Physics Institute, Armenia, saakian@jerewan1.YepPhI.AM

Coarsening Dynamics of Biaxial Liquid Crystals

*N. V. Priezjev, priezjev@het.brown.edu, and R. A. Pelcovits, Brown University

Bipolar Water

*T. B. Peery and G. T. Evans, Oregon State University, peeryt@ucs.orst.edu

Simulating the Lebowitz Length in Ionic Systems

*Young C. Kim, Michael E. Fisher, University of Maryland, and Erik Luijten, University of Illinois at Urbana-Champaign, yckim@wam.umd.edu

Thermodynamics of Anisotropic Lattice Coulomb Systems

*V. Kobelev, A. B. Kolomeisky, Rice University, volk@rice.edu

Nonequilibrium Thermodynamics Induced by Discrete Breathers

G. P. Tsironis, University of Crete, gts@physics.uoc.gr

Nonlinear Averages, Renyi Thermostatistics, and Powerlaw Decay

*J. Naudts, Antwerp University, Jan.Naudts@ua.ac.be, and M. Czachor, Technical University of Gdansk

Dynamics of a Josephson Array in a Resonant Cavity

*E. Almaas, D. Stroud, The Ohio State University, saamla@pacific.mps.ohio-state.edu

Diffusive Annihilation and Stochastic Ginzburg-Landau Equation

*I. Fatkullin and E. Vanden-Eijnden, Courant Institute, ibrahimf@cims.nyu.edu

Global Existence, Uniqueness and Exponential Decay to Equilibrium for Solutions to the Classical Landau Equation

*C. Lancellotti, M. Kiessling, Rutgers University, carlo@math.rutgers.edu

Transport Coefficients in Some Stochastic Models of the Revised Enskog Equation

*J. Polewczak, CSU, Northridge, jacek.polewczak@csun.edu, and G. Stell, SUNY, Stony Brook

Phase Transition in a Neural Network with Noise

*M. Aldana-Gonzalez and C. Huepe-Minoletti, University of Chicago, maximino@control.uchicago.edu

Recent Results on Capacity Approaching Codes Using Statistical Mechanics

*N. Surlas and A. Montanari, Ecole Normale Supérieure, Paris, Nicolas.Surlas@lpt.ens.fr

Topological Phase Transitions in Frustrated Magnets

B. W. Southern, University of Manitoba, Canada, souther@cc.umanitoba.ca

Basins of Attraction on Random Topography

*N. Schorghofer and D. Rothman, M.I.T., norbert@segovia.mit.edu

Wall-Enhanced Convection in Vibrofluidized Granular Systems

J. Talbot and *P. Viot, Université Pierre et Marie Curie, France, viot@lptl.jussieu.fr

Knots and Random Walks in Vibrated Granular Chains

*E. Ben-Naim, Z. Daya, and R. Ecke, Los Alamos National Laboratory, ebn@lanl.gov

Yang-Lee and Fisher Zeros of Spin Models on Recursive Lattices

N. Ananikian, Yerevan Physics Institute, ananik@jerewan1.yerphi.am

Self-Avoiding Walks and Self-Avoiding Polygons on Hyperbolic Graphs

N. Madras, York University, *C. Wu, Penn State University, ccw3@psu.edu

Monte Carlo Test of SLE Predictions for the Self-Avoiding Walk

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

Invariant Measures for One-Dimensional Anderson Localisation

*T. C. Dorlas, DIAS, dorlas@stp.dias.ie, and J. V. Pule, DIAS and Univ. College Dublin, Ireland

Recent Experimental Advances in Surface Critical Phenomena

Bruce M. Law, Kansas State University, bmlaw@phys.ksu.edu

New Mechanism of Membrane Fusion

M. Mueller, University of Mainz, K. Katsov and *M. Schick, University of Washington, schick@mahler.phys.washington.edu

Microscopic Model for Thin-film Spreading

*D. B. Abraham, Oxford, d.abraham1@physics.ox.ac.uk, R. Cuerno and E. Moro, U. Carlos 3 de Madrid, Spain

T-Dependent Interface Roughness Exponent in 2D Fibonacci-Quasiperiodic Ising Models Using the Lieb-Schultz-Mattis Exact Transfer Matrix and the Fisher Relationship for Surface Tension

C. Henley, Cornell University, clh@ccmr.cornel.edu

Direct Observation of Denaturation Fluctuations in Supercoiled DNA

T. Strick and R. Sachidandam, Cold Spring Harbor Labs, strick@cshl.org

Exact Diagonalization and Quantum Monte Carlo Study of the Spin-1/2 XXZ Model on the Square Lattice

H. Q. Lin, Chinese University of Hong Kong, J. S. Flynn and *D. D. Betts, Dalhousie University, Canada, dbetts@is.dal.ca

Ground State Selection by Quantum Fluctuations

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

Fluctuation and Dissipation in a Liquid Crystal

W. Goldburg, University of Pittsburgh, goldburg@pitt.edu

Understanding Criticality in z:1 Electrolytes

*S. Banerjee and Michael E. Fisher, University of Maryland, shubho@glue.umd.edu

- The Nucleation Rate Pre-Exponential in a Low-Temperature Ising System
*V. A. Shneidman and G. Nita, New Jersey Institute of Technology,
vitaly@oak.njit.edu
- Particle Dynamics in Asymmetric Colloidal Mixtures
S. Bhattacharya and *J. Blawdziewicz, Yale University, jerzy@
stokes.eng.yale.edu
- Elasticity of Nematic Elastomer
*X. Xing, Xiangjun.Xing@Colorado.EDU, L. Radzihovsky, Univer-
sity of Colorado, R. Mokhopadhyay, T. Lubensky, University of
Pennsylvania
- The Ising Model in Genus > 1 and Discrete Riemann Surfaces
*R. Costa-Santos, Barry McCoy, YITP Stony Brook, rcostas@grad.
physics.sunysb.edu
- Universality of the Amplitude Ratio of the Susceptibility in Z-Invariant
Ising Models
J. H. H. Perk, Oklahoma State University, perk@okstate.edu
- Algebraic Structures in Solvable Models of Statistical Mechanics
W. P. Orrick, The University of Melbourne, worrick@ms.unimelb.
edu.au
- Scalability in Parallel Discrete Event Simulations—An Analogy with Non-
Equilibrium Surface Growth
M. A. Novotny, Mississippi State University, G. Korniss, Rensselaer,
and *A. K. Kolakowska, Mississippi State University, akolakowska
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- Packing Limited Growth
*J. Weitz, MIT, jsweitz@segovia.mit.edu, P. Dodds, Columbia Uni-
versity
- Graphical Representations for Vertex Models
*K. Shtengel and L. Chayes, UC Irvine, kirill@uci.edu
- Free Energy Functional for Nonequilibrium Systems: An Exactly Solvable
Case
B. Derrida, ENS, France, *J. L. Lebowitz, E. R. Speer, Rutgers Uni-
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