

Program of the 59th Statistical Mechanics Meeting

Department of Mathematics, Rutgers University,
May 12 and 13, 1988

Dear Reader,

Here are the titles of the talks presented at the May 1988 Statistical Mechanics Meeting. As usual these titles are informal and, in many cases, there is only one speaker listed, although the work may have been done with collaborators. Also, the addresses are incomplete. Anyone who is interested in communicating with a speaker and requires a more complete address may obtain it by writing to me.

The 61st meeting is scheduled for May 11 and 12. In addition to the talks, the program for these meetings also has a "positions wanted" and "positions available" section. If you are interested in receiving the full program of these meetings, please send me a self-addressed envelope.

Please note also the program of the Monte Carlo Workshop at Courant Institute, which has become a regular semiannual event.

Joel L. Lebowitz

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Rutgers University
New Brunswick, New Jersey 08903

On the Positivity of Correlations in Non-Equilibrium Spin Systems

Pablo A. Ferrari, University of Sao Paulo; Joel L. Lebowitz and Christian Maes, Rutgers University

Equilibrium Spin Models and Probabilistic Cellular Automata

Sheldon Goldstein, Roelof Kuik, Joel L. Lebowitz, and Christian Maes

Landau–Ginzburg Bounds on the Magnetization of Spin Models in a Neighborhood of the Critical Point

R. Fernandez, A. D. Sokal, and J. Fröhlich

Upper Critical Dimensions of Random Spin Systems

Hal Tasaki, Princeton University

Spin Correlation in the 2D Ising Model with Linear Defects

Lee-Fen Ko, Clarkson University

Universality Classes of the θ and θ' Points

Peter Poole, Antonio Coniglio, and Naeem Jan, Saint Francis Xavier University; H. Eugene Stanley, Boston University

A New Theoretical Approach to Percolation

Hideki Takayasu, Yale University and Kobe University; Misako Takayasu, Kobe University

Connectivity and Percolation of the Square Well Fluid: Monte Carlo Study

Yee C. Chiew, Rutgers University

Fluids in Pores and Vesicles: An Integral–Equation Approach

Y. Zhou and G. Stell, SUNY at Stony Brook

Infinitely Polydisperse Fluids

Eduardo D. Glandt and David A. Kolke, University of Pennsylvania

Composites and Statistical Physics: Some Connections

Graeme W. Milton, Courant Institute, NYU

Multi-Grid Method for the Random Resistor Problem

Robert G. Edwards, Jonathan Goodman and Alan D. Sokal, NYU

A Mean-Field Theory for the Driven Diffusive Lattice Gas

Ronald Dickman, Lehman College, CUNY

Effective Medium Approximation for the Driven Ising Model in a Non-equilibrium Stationary State

Yitzhak Shnidman, Nina Pesheva, and R. K. P. Zia

Effective Medium Calculation of Transport Coefficients and Phase Diagram for the Driven Ising Model

Nina Pesheva, Yitzhak Shnidman, and R. K. P. Zia

Power Law Decay of Correlations in Stationary Nonequilibrium Lattice Gases with Conservative Dynamics

Jian-sheng Wang, J. L. Lebowitz, J. L. Valles, and M. Q. Zhang

Suppression of Interface Roughness in a 2D Driven Lattice Gas

K. T. Leung and K. K. Mon, University of Georgia; J. L. Valles, Courant Institute; and R. K. P. Zia, Virginia Tech

A New Lattice Model for Thermotropic Liquid Crystals

Louis Petrone and Martha A. Cotter, Rutgers University

Convection in Molecular Dynamics

James Given, I.B.M.

Microscopic Model of Microemulsions

A. Ciach, J. S. Hoye, and G. Stell, NTH, Trondheim, Norway

Cantori in 2D Twist Maps

Peter Veerman, Rockefeller University

Overrelaxation by Reversible Mode Coupling

H. Neuberger, Rutgers University

Goldstone Bosons in Small Systems

H. Neuberger, Rutgers University

Relationship between T_1 and T_2 for Stochastic Relaxation Models

J. Skinner, Columbia University

Observability of Spin-Glass Correlations in Simple Magnetic Scattering

David A. Huse, Bell Labs

A Microscopic Model for Dilute Dipole Glasses

Michael W. Klein, Worcester Polytechnic Institute

Integrable N -State Chiral Potts Model: Order Parameter and Excitation Spectrum

G. Albertini, B. M. McCoy, J. H. H. Perk, and S. Tang, SUNY at Stony Brook

Are the Ground States of Heisenberg Antiferromagnets Disordered Singlets?

R. R. P. Singh, M. P. Gelfand, and D. A. Huse

Zero-Temperature Criticality in 2D Heisenberg Antiferromagnets

R. R. P. Singh, M. P. Gelfand, and D. A. Huse

What is the Lowest Spin for Which Néel Order is Possible in $d=2$?

R. Shankar, Yale University, and G. Murthy, SUNY

Existence of Néel Order in Some Spin-1/2 Heisenberg Antiferromagnet

Tom Kennedy, Princeton University

Mini-Reviews

The Second Family of Solvable 1-D Many Body Problems

Sriram Shastry, Princeton University

Mobile Vacancies Quantum Antiferromagnets

Boris Shraiman, Bell Labs

Cooper Instability of a Conduction Sea in the Presence of a Spin Liquid

N. Andrei and P. Coleman, Rutgers University

Surfaces, Zigzags, and Wetting

Douglas Abraham, Oxford and University of Arizona

Thethered Networks: Elasticity, Rigidity, and Interactions

Mehran Kardar, MIT

Random Walks in Non-Symmetric Random Environments

D. Szász, Rutgers University and Hungarian Academy of Sciences

Ising Models of Relaxation in Structural Glasses

Glenn H. Fredrickson, Hans C. Andersen and Steven A. Brawer

Kinetics of Domain Growth

Gary S. Grest, Exxon Research & Engineering Co.

Surface Tension of Binary Liquid Mixtures

J. S. Rowlinson, Cornell University and Oxford

Theory of Phase Separated Polymer Solutions

Ben Widom, Cornell University

Review Talks

Asymptotic Densities of Diffusing Particles Undergoing Chemical Reactions

Maury Bramson, University of Wisconsin

An Information-Theoretic Organizing Principle for a Perceptual Network

Ralph Linsker, International Business Machines

Roundtable on "Neural Networks and Statistical Mechanics: Is There Any Connection?"

Daniel Fisher, Chair, Iso Kantor, John Moody, John Pearson, Sara Solla, Hector Sussmann, and Harold Szu

1-D Inhomogeneous Ising Model with a Periodic Boundary

J. K. Percus and M. O. Zhang, Courant Institute

Directed Walk Models of Polymers at Interfaces

M. C. T. P. Carvalho and V. Privman, Clarkson University

What Can Critical Adsorption Experiments Tell Us?"

Andrea J. Liu and Michael E. Fisher, University of Maryland

Blume-Emery-Griffiths Model on the Honeycomb Lattice

X. N. Wu and F. Y. Wu, Northeastern University

Possible New Mechanism for First Order Phase Transition in Nearest Neighbor Ising Models

Tane S. Ray, Boston University

Relative Stability of FCC, HCP, and BCC Hard-Sphere Crystals

John F. Marko, Massachusetts Institute of Technology

Quasicrystals and Commensurate-Incommensurate Phase Transitions

Michael Widom, Carnegie-Mellon University

Transfer Matrix Calculation of Phason Elastic Constants in a 2-D Quasicrystal

D.-P. Deng and M. Widom, Carnegie-Mellon University, and C. Henley, Boston University

Equilibrium Faceting Shapes for Quasicrystals

Kevin Ingersent and Paul J. Steinhardt, University of Pennsylvania

Some Rigorous Results on the Validity of the Wulff Construction and the Generalized Young Equation

J. de Coninck, Mons, and F. Dunlop and V. Rivasseau, Ecole Polytechnique

Crystal Shapes at Grain Boundaries

G. Bilalbegovic and R. K. P. Zia, Virginia Polytechnic Institute and State University, and N. M. Svrakic, Clarkson University

Finite-Size Corrections for the Angle-Dependent Surface Tension: Exact Results for 2-D Models

N. M. Svrakic and V. Privman, Clarkson University, and D. B. Abraham, University of Arizona

Finite-Size Scaling for Wetting Transitions

V. Privman and N. M. Svrakic, Clarkson University

Two Stage Wetting at a Corner

P. M. Duxbury and A. C. Orrick, Michigan State University

Diffusion in Lattice Gases

Philippe Binder, Los Alamos National Laboratory and Yale University

Inter-Particle Distribution Functions in a Diffusion-Limited Reaction

Daniel Ben Avraham and Charles R. Doering, Clarkson University

Hydrodynamic Limit in a Random Medium

Jozsef Fritz, Rutgers University and Hungarian Academy of Sciences

Breakup of Last KAM Toros Due to Stochastic Forces

G. Gyorgyi, Stevens Institute of Technology, and N. Tishby, AT & T Bell Laboratories

Fluctuations in Potts Spin Glasses

Gabriel Cwilich, University of Maryland

Ferromagnetism in the Planar Random Axis Model

Ronald Fisch, Washington University

Molecular Dynamics Calculations for Small Rare Gas Clusters

Kevin E. Schmidt, Courant Institute and New York University, and D. Athanasopoulos, New York University

The Double Parabola Model: A Frenkel-Kontorova Type Model with Non-Convex Interactions

K. E. Bassler and R. B. Griffiths, Carnegie-Mellon University

Exact Theory of Non-Markovian Spectral Diffusion

Boris Laikhtman, Brooklyn, New York

Statistical Mechanics of the Space of Cellular Automata

Howard Gutowitz, Rockefeller University and Los Alamos National Laboratory

Examples of Networks Where Perceptron Learn but Gradient Descent Fails

Joseph Slawny, Virginia Polytechnic Institute and State University

Statistical Mechanics of Sandpiles

C. Tang, P. Bak, and K. Wiesenfeld, Brookhaven National Laboratory

Pattern Selection from Amplitude Equations

Douglas A. Kurtze, Clarkson University

Graph Theory and the Potts Model

Fred Wu, Northeastern University

One-Dimensional Border Model

George A. Baker, Jr., Los Alamos National Laboratory

Possible Resolution of the Finite-Size Scaling Problem in ^4He

W. Huhn and V. Dohm, University of Aachen

Reviews

The Great Red Spot of Jupiter

Harry L. Swinney, University of Texas

Hydrodynamics and Cellular Automata—Where Do We Stand?

Uriel Frisch, University of Nice

Rutgers/NYU Workshop on Quantum Monte Carlo

May 14, 1988, NYU

J. Goodman Theory and Practice of Multigrid Methods

T. Barnes Random Walk Solution of the Schrodinger Equation

T. Zieman 2D Heisenberg Antiferromagnet

D. Kotchan 2D $U(1)$ Gauge Theory

E. Swanson 2D Heisenberg Antiferromagnet

T. Beck Quantum Monte Carlo Dynamic

P. Nielaba Time Correlations in Simple Quantum Systems

J. L. Valles Surface of Fluid He-4

S. Vitiello Bose Symmetric Wave Function for Crystal He-4