

Programs of the 56th and 57th Statistical Mechanics Meetings

Department of Mathematics, Rutgers University, December 18 and 19, 1986 and May 7 and 8, 1987

Dear Reader,

Here are the titles presented at the last two semiannual Statistical Mechanics Meetings. 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 next meeting is tentatively scheduled for December 18 and 19, 1987. In addition to the talks, the program for these meetings 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.

Joel L. Lebowitz

Department of Mathematics, Hill Center
Rutgers University
New Brunswick, New Jersey 08903

December 18 and 19, 1986

Dynamics of Hard Rods near a Hard Wall

T. Vladimiroff, Y. P. Carignan, and A. K. Macpherson, U. S. Army
ARDEC

Ideal Gas Approximation for Hard Sphere Fluids

Martin Burschka, Rockefeller University

One-Dimensional Anisotropic Fluids—Some Surprising Results

J. Percus, Courant Institute, and J. L. Lebowitz and J. Talbot, Rutgers University

Pressure Mixing of a Two-Dimensional Lennard-Jones Mixture in the Solid Phase

K. K. Mon, University of Georgia

The Gap Problem for the Hubbard Chain

A. Kholodenko, Clemson University

Field-Symmetry Induced Transitions and Analytic Continuation in Cubic Models ($n \geq 0$)

P. D. Gujrati, University of Akron

Polymer Chain at a Liquid-Liquid Interface

Robert J. Rubin, National Bureau of Standards

Effective Elastic Moduli of Suspensions of Impenetrable Spheres

Asok K. Sen, S. Torquato, and F. Lado, North Carolina State University

Statistical Properties of a Sedimenting Suspension of Spheres in a Fluid

Russel Caflisch, Courant Institute, and Jonathan Luke, University of Minnesota

Kinetic Theory of Light Scattering of Colloids

E. G. D. Cohen, I. M. de Schepper, and A. Campa, Rockefeller University

Exponential Decay of Probabilities in Ferromagnetic Systems

Richard S. Ellis, University of Massachusetts

Second-Order Large-Deviation Estimates for Ferromagnetic Systems in the Phase Coexistence Region

Roberto Schonmann, Cornell University

The Phase Transition in a General Class of Ising-Type Models Is Sharp

Michael Aizenman and David Barsky, Rutgers University, and Roberto Fernandez, University of Texas at Austin

Rigorous Low-Density Expansion for a Two-State Random Walk

G. Lawler, Courant Institute and Duke University

Breakdown of Self-Similar Dynamical Scaling in the Dilute Ising Model

D. Chowdhury and J. D. Gunton, Temple University

Wetting of Disordered Substrate: Exact Results

G. Forgacs, J.-M. Luck, Th. Nieuwenhuizen, and H. Orland, Clarkson University

Exact Results for a Disordered $d=2$ Ising Model

G. Murthy and R. Shankar, Yale University

Ferromagnet on the Bethe Lattice with Random Coupling

J. M. Carlson, J. T. Chayes, L. Chayes, and J. P. Sethna, Cornell University, and D. J. Thouless, University of Washington

Bethe Lattice Spin Glass in an External Field

J. T. Chayes, L. Chayes, and J. P. Sethna, Cornell University, and
D. J. Thouless, University of Washington

Fisher Renormalization of the Critical Behavior in the Random-Field Problem

Robert G. Caflisch, University of Rhode Island, and Po-Zen Wong,
Schlumberger-Doll Research

Correlation Length Bounds for Disordered Systems

J. T. Chayes and L. Chayes, Cornell University, D. S. Fisher, AT & T
Bell Laboratories, and T. Spencer, Institute for Advanced Study

Height Probabilities in Solid-on-Solid Models

G. E. Andrews, Pennsylvania State University, and P. J. Forrester,
SUNY at Stony Brook

Electric Correlation Function for the 8-Vertex Model for $T \rightarrow T_c$ to First Order in the 4-Spin Coupling

Lee-Fen Ko, Rockefeller University, and Barry M. McCoy, SUNY at
Stony Brook

Asymptotic Behavior of Defect Pair Interaction in One-Dimensional Systems at $T=0$

Leihan Tang and R. B. Griffiths, Carnegie-Mellon University

Ground States of the Lattice Model of Microemulsions

Michael D. Lipkin, Kenneth Dawson, and Benjamin Widom, Cornell
University

Lattice Model of Microemulsions

K. Dawson, University of Leeds

Mean Field Theory of a Lattice Model for Micellar Solutions

Yitzhak Shnidman, Virginia Polytechnic Institute and State University

Star Polymers with Geometrical Constraints

M. N. Chee and S. G. Whittington, University of Toronto

End Patterns of Self-Avoiding Walks

Neal Madras, University of Toronto

The Resistivity-Dependent Phase Transition in Granular Superconductors

S. Chakravarty, Cornell University, S. Kivelson and G. Zimanyi,
SUNY at Stony Brook, and Bertrand Halperin, Harvard University

Failure Distribution of Breakdown in Random Media

P. Duxbury, Michigan State University, and P. L. Leath, Rutgers
University

Universal Scaling in Dissipative Systems

C. Chen, G. Györgyi, and G. Schmidt, Stevens Institute of Technology

Classical Lattice Gas Model with a Unique Nondegenerate but Unstable Periodic Ground State

Jacek Miekisz, University of Texas at Austin

The Stability of Stoichiometries in Alloys

Jacek Miekisz and Charles Radin, University of Texas at Austin

Local Stability of Quasicrystals

O. Biham, D. Mukamel, and S. Shtrikman, The Weizmann Institute

Exact Vibrational Frequencies and Debye–Waller Factor of an Icosahedral Polytope

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

Rayleigh Scattering and Weak Localization: Geometric Effects

Gabriel Cwilich and Michael Stephen, Rutgers University

Multi-Grid Monte Carlo for the 2-Dimensional XY Model

Robert G. Edwards, Johathan Goodman, Alan D. Sokal, and Daniel Zwanziger, New York University

Computer Simulation of a Classical Fluid with Internal Quantum States

P. Ballone, Ph. de Smedt, J. L. Lebowitz, and J. Talbot, Rutgers University, and E. Waisman, S-CUBED

Funding Possibilities for Channeling Radiation Theory

Robert J. Barker, Air Force Office of Scientific Research

Mini-Reviews

Surface Roughening Transitions

Marcel den Nijs, University of Washington

Grain Boundary Melting

M. Schick, University of Washington

Crystal Growth at Large Undercoolings

John D. Weeks, AT&T Bell Laboratories

Localization of Classical Waves

Michael Stephen, Rutgers University

Complexity and Ultradiffusion

B. A. Huberman, Xerox Palo Alto Research Center

Kinetics of Chemically Reacting Systems

Sidney Redner, Boston University

Self-Avoiding Walk—What Has Been Proved?

David Brydges, University of Virginia

Phase Diagrams for Systems with an Infinite Number of Ground States

Jean Bricmont, Rutgers University

Theory of Universal and Non-Universal Quantities at the Critical Point of a Fluid

Luciano Reatto, Courant Institute

Review Talk

A New Approach to Interfacial Pattern Formation

Herbert Levine, Schlumberger-Doll Research

Solidification in a Capillary Tube

John Bechhoefer, Hans Guido and Albert Libchaber, University of Chicago

Sidebranching in Dendritic Growth

O. Martin and N. Goldenfeld, University of Illinois at Urbana-Champaign

Dynamics of Interfaces and Velocity Selection

Boris Shraiman and David Bensimon, AT&T Bell Laboratories, and Pierre Pelce, University of Chicago

Effect of Anisotropy on Saffman–Taylor Fingers

Alan T. Dorsey and Olivier Martin, University of Illinois at Urbana-Champaign

Testing Microscopic Solvability for Viscous Fingering

Subir K. Sarkar and David Jasnow, University of Pittsburgh

Pattern Formation in Solidification—A VCR Illustrated Theory

Gunduz Caginalp, University of Pittsburgh

Kinetic Phase Transitions: Mean Field Theory

Ronald Dickman, Lehman College, CUNY

Breakdown of Self-Similar Dynamical Scaling in the Dilute Ising Model

Debashish Chowdhury and J. D. Gunton, Temple University

Roundtable on “Hydrodynamical Computations: Old and New”

Lawrence Hannon, Brosl Hasslacher, David Montgomery, Errico Presutti, David Ruelle, Gerard Vichniac, Doyle Knight, Chair

A Version of Foldy’s Law for a Boson Gas

Calvin Williamson, University of Missouri

Positivity and Power-Law Behavior of Lyapunov Exponents in a Billiard System

K. Ravishankar, SUNY at New Paltz, and B. N. Miller, Texas Christian University

Results on Soft Billiard System

P. R. Baldwin, University of Illinois at Urbana-Champaign

The Stationary State of the Quantum Langevin Equation

Ph. de Smedt, D. Dürr, J. Lebowitz, and C. Liverani, Rutgers University

A Stochastic PDE with Multiplicative Noise

Charles R. Doering, Center for Nonlinear Studies and Theoretical Division, Los Alamos National Laboratory

Discontinuous Effective Behavior of Quasiperiodic Media

Kenneth Golden, Sheldon Goldstein, and Joel Lebowitz, Rutgers University

- Currents in Random Resistor Network
Johathan Machta, University of Massachusetts
- Large Fluctuations of Magnetic Exchange in Disordered Metals
Anu Jagannathan, Rutgers University
- Three-Body Interactions at the Liquid-Vapor Critical Point
Raymond E. Goldstein, Alberto Parola, and N. W. Ashcroft, Cornell University
- Three-State Lattice-Gas Model for Two-Component Adsorption
Per Arne Rikvold, ChemLink, Inc.
- Computationally Efficient Modeling of Ordering of Quenched Phases
Y. Oono and S. Puri, University of Illinois at Urbana-Champaign
- Atomistic Simulations of Two-Dimensional Quasicrystals
Katherine J. Strandburg, Michael Widom, and Robert H. Swendsen, Carnegie-Mellon University
- Monte Carlo Study of Glassy Order in 2-D Lennard-Jones Systems
Y. Joanna Wong and G. V. Chester, Cornell University
- Molecular Dynamic Simulations on Glass Surfaces
S. Garofalini, Rutgers University
- A Molecular Dynamics Simulation of Molecular Beam Epitaxial Growth of Silicon 100 Surface
Edward Gawlinski and James D. Gunton, Temple University
- Scaling and Crossover for Finite Dimensional Spin-Glasses in a Field
Rajiv R. P. Singh, Cornell University
- Some Rigorous Results on the S-K Model
M. Aizenman, J. Lebowitz, and D. Ruelle, Rutgers University
- Irreversible Spin Glasses and Neural Networks
S. A. Solla, ATT Bell Laboratories, J. A. Hertz, Nordita, and G. Grinstein, IBM
- Memory Capacity in Neural Network Models: Some Rigorous Lower Bounds
C. M. Newman, University of Arizona
- Critical Behavior in Cellular Automata Models of Growth
J. Myczkowski and G. Vichniac, MIT
- Metastability Effects in Bootstrap Percolation and CA
Michael Aizenman and Joel Lebowitz, Rutgers University
- Estimation of the Entropy, Correlation Function, and Power Spectrum of Cellular Automata
H. Gutowitz, Jonathan Victor, and Bruce Knight, Rockefeller University
- A Model of Natural Selection That Exhibits a Dynamic Phase Transition
Ed Weinberger, Courant Institute

On the Two-Point Correlation Functions of Ising Spins with Mixed Dynamics

Michael Zhang, Rutgers University

The Vicious Neighbor Problem

R. Tao and F. Y. Wu, Northeastern University

Self-Intersecting Trails and Polymers

A. Guha, H. A. Lim, S. Ramaswang, and Y. Shapir, University of Rochester

On the Infinite Set of Exponents of Fractal Objects

Bertrand Fourcade and A. Tremblay, Cornell University

Oriented Percolation with Long Range

G. Swindle and R. Durrett, Cornell University, and M. Bramson, University of Minnesota

Geometric Critical Exponent Inequalities in Percolations

Hal Tasaki, Princeton University

Exact Hierarchies for Correlated Percolation

James Given, Boston University

Equilibrium Ensemble for Nonlinear Schrödinger Equation Arising in Plasma Physics

E. Speer, Rutgers University

Antiferromagnetic Spin Chains and the Wess–Zumino–Witten Models

Timothy Ziman, Rutgers University

Finite Size Scaling and Conformal Invariance for Dilute Potts Models

U. Glaus, Clarkson University

Hyperuniversality and Renormalization Group in a Finite System

Hong Guo and David Jasnow, University of Pittsburgh

Finite-Size Rounding of Logarithmic Specific Heat Singularities

V. Privman, Clarkson University, and J. Rudnick, UCLA

Bulk, Surface, and Interface Properties of the Ising Model and Conformal Invariance

T. W. Burkhardt and I. Guim, Temple University

Transfer Matrix Monte Carlo: Surface Critical Behavior

M. Peter Nightingale and H. W. J. Blöte, University of Rhode Island

Crossover of Critical Dynamics from the Interface to the Bulk

D. Jasnow and R. K. P. Zia, VPI and State University

Nonuniversal Exponents in Micellar Solutions

Michael E. Fisher and Raymond E. Goldstein, Cornell University

Micro-Reviews

The Border Model and Universality

George A. Baker, Los Alamos National Laboratory

Spin Glasses

David A. Huse, Bell Labs

Review Talks

Linear and Nonlinear Waves

Bernard Souillard, Ecole Polytechnique

Statistical Mechanics of Neural Networks: An Overview

Hanoch Gutfreund, Hebrew University

Relation of Conformal Field Theory and Deformation Theory for the Ising Model

B. M. McCoy and J. H. Perk, SUNY at Stony Brook

A Numerical Study of the Phase Structure of the Q-State Generalization of the Hard Square Model

T. M. Haas, SUNY at Stony Brook

Critical Behavior of a New Class of Statistical Mechanical Models with Continuous Variables and Discretely Valued Interactions

I.-H. Lee, Brookhaven National Laboratory and R. E. Shrock, SUNY at Stony Brook

Two-Phase Flow in a Porous Medium at an Adverse Viscosity Ratio

Vincent Pereira and Carl Gryte, Columbia University

Two-Series Partial Differential Approximants

J. J. Rehr, University of Washington, and M. J. George, Arkansas State University

May 7 and 8, 1987

A Model of the Universe Viewed As a Self-Organizing System

Sungchul Ji, Rutgers University

Synergetic Theory of Biological Coordination

Gregor Schoner, Florida Atlantic University

Hard Spheres in a Spherical Container

A. K. Macpherson, Lehigh University, and Y. P. Carignan and T. Vladimiroff, Department of the Army

Fluctuations in Gibbs Space: A General Result and Some Possible Applications

Pablo G. Debenedetti, Princeton University

1. From Hubbard Dimer to Hubbard Model (Almost Exact Results)

2. Asymptotic Solution of the Symmetric Electrolyte Problem

Arkady L. Kholodenko, Clemson University

Packing of Charged Hard Spheres Near a Charged Hard Wall

P. Nielaba, F. Forstmann, T. Alts, and B. D'Auguanno, Freie Universität Berlin and Rutgers University

Fermionic Hard Spheres in Infinite Dimensions

Kevin Jensen and Jerome Percus, New York University

Kinetic Theory of Hard Spheres in $D = \infty$

Y. Elskens and H. L. Frisch, State University of New York at Albany

Large Deviations from the Hydrodynamical Limit

Claude Kipnis, Ecole Polytechnique, and Stefano Olla, Rutgers University

Stability of Matter

Rafael de la Llava, Princeton University

Ultraviolet Stability in Gauge Field Theories

Tadeusz Balaban, Northeastern University

Destabilization of Islands in Noisy Hamiltonian Systems

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

Adhesive Spheres Have No Thermodynamics

G. Stell, SUNY at Stony Brook, and G. O. Williams, SUNY at Albany

Percolation in Binary Mixture of Adhesive Spheres

Y. C. Chiew, Rutgers University

Percolation in Correlated Systems

J. Bricmont, J. L. Lebowitz, and C. Maes, Rutgers University

Hyperscaling Inequalities for Percolation

Hal Tasaki, Princeton University

On the Upper Critical Dimension of Bernoulli Percolation

J. T. Chayes and L. Chayes, Cornell University

Projections of Equilibrium Measure Don't Come from Potentials

Roberto Schonmann, Cornell University

Loop-Erased Self-Avoiding Random Walk in Two and Three Dimensions

Gregory F. Lawler, Duke University and Courant Institute

The Scaling Limit of Self-Avoiding Random Walk in High Dimensions

Gordon Slade, McMaster University

Arbitrarily Slow Decay of the Velocity Autocorrelation Function for Diffusion in Quasiperiodic Potentials

K. Golden and S. Goldstein, Rutgers University

Exact Solution for a Finite-Size Rounded First-Order Wetting Transition in the 2D Ising Model

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

Universal Finite-Size Scaling Amplitude for Critical Interfacial Tensions of a Model Lennard-Jones Mixtures

K. K. Mon, University of Georgia

How Thick Is a Liquid-Vapor Interface?

David Heath, University of Virginia, and J. K. Percus, Courant Institute

Order at Low Temperature

J. Miekisz and C. Radin, University of Texas

Exact Thermodynamics and Critical Exponents ($\theta = 0$, $v_{\parallel} = 1$, $v_{\perp} = 1/2$) of the Partially Directed Compact Lattice Animal Problem on the Square Lattice

G. Forgacs and V. Privman, Clarkson University

Storage Capacity of Generalized Networks

Yair Arian, Boston University

Numerical Simulation of Unsteady Flow in Hele-Shaw

Leonard Schwartz, Rutgers University

The Size and Location of the Largest Current in a RRN

Y. Li and P. M. Duxbury, Michigan State University

Rigorous Bounds on Convergence Rates for Some Monte Carlo Algorithms

Gregory Lawler, Alan Sokal, and Larry Thomas, Courant Institute

The Role of Fluctuations in Fluid Mechanics and Dendritic Crystal Growth

H. Eugene Stanley, Boston University

Dynamical Metastability

Lawrence S. Schulman, Clarkson University

Nonclassical Nucleation

William Klein, Boston University

Nonlinear Excitations in Conducting Polymers

David Campbell, Los Alamos National Laboratory

Phase Transitions to Incommensurate Structures

David Mukamel, International Business Machines

Finite-Size Scaling: Relation to Yang-Lee Theory

V. Privman, Clarkson University

New Exact Results in $D = 2$ Random Bond Models

R. Shankar, Yale University

Non-Universal Critical Dynamics

R. H. Swendsen, Carnegie-Mellon University

Review Talks

Weak Interactions and Local Order in Fully Developed Turbulence

Steven Orszag, Princeton University

Scaling and Statistical Mechanics for Complicated Objects

Mitchell Feigenbaum

Roundtable on "Statistical Mechanics for New Materials"

E. Abrahams, Chair, G. Baskaran, J. Hirsch, G. Kottliar, E. Lieb, and T. Ziman

Polymer Shapes in Different Dimensions

Marvin Bishop, Manhattan College, and Craig Saltiel, Columbia University

New Monte Carlo Method for Lattice Chains

Ronald Dickman, Lehman College, CUNY

Extremal Properties of Conditional Entropy

Mary Beth Ruskai, University of Lowell

On the Heilmann–Lieb Model of Liquid Crystals

Jean Bricmont, Rutgers University, and Joseph Slawny, Virginia Polytechnic Institute and State University

Hybrid-Order Phase Transition of the $D=3$ Random-Field Ising Model from a Global Renormalization-Group Calculation

Susan R. McKay, University of Maine, and A. Nihat Berker, Massachusetts Institute of Technology

Spin–Spin Correlations in Finite Systems with $O(n)$ Symmetry

Surjit Singh and R. K. Pathria, University of Waterloo

Role of Fluctuations in Determining Finite-Size Effects in a System Undergoing a Phase Transition

Surjit Singh and R. K. Pathria, University of Waterloo

Boundary Conditions, Fluctuations, and Localization in Disordered Media

R. Fisch, Washington University

Intensity Correlation Functions of Light Scattered from a Random Medium

Gabriel Cwilich, Rutgers University

Aharonov–Bohm Oscillations in the Hopping Conductance

Y. Shapir and X.-R. Wang, University of Rochester

Solitons in 1 Dimensional Dzyaloshinski–Moriya Systems

Quing Xia and Peter S. Riseborough, Polytechnic University

Simulating Frustrated Lattice Models

K. Dawson, Cornell University

Imaginary Time Correlation Functions for Some Quantum Systems

Philip de Smedt, Rutgers University

Some Results for Multiorientation “Ising Type” Droplets in Transverse Fields

Michael W. Klein, Wooster Polytechnic Institute

On Star Triangle Relations

James McGuire, Florida Atlantic University

Commuting Transfer Matrices in the Chiral Potts Models and Solutions of Star–Triangle Equations with Genus Larger than One

Helen Au-Yang, Barry M. McCoy, Jacques H. H. Perk, Shuang Tang, and Mu-Lin Yan, SUNY at Stony Brook

Simulation of Steady State Nonequilibrium Lattice System in 3-D

M. Q. Zhang and J. Lebowitz, Rutgers University

- Simulation of Steady State Nonequilibrium Lattice System in 2-D
 J. Lorenzo Valles, New York University, and J. Marro, University of Barcelona
- Replica Monte Carlo for Spin-Glasses
 Jian-Sheng Wang and Robert H. Swendsen, Carnegie-Mellon University
- Conformal Field Theory and the Au(110) Phase Transition
 P. Kleban and R. Hentschke, Cornell University, and J. C. Campuzano, University of Illinois
- Diffusion Limited Aggregation with Anisotropic Capture
 M. E. Msall and D. F. Styer, Oberlin College
- Diffusion on Fibonacci Chains
 M. Khantha, Oxford University
- Anomalous Diffusion in Random Hierarchical Models
 A. Hernandez-Machado, S. Grossmann, and A. Erzan, University of Pittsburgh
- Electric Birefringence in Critical Solutions
 R. Piazza and V. Degiorgio, University of Pavia
- Long Wavelength Stability of Helicoidal Flows
 Richard Peltz, Rutgers University
- Experimental Study of Rayleigh-Benard Convection in Mercury in Cylindrical Boxes
 P. Oswald, J. Stavans, and A. Libchaber, University of Chicago
- Coherent Periodicity versus Domain Wall Motion in Coupled Logistic Maps
 Charles H. Bennett and Geoffrey Grinstein, IBM Research, and C. Jayaprakash and Y. He, Ohio State University
- The Quantized Baker's Transformation
 N. L. Balazs, SUNY at Stony Brook
- A Monte Carlo Study of Spinodal Decomposition in the 2-Dimensional Spin-Exchange Kinetic Ising Model
 Jacques Amar, National Bureau of Standards
- Solutions of Boltzmann Equation for Weakly Inhomogeneous Data
 R. Esposito, Rutgers University and University of Rome

Mini-Reviews

- Functional Renormalization Group for Wetting Transitions
 Michael E. Fisher, Cornell University, and Reinhard Lipowsky, KFA Jülich
- Order in Spin Glasses
 Daniel S. Fisher and David Huse, AT&T Bell Laboratories

Reviews

Fluctuations in Transmission through Disordered Media

Patrick A. Lee, Massachusetts Institute of Technology

Flux Quantization in Aperiodic and Quasi-Crystalline Superconducting Networks and Its Relation to Other Problems in Statistical Mechanics

Paul Chaikin, University of Pennsylvania

Crystal Orientation Textures from Heterogeneous Nucleation

John W. Cahn, National Bureau of Standards and Jean E. Taylor, Rutgers University

Is There an Almeida-Thouless Line in Short-Ranged Ising Spin Glasses?

Rajiv R. P. Singh and M. E. Fisher, Cornell University

Simple Microscopic Model of Microemulsions

Michael Schick, University of Washington