

Program of the 48th Statistical Mechanics Meeting

**Department of Mathematics
Rutgers University**

December 16 and 17, 1982

The last semiannual Statistical Mechanics Meeting was held on December 16th and 17th. The next meeting is tentatively scheduled for May 12th and 13th, 1983.

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 who requires a more complete address may obtain it by writing to:

Dr. Joel L. Lebowitz
Department of Mathematics, Hill Center
Rutgers University
New Brunswick, New Jersey 08903

A Dynamical Phase Transition in the Zero-Range Interaction Model

W. David Wick, Princeton University

Do the Higher Derivatives of the H -Function Alternate in Sign?

J. O. Vigfusson, Universität Zürich

Dobrushin Uniqueness Techniques and the Decay of Correlations in Continuum Statistical Mechanics

David Klein, Louisiana State University

Coulomb Systems and Debye-Hückel Theory

Tom Kennedy, University of Virginia

Classical Ground States

Charles Radin, University of Texas

The Inverse Problem in Classical Statistical Mechanics

J. T. Chayes, L. Chayes, and E. H. Lieb, Princeton University

Microcanonical Ensemble for Gravitational Systems

G. Horwitz, Hebrew University and Harvard University

Supersymmetry and Stochastic Equations

Chiara R. Nappi, Institute for Advanced Study

Irreversible Quantum Dynamics and the Hilbert Space Structure of Quantum Kinematics

Nicolas Gisin, Université de Genève

Computational Study of Joint Concavity of Ising Model Magnetization

Garrett Sylvester, Oklahoma State University

Single Site Distributions and Continuity of the Magnetization at Nonzero Field

Charles M. Newman, Courant Institute and University of Arizona, and
Alan D. Sokal, Courant Institute

One-Dimensional Ising Model in Transverse Field: Correlation Functions and Finite-Temperature Field Theory

J. H. H. Perk^(a), *H. W. Capel*^(b), and *B. M. McCoy*^(a)

Antiferromagnets and Continuum ϕ_4^4 Field Theory

G. Gallavotti, University of Rome, and *V. Rivasseau*, Institute for Advanced Study

Anisotropic n -Vector Model for All Real $n \geq 0$

P. D. Gujrati, University of Chicago

Rigorous Results on Lattice Animals with Cyclomatic Index and Valence Restrictions

S. G. Whittington, *J. E. G. Lipson*, *G. M. Torrie*, and *D. S. Gaunt*,
University of Toronto

Exact Renormalization Group Analysis of Localized States on Fractals

Jayanth R. Banavar and *Marek Cieplak*, Rutgers University

Dimensional Effects on Percolative Conductivity

Sara A. Solla and *Neil W. Ashcroft*, Cornell University

Localization and the Quantum Hall Effect

S. A. Trugman, Cornell University

Extended Scaling Relations for the Magnetic Critical Exponents of the Potts Model

Marcel den Nijs, University of Washington

Quantized Hall Conductance in a Two-Dimensional Periodic Potential

D. J. Thouless, *M. Kohmoto*, *M. P. Nightingale*, and *M. den Nijs*,
University of Washington

Monte Carlo Study of the 2d Arbitrary q -State Potts Model

M. A. Novotny, Northeastern University

^(a) ITP, SUNY, Stony Brook

^(b) Instituut-Lorentz, Leiden

- Yang–Lee Edge Singularity in the Potts Model
M. J. Stephen and L. Mittag, Rutgers University
- Some Comments on Toeplitz Determinants
L. Mittag, Rutgers University
- Quark Confinement as a Free Boundary Problem
B. Gidas, Rutgers University
- Dynamical Behavior of Nonlinear Networks
B. A. Huberman, Xerox Palo Alto Research Center
- Reduced Markov Chains as Stochastic Spin Models
H. Falk, City College of New York
- Time Dependent Correlation in Transverse Ising Model
B. McCoy, R. Shrock, and J. Perk, State University of New York at Stony Brook
- Spin Dynamics of the Anisotropic XY Chain: Exact Results
J. Taylor and G. Müller, University of Rhode Island
- Noise on a One-Dimensional Disordered Lattice
M. J. Stephen and Robert Kariotis, Rutgers University
- A Generalization of Matching Lattices to Many Neighbour Interactions
G. N. Ord and S. G. Whittington, University of Toronto
- Correlated Percolation and Thermal Phase Transitions
Chin-Kun Hu, University of Toronto
- Exact Solution for Invasion Percolation on the Bethe Lattice
David Wilkinson, Schlumberger–Doll Research
- Mean-Field Theory for Thin Liquid–Crystal Films
S. Heinekamp, R. Pelcovits, and R. Pindak, Brown University
- Phase Transitions in New Solvable Hamiltonians by a Central-Limit Minimization
Mehran Kardar, Massachusetts Institute of Technology
- Critical Properties of the 4-State Ashkin–Teller Model
R. Köberle, Harvard University and University of Sao Paulo at Sao Carlos, Brazil
- Self-Triality in the Ashkin–Teller Model
R. Shankar, Yale University
- Critical Properties of the q -State Schick–Griffiths Model
F. Y. Wu, Northeastern University
- Role of the Ashkin–Teller Fixed Line in the Critical Behavior of the n -Component Cubic Model
E. K. Riedel, B. Nienhuis, and M. Schick, University of Washington
- What Can Geometric Measure Theory Do for Statistical Mechanics
F. Almgren, Princeton University
- Connection between Spin Glasses and Optimization
S. Kirkpatrick, International Business Machines

Round Table on Geometrical Concepts in Phase Transitions

M. Aizenman, Rutgers University, *M. Fisher*, Cornell University, Chair, *R. Friedberg*, Columbia University, *C. T. Lubensky*, University of Pennsylvania, *S. Kirkpatrick*, International Business Machines, *L. Russo*, Modena/Princeton University

Quantum Tunneling in the Presence of Dissipation

Peter Riseborough and Peter Hanggi, Polytechnic Institute of New York

Percolation Threshold of a Two-Dimensional Continuum System

Abel Weinrib, Harvard University

Monte Carlo Study of the Corrections to Scaling in Two-Dimensional Percolation

Alla Margolina, H. E. Stanley, and Dietrich Stauffer, Boston University

A Finite-Size Scaling Study of a Two-Dimensional Lattice Gas Model with a Tricritical Point

P. A. Rikvold, W. Kinzel, J. D. Gunton, and K. Kaski, Temple University

Phase Transitions in Centered Rectangular and Square Lattice Gas Models

K. Kaski, W. Kinzel, and J. D. Gunton, Temple University

Fractal Time Random Walk of Dislocations Following a High Velocity Impact

Michael F. Shlesinger and Bruce J. West, University of Maryland

Sliding Friction—A New Dynamic Critical Phenomenon

Daniel S. Fisher, Bell Laboratories

Variational Field Theory for Micelles and Membranes

Frank H. Stillinger, Bell Laboratories

A Study of a Coarse Grained Free Energy Functional for the Three-Dimensional Ising Model

K. Kaski, K. Binder, and J. Gunton, Temple University

Critical Correlations and the Square-Gradient Theory

R. F. Kayser and H. J. Raveché, National Bureau of Standards

Metastability in Medium-Range Ising Models

Dieter W. Heermann, W. Klein, and D. Stauffer, Boston University

Modulated Phases in 2D and 3D: Bethe-Kikuchi Approach

J. Taylor, J. S. Desjardins, and J. C. Bonner, University of Rhode Island

First Principles Alloy Phase Diagrams

John W. D. Connolly, National Science Foundation

Reentrant Phase Transitions in Quenched Random Media

Michael Rubinstein, Boris Shraiman, and David R. Nelson, Harvard University

Fixed Distributions and Modified Harris Criterion Under Strong Quenched Disorder

David Andelman and A. Nihat Berker, Massachusetts Institute of Technology

Solitons and Chaos in Plasma Physics

D. DuBois, Los Alamos National Laboratory

Pattern Selection and Chaos in Convection

P. Hohenberg, Bell Laboratories

Convection in a Finite Box Randomly Heated from Below

A. Karwowski, Rutgers University

Melting and Wetting in the Chiral Clock Model for Commensurate Surface Phases

David A. Huse, Michael E. Fisher, and Anthony M. Szpilka, Cornell University

Unusual Surface Critical Behavior in an Inhomogeneous Semi-Infinite Ising Model

Theodore W. Burkhardt and Ihnsouk Guim, Temple University

The Laplacian Roughening Model; a Monte Carlo Study

David A. Bruce, Harvard University

Monte Carlo Results for the Laplacian Roughening Model

Katherine J. Strandburg, S. A. Solla, and G. V. Chester, Cornell University

A Simple Correction for Size Effects in Monte Carlo Calculations

E. R. Cowley, Rutgers Camden College of Arts and Sciences

Field-Induced Phase Separation in a One-Dimensional Lattice-Gas

M. Robert and B. Widom, Cornell University

Period Doubling in Four-Dimensional Symplectic Maps

Indubala I. Satija, Columbia University and *Bambi Hu*, University of Houston

ϵ -Expansion for Chaotic Transition of Circle Maps

Boris Shraiman, Harvard University

The Revised and Standard Enskog Theories of Diffusion

J. M. Kincaid, M. Lopez de Haro, National Bureau of Standards and *E. G. D. Cohen*, Rockefeller University

Long Time Tails in Two-Dimensional Lennard-Jones Systems

M. Bishop and J. P. J. Michels, Courant Institute

Kinetics of Formation of Randomly Branched Aggregates

Harvey Gould, Clark University, *Ferreydoon Family*, Emory University and *H. Eugene Stanley*, Boston University

Cluster Properties of Kinetic Gelation

Naeen Jan, Turab Lookman, and D. L. Hunter, St. Francis Xavier University

Continuum Percolation with an Excluded Volume Interaction

Edward Gawlinski and Sidney Redner, Boston University

Tricritical Point of Interacting Hard Squares

David A. Huse, Cornell University

Closed-Loop Coexistence, Vaporization, and Multiple Points in Binary Fluids

Robert G. Caflisch and James S. Walker, Massachusetts Institute of Technology

Dynamical Groups and Coexistence—Superconductivity, Charge Density Waves, and Magnetism

Joseph L. Birman, City College, City University of New York *and Allan I. Solomon*, The Open University

New Universality Class in Ferroelectrics

D. Blankschtein, E. Domany, and R. Hornreich, Massachusetts Institute of Technology

Electrons in a One-Dimensional, Quasiperiodic Potential

Rahul Pandit, Cornell University

Localization in a Disordered Elastic Medium Near Two Dimensions

Sajeev John, H. Sompolinsky, Harvard University *and Michael J. Stephen*, Rutgers University

One Dimensional Spin Glass with Long Range Interactions

G. Kotliar, P. W. Anderson, and D. Stein, Princeton University

Mapping of an Antiferromagnet in a Uniform Field Onto a Ferromagnet in a Random Field

Serge Galam, City College, City University of New York

Dangerous Irrelevant Variables Within Mean-Field Theory

Serge Galam and Joseph L. Birman, City College, City University of New York

Metal-Insulator Transition in a Disordered Electron Gas with Short-Range Interactions

M. Ma and E. Fradkin, Massachusetts Institute of Technology

Lie Symmetries of the Fokker-Planck Equation for the Ornstein-Uhlenbeck Process and its Applications

C. C. A. Sastri and K. A. Dunn, Dalhousie University

(a) Phase Transitions in Equilibrium and Nonequilibrium Lattice Systems and (b) Charge and Field Fluctuations in Plasmas

J. L. Lebowitz et al