Program of the 49th Statistical Mechanics Meeting

Department of Mathematics
Rutgers University
May 12 and 13, 1983

The last semiannual Statistical Mechanics Meeting was held on May 12th and 13th. The next meeting is tentatively scheduled for December 15th and 16th, 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

Tree Diagram Bounds and the Critical Behavior in Percolation Models
   M. Aizenman, Rutgers University, and C. Newman, University of Arizona and Hebrew University
Borel Summability of Perturbative Expansion in Asymptotically Free Quantum Field Theories
   V. Rivasseau, Institute for Advanced Study
Extension of Pirogov–Sinai Theory to Phase Transitions in Continuum Systems
   Jean Bricmont, Louvain, *Koji Kuroda* and Joel L. Lebowitz, Rutgers University
Bound for the Critical Percolation Probability in 3-Dimensions
   M. Campanino and L. Russo, Rome, Italy, and Princeton University
Sharp Transition from Area Law to Perimeter Law in a System of Random Surfaces
   M. Aizenman, Rutgers University, J. T. Chayes, *L. Chayes*, Princeton University, J. Frohlich, E.T.H., Zurich, and L. Russo, Princeton University and University of Modena

Some Rigorous Results in Vortex Theory
    C. Marchioro, University of Trento, Italy
Recent Results in Discrete Kinetic Theory
    Reinhard Illner, Duke University
The Rayleigh and Lorentz Models for Dense Fluids
    M. López De Haro and E. G. D. Cohen, The Rockafeller
    University
A New Soluble Approximation to Fokker–Planck Equations
    Jonathan F. Schonfeld, Fermilab
Mean Field Theory of Diffusion-Limited Aggregation
    R. Ball, M. Nauenberg, University of California, and T. A. Witten,
    Exxon Research and Engineering
Diffusion in a Medium with a Random Distribution of Traps
    R. F. Kayser and J. B. Hubbard, National Bureau of Standards
Decay Rates in Bistable Systems in Presence of Correlated Noise
    Peter Hanggi and Peter Riseborough, Polytechnic Institute of New
    York
The Energy of a System of Interacting Hard Disks Near Close Packing
    G. Stell, SUNY at Stony Brook, and O. Penrose, Rutgers University
Classical Ground States
    C. Radin, University of Texas at Austin, and L. S. Schulman, Tech-
    nion
Equilibrium Shape of Crystals on a Table in a Gravitational Field
    Joseph Avron, California Institute of Technology, Jean Taylor, Rut-
    gers University, and Royce Zia, Virginia Polytechnic Institute
Scaling Theory of Lattice Gas Clusters
    Ronald Dickman and William C. Schieve, University of Texas at
    Austin
Domain Walls and Shape Effects on the 2D Ising Model Critical Region
    P. Kleban and G. Akinci, University of Maine
Phase Transitions Between Partially-Ordered Phases
    F. Dowell, Los Alamos National Laboratory
Theory of Pure and Impure Phospholipid Monolayers
    A. Georgallas, D. A. Pink, and M. Zuckermann, McGill University
Tricritical Behaviour of the Polymer Chain
    A. Kholodenko and K. Freed, The James Franck Institute
On Analogy Between the Collapsed Polymer and Liquid Drop Model of
    Atomic Nucleus
    A. Kholodenko and K. Freed, The James Franck Institute
Microfield Distribution in Plasmas
    Carlos Iglesias, Joel L. Lebowitz, and David MacGowan, Rutgers
    University

New Monte Carlo Methods for the Self-Avoiding Walk
    Alberto Berretti and Alan Sokal, Courant Institute (N.Y.U.)
Computer Assisted Solution to Finite Difference Equations with Applications
    James B. McGuire, Florida Atlantic University
Fluctuations in Circular Couette Flow
    R. Schmitz and E. G. D. Cohen, The Rockafeller University
Diffusion in a Periodic Lorentz Gas
    Jonathan Machta, University of Massachusetts, and Robert Zwanzig,
    University of Maryland
Phase Transitions in Current Carrying States of Model Fast Ionic Conductors
    S. Katz, Lafayette College, J. L. Lebowitz, Rutgers University, and H.
    Spohn, University of Munich
Finite Size Effects at First-Order Transitions
    Vladimir Privman and *Michael E. Fisher*, Cornell University
Metal–Insulator Transition and Scaling for Incommensurate Systems
    Mahito Kohmoto, University of Illinois
Random Potts Model
    H. Nishimori and M. J. Stephen, Rutgers University
Lattice Supersymmetric Statistical Models
    Yonathan Shapir, University of Illinois at Urbana–Champaign
The Random Vector Field Model
    Yonathan Shapir, University of Illinois at Urbana–Champaign
Solution of a New Integrable Model
    C. Destri and N. Andrei, Rutgers University
Factorized *S*-Matrix Method for the Thermodynamics of the Massive
    Thirring Model
    S. G. Chung, Y. Oono, and Yia-Chung Chang, University of Illinois at
    Urbana–Champaign
Universality of Low Energy Spin Wave Interactions
    Ed Witten, Princeton University
Boundary–Layer Model of Pattern Formation in Solidification
    E. BenJacob, Nigel Goldenfeld, and *J. S. Langer*, Institute for Theo-
    retical Physics, University of California
Dynamic Theory of Suspensions
    Russel Caflisch and George Papanicolaou, Courant Institute (N.Y.U.)
A New Proof of the Prime Number Theorem via Restrictions Placed on the
    Zeros of the Riemann Zeta Function by Fractal Random Walks
    Michael Shlesinger, I.P.S.T., University of Maryland
Transport Properties of Interacting Brownian Particles and Applications
    George Papanicolaou, Courant Institute (N.Y.U.)

Equilibrium and Nonequilibrium Approaches to Spin Glasses
    Haim Sompolinski, Bell Laboratories and Bar–Ilan University
Round Table on Localization
    Elihu Abrahams, Rutgers University; Phil Anderson, Chair, Bell Labo-
    ratories and Princeton University; Mark Azbel, International Business
    Machines and Tel Aviv University; Patrick Lee, Massachusetts Insti-
    tute of Technology; Tom Spencer, Courant Institute (N.Y.U.)
Size Distribution in Mechanical Fragmentation of Solids: Information
    Theory Approach
    Witold Brostow and Harry C. Rogers, Drexel University
A Simple Derivation of the Caldeira–Leggett Phase Integral
    M. Büttiker, I.B.M. Thomas J. Watson Research Center, and H.
    Thomas, University of Basel
Critical Behavior of a Three-Dimensional Dimer Model
    Somendra M. Bhattacharjee, Carnegie–Mellon University, John F.
    Nagle, Carnegie–Mellon University, David A. Huse, Cornell Univer-
    sity, and Michael E. Fisher, Cornell University
Convergence Properties of "Phenomenological Renormalization Group"
    Data
    Vladimir Privman and Michael E. Fisher, Cornell University
Dimensional Reduction with Correlated Random Fields? A Superspace
    Renormalization-Group Calculation
    Mehran Kardar, Bruce McClain, and Cyrus Taylor, Massachusetts
    Institute of Technology
Correlation Functions of the Transverse Ising Chain at the Critical Field
    for Large Temporal and Spatial Separations
    Barry M. McCoy, Jacques H. H. Perk and Robert E. Shrock, SUNY at
    Stony Brook
Fluctuating Hydrodynamics and Capillary Waves in Presence of a Temper-
    ature Gradient
    Martin Grant, Temple University, and Rashmi C. Desai, University of
    Toronto
Nonexponential Relaxation in Liquids and Glasses
    James L. Skinner, Columbia University
Spherical Reference System for Molecular Fluids
    J. L. Lebowitz, Rutgers University, *J. K. Percus*, Courant Institute
    (N.Y.U.), E. Waisman, S–Cubed, and G. Williams, New York Univer-
    sity
Statistical Mechanics of Fluids with Highly Directional Forces
    Michael Wertheim, Rutgers University
Nucleation Near the Classical Spinodal
    C. Unger and W. Klein, Boston University

Molecular Structure and Hydrogen Bonding at Lower Critical Solution
Points
Raymond E. Goldstein, Massachusetts Institute of Technology
Van der Waals Theory of Interfaces and Anisotropic Kac Potential
John D. Weeks, D. Bedeaux, and B. A. Zilenska, Bell Laboratories
Surface Undulations in Explosive Crystallization: A Thermal Instability
W. Van Saarloos and J. D. Weeks, Bell Laboratories
Ant in a Labyrinth: New Models and Results
H. E. Stanley, K. Kang, S. Redner, and R. Blumberg, Boston University
Long Range Correlated Percolation
Abel Weinrib, Harvard University
Biconnectedness in Percolating Systems
A. B. Harris and T. C. Lubensky, Schlumberger–Doll Research
Loop Corrections on the Cayley Tree
A. B. Harris, Schlumberger–Doll Research
Density of States of a Random Hopping Model on a Cayley Tree
Y. Kim, University of Pennsylvania, and A. B. Harris, Schlumberger–
Doll Research
Competing Short and Long-Range Interactions on a Cayley Tree
Miron Kaufman and Mehran Kardar, Massachusetts Institute of Tech-
nology
Potts Model with Competing Interactions: A Mean-Field Theory
F. Y. Wu, Northeastern University, and J. R. Banavar, Schlumberger–
Doll Research
Field Theoretical Formulation for the Spin Glass Transition in the Random
Potts Model
Mau-chung Chang, Rutgers University
Non-Abelian Glass Models
Ronald Fisch, Washington University
Landau–Ginzburg–Wilson Hamiltonians for Fully Frustrated Systems in D
Dimensions
Daniel Blankschtein, Michael Ma, and A. Nihat Berker, Massachusetts
Institute of Technology
Escape From the Extremely Underdamped Metastable State
M. Buettiker, E. P. Harris, and *R. Landauer*, I.B.M. Thomas J. Watson
Research Center
Cellular Automata and Universality in Self-Organizing Systems
Stephen Wolfram, Institute for Advanced Study
Order and Frustration in Liquids and in Glasses
David Nelson, Harvard University
Critical Phenomena in Systems with Surfaces
Edouard Brezin, Harvard University and Saclay

Random Magnetic Fields in $4 + \epsilon$ Dimensions
    Daniel Fisher, Bell Laboratories
Solutions of Schroedinger Equation on Some Fractal Lattices
    E. Domany, S. Alexander, *D. Bensimon*, and L. P. Kadanoff, University of Chicago, James Franck Institute
Absence of Long Range Order Above 2-D
    Robert Savit, University of Michigan
On the Stability of Relativistic Matter
    E. Lieb and I. Daubechies, Princeton University