Program of the 71st Statistical Mechanics Meeting

Department of Mathematics, Rutgers University

May 11–13, 1994

Dear Reader,

Here are the titles of the talks presented at the last semiannual Statistical Mechanics Meeting. This meeting had an extra day with a session in honor of Oliver Penrose. 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 or contacting me by electronic mail: lebowitz@math.rutgers.edu.

Some of the review talks will appear in the Comment section of future issues of the *Journal of Statistical Physics.*

The next program, the 72nd, is scheduled for 15 and 16 December 1994.

Joel L. Lebowitz

Symposium in Honor of Oliver Penrose's 65th Birthday

Classical Fluid Interfaces
    J. Percus, NYU
Equilibration Rates for Near-Critical Density Profiles
    R. Pego, University of Maryland
Linking Anisotropic Sharp and Diffuse Surface Motion Laws via Gradient Flows
    J. Cahn, NIST
Gradient Flows and the Crystalline Method
    J. Taylor, Rutgers
Comments on Models for Grain Boundary Motion
    P. Fife, Utah

Macroscopic Limits of Particle Systems and Interface Dynamics
    T. Souganidis, Wisconsin
Simulations of the Ising Model with Long-Range Elastic Interactions
    P. Fratzl, Vienna
Two-Time Correlations During Coarsening After a Quench
    D. Huse, AT & T
Remarks on the Decay of Correlations in 2D Models with Symmetries
    M. Aizenman, Princeton
Quantum Irreversibility
    S. Goldstein, Rutgers
Dimerization of Annulenes
    E. Lieb, Princeton
Superfluidity in 2D Helium
    J. Reppy, Cornell
Phase Transitions in Ionic Fluids: Simple Theories for General Dimensions
    M. Fisher, University of Maryland
Correlation Functions in the Cavity Model of Ionic Fluids
    G. Stell, SUNY
Partially Folded States of Proteins: Experiments and Statistical Mechanics
    S. Doniach, Stanford
Protein Design and Folding: How Nature May Solve NP-Complete
Problem
    E. Shakhnovich, Harvard
Motion and Diffusion of a Passive Scalar in a Two-Dimensional Fluid
    M. Stephen, Rutgers

Review Talks

Fluid Interfaces and Spreading at the Molecular Scale
    J. Koplik, CUNY
Quantum Stochastic Resonance
    S. Coppersmith, AT & T
Surface-Induced Finite-Size Effects
    C. Borgs, UCLA
Microscopic Theory of the Kohlrausch Relaxation Constant
    J. Phillips, AT & T
Two-Dimensional Spin Models with Height Representations
    C. L. Henley, Cornell
The Diagnostic of Spatio-Temporal Disorder
    M. Rabinovich, Gorky and San Diego
Playing with Proteins, Assembly and Motion
    A. Libchaber, Princeton and NEC

Dilute Systems
    L. Chayes, UCLA
Rigorous Results on Self-Avoiding Walks
    J. Imbrie, Virginia
Recent Results About Statistics of Random Walks and Polymer Chains
    Y. Sinai, Princeton
Black Holes, Information Loss and Entropy
    T. Banks, Rutgers
Informal Session on Statistical Mechanics in Biological Systems
    Seb Doniach, Eric Siggia, Stan Leibler, P. Hohenberg, Chair

Short Communications

An "Observed" Connection Between Phase Transitions, Free Energy, Fixed Points and Fractal Dimension
    James L. Monroe, Penn State University
Scaling of the Highest Nontrivial Eigenvalue for Diffusion in Random Media
    Sonali Mukherjee and Hisao Nakanishi, Purdue University
Phase Transitions in Cubic Models with Random Anisotropic Exchange
    R. Fisch, Washington University
Precise Characterization of Three-Dimensional Percolating Backbones
    Mark Rintoul and Hisao Nakanishi, Purdue University
Phase Transitions in a Degenerate Generalized Hubbard Model
    A. N. Kocharian and G. R. Reich, Union College, Schenectady
One-Dimensional Quantum Liquid Comprised of Particles with an Arbitrary Number of Internal Degrees of Freedom
    E. B. Kolomeisky, Cornell, and J. P. Straley, Kentucky
Topological Theory of Reptation and the Quantum Hall Effect
    Arkady L. Kholodenko, Clemson
Evaluation of Higher Harmonics for Nonlinear Shear Elastic Waves
    Vladimir Gorentsveig, Kharkov
Novel Critical Behavior of KAM Tori
    Bambi Hu, Houston
The Hard-Disk Electrolyte in Two Dimensions: Beyond the KT Transition
    Yan Levin, X.-J. Li, and Michael E. Fisher, Maryland
Cavity Forces in Electrolytes are Doubly Screened
    Michael E. Fisher, Y. Levin, and Xiaojun Li, Maryland
Do Gaussian-Molecule Mixtures Show Ising Exponents?
    Sheng-nan Lai and Michael E. Fisher, Maryland
Coupled Burgers Equations—A model of Sedimentation
    Sergei Esipov, University of Chicago and University of Illinois

A Correlated Random-Chemical-Potential Model for the Phase Transitions of Helium Mixtures in Porous Media
    A. Nihat Berker and Alexis Falicov, MIT
Harmonic Lattice in an Incommensurate Potential
    Eugene M. Chudnovsky and Ron Dickman, CUNY
Exactly Solvable Model of an Upsilon Point
    Pierre Delaly and Robert B. Griffiths, Carnegie-Mellon
Interface Pinning Mechanism for the Spherical Model of Ferromagnetism
    Scott Allen, Waterloo
Depinning of a Single Driven Flux Line in Superconductors
    Deniz Ertas and Mehran Kardar, MIT
Random Field Theory Approach to Spin Glasses
    D. Huber and B. E. Vugmeister, Lehigh
Superconductor Glass Phase in Strongly Disordered Bulk Systems
    T. R. Kirkpatrick and A. Latz, University of Maryland
Spin-Wave and Bound-State Energies from an Ising Model
    Daniel P. Aalberts and A. Nihat Berker, MIT
Expression for the Superantiferromagnetic Boundary of the Ising Model with nn and nnn Interactions on the Square Lattice
    A. N. Berker and K. Hui, MIT
Fracture of Heterogeneous Materials: A Strongest Sample Size
    P. M. Duxbury, Michigan State, and P. L. Leath, Rutgers
Universality and Scaling in Fully Developed Turbulence
    Mark Nelkin, NYU
Self-Diffusion with Long-Range Jumps
    Amine Asselah, Rutgers
Power-Law Distributions in the Kauffman Net
    Amartya Bhattacharjya and Shoudan Liang, Penn State
Anderson Localization Phenomenon for Electromagnetic and Acoustic Waves in Random Media: Lattice Models
    A. Figotin and A. Klein, UNC at Charlotte
Dynamics of Small Clusters
    Girija Dubey, CUNY
Conditionally Stable Systems with Negative Specific Heat/Compressibility
    Michael Kiessling, Rutgers University
Monte Carlo Simulation of Phase Segregation in an External Field
    F. Alexander, Livermore, C. A. LaBerge and J. L. Lebowitz, Rutgers University, and R. Zia, VPI
Solving Bethe Ansatz Equations
    James McGuire, Florida Atlantic
Spectral Theory of Periodic Differential Operators
    Vadim Tkachenko, NYU

Exact Results for Diffusion-Limited Reactions with Synchronous Dynamics
  Vladimir Privman, Clarkson University
Upper Bounds on the Critical Temperature for the Two-Dimensional Blume–Emery–Griffiths Model
  Gastao A. Braga and Sabino Jose Ferreira, U. Federal de Minas
Phase Transitions in Long-Range Correlated Porous Media
  Mengshe Cao and J. Machta, University of Massachusetts, and L. Chayes, UCLA
Parallel Computational Complexity of Nonequilibrium Pattern Formation
  J. Machta, University of Massachusetts
Minimal SOC and Intermittency in the Dynamics of Macroevolution
  Kim Sneppen, Princeton, Per Bak, H. Flyvbjerg, and M. U. Jensen
Low-Temperature Spin Diffusion in Spin-Polarized Fermi Gas
  Denis I. Golosov and Andrei E. Ruckenstein, Rutgers
Low-Temperature Expansions for Renormalized Operators
  Jesus Salas, NYU
Low-temperature Phase Diagrams of Quantum Perturbations of Classical Lattice Systems
  Claudio Albanese, IAS, Princeton, and ETH-Zurich, R. Fernandez, EPEL-Lausanne and Princeton, and Jurg Frohlich, ETH-Zurich
Non-Quasilocality of Projected Gibbs Measures
  R. Fernandez, EPFL-Lausanne and Princeton, and Ch.-Ed. Pfister, EPFL-Lausanne
Phase Transition and Percolation Transition: Some Rigorous Results
  G. Giacomin and J. L. Lebowitz, Rutgers, and C. Maes, Brussels
New Method for Extrapolation of Finite-Size Data to Infinite Volume
  S. Caracciolo, U. di Lecce, Italy, R. G. Edwards, Florida State, S. J. Ferreira, UFMG, Brazil, A. Pelissetto, U. di Pisa and NYU, and A. D. Sokal, NYU
Antiferromagnet w Potts Models on the Square Lattice
  S. J. Ferreira, UFMG, Brazil, and A. D. Sokal, NYU
New Approach to Self-Avoiding Walks in High Dimensions
  A. Mazel, Rutgers University