

**PROGRAM OF THE 39TH STATISTICAL MECHANICS MEETING**  
**Department of Mathematics**  
**Rutgers University**  
**May 18 and 19, 1978**

For many years Yeshiva University has held semiannual one-day meetings on statistical mechanics. These meetings have now been transferred to Rutgers University where they will be continued. These meetings are extremely informal, with participants invited to present brief talks on their work. No proceedings of these meetings are published, so, as a service to the statistical mechanics community, the speakers and the titles of their work are listed below. 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

Results on Gauge Theories

*David Brydges*, Rockefeller University, *E. Seiler*, Princeton University,  
and *J. Frohlich*, I.H.E.S.

The Polyakov Instant Gas (Anharmonic Oscillator)

*Ricardo Schor*, Rockefeller University

The Two-Dimensional Higgs–Villain Model

*Chiara Nappi*, Harvard University

Kirkwood–Salsburg Equation for Unbounded Spins

*Robert Israel*, Harvard University

Uniqueness of State for Lattice Systems and Field Theories with Rotational Symmetry

*Jena Bricomont*, Rutgers University

Hamiltonian Time Evolution of the Infinite Classical and Quantum Heisenberg Models: Existence Proofs, Coherent States, Trotter Approximations, and All That

*Pierre Vuillermot*, Princeton University

Positivity of the Pressure in Thomas Fermi Theory

*R. Benguria*, Princeton University

Compatible Boundary Conditions and Infinite Volume Gibbs States

*Joel L. Lebowitz*, Rutgers University

Scale-Breaking Model of the Renormalization Group

*Moorad Alexanian*, Centro de Investigacion Del I.P.N., Mexico

Existence of Sharp Interfaces for Widom–Rowlinson Type Models in Three Dimensions

*Charles Pfister*, Rutgers University

Transport Processes

*Michael Aizenman*, Princeton University

Polymer Formation and Degradation

*Thor Bak*, University of Copenhagen

(A) Random Walk in Random Environment, and (B) Bernoulliness of Poisson Random Walk

*Steve Kalikow*, Stanford University

Qualitative Analysis of the Periodically Forced van der Pol Equation

*Mark Levi*, New York University

Some Interesting Examples in Perturbation Theory

*Barry Simon*, Princeton University

Correlation Function Identities for General Planar Ising Models

*J. Groeneveld*, University of Utrecht and State University of New York at Stony Brook

Two-Dimensional Ising Model in a Small Magnetic Field

*Barry McCoy*, State University of New York at Stony Brook

Correlation Function at the Critical Points of the Baxter and Ashkin–Teller Models

*Allan Brown*, Brown University

Momentum Distribution of Impenetrable Bosons in One Dimension

*H. G. Vaidya and C. A. Tracy*, State University of New York at Stony Brook

Proof of an Entropy Conjecture of Wehrl

*Elliott Lieb*, Princeton University

Rigorous Results on Spin Systems

*Yasha Sinai*, Moscow

Some Rigorous Results on the Renormalization Group

*Yasha Sinai*, Moscow

Search for Three-State-Potts-Type Multicritical Point in a Liquid Mixture

*B. K. Das and R. B. Griffiths*, Carnegie-Mellon University

Dipolar Forces in the Two-Dimensional  $XY$  Model

*Robert A. Pelcovits and B. I. Halperin*, Harvard University

Kodanoff Transformations at Low Activity

*Paul Pearce and R. B. Griffiths*, Carnegie-Mellon University

Instabilities in Cylindrical Implosions of Differentially Rotating Fluids

*Raymond C. Mjolsness*, Los Alamos Scientific Laboratory

Iterative Approach to Strong Turbulence Theory and Higher Approximations to the Direct Interaction Approximation

*George Knorr*, University of Iowa

Statistical Theories of Plasma Turbulence

*Donald F. DuBois*, Los Alamos Scientific Laboratory

Recent Calculations of Properties of the Electric Double Layer

*Douglas Henderson, Lesser Blum, and W. R. Smith*, I.B.M. Research Laboratories

Susceptibility, Magnetization, and Electronic Specific Heat of Mixed Valent  
Rare Earth Compounds

*Hans Lustfeld*, Rutgers University

Memory Effect of Generalized Random Walk

*H. Hara*, State University of New York at Buffalo

Marginal Eigen Operators and Physically Irreducible Representations

*Marko Jaric*, City College of New York

A Statistical Mechanical Model of Phase Transitions in Polymer Gels

*Eugene Stanley, A. Coniglio, and W. Klein*, Boston University

Cluster Size and Shape in Random and Correlated Percolation

*W. Klein, H. E. Stanley, Peter J. Reynolds, and A. Coniglio*, Boston University

Cluster Backbones and Ghost Fields: A Large Cell PSRG Study

*Peter J. Reynolds, Eugene Stanley, and W. Klein*, Boston University

A Test of Scaling Near the Bond Percolation Threshold

*Hisao Nakanishi and Eugene Stanley*, Boston University

Interfacial Profile in Three Dimensions

*David Jasnaw*, University of Pittsburgh

van der Waals Theory of Nematic Solutions

*Martha A. Cotter*, Rutgers University

Liquid Crystal Nematic–Isotropic Transition in a Lattice Model with LJ Seg-  
mental Intermolecular Potentials

*Flonnie Dowell*, National Bureau of Standards

Genetic Recursion Relation with Random Parameters

*Harold Falk*, City College of New York

Studies of Convergence of the Conventional Metropolis Monte Carlo Method

*S. Swaminathan, David L. Beveridge, and Mihaly Mezei*, Hunter College of  
the City University of New York

Computer Simulation of Static and Kinetic Properties of Polymers

*David Ceperley*, Courant Institute, New York University

Computer Simulation of Phase Diagram of an FCC Alloy

*Mohan Phani*, Rutgers University

HNC Equations for Three and Four Body Distribution Functions

*Frank Pinski*, State University of New York at Stony Brook

Exact Two-Dimensional Plasma Pair Correlation Function in the STLS Approximation Scheme

*Daniel Merlini*, College of William and Mary

Ising Spin Glass Near the Percolation Threshold

*M. R. Giri and M. J. Stephen*, Rutgers University

An Example of the Effect of Irreversible Microscopic Dynamics on the Macroscopic Behavior of a Large System

*Michael Coopersmith*, University of Virginia

Review of Mathematical Theory of Onset of Turbulence

*Oscar Lanford*, University of California at Berkeley

Review of Experiments on Onset of Turbulence

*J. Gollub*, Haverford College

Round Table Discussion (Chaired by Paul Martin) with Talks and Comments on Fully Developed Turbulence by

*M. Nelkin, D. Montgomery, and B. Mandelbrot*