PROGRAM OF THE 40TH STATISTICAL MECHANICS MEETING
Department of Mathematics
Rutgers University
December 14 and 15, 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
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Yang–Lee Edge Singularity in the Hierarchical Model
   George A. Baker, Jr., Los Alamos Scientific Laboratory, *Michael E. Fisher and P. Moussa*, Cornell University
Yang–Lee Edge Singularities at High Temperatures
   Douglas A. Kurtze and Michael E. Fisher, Cornell University
FKG Inequalities for Yukawa Models
   Guy A. Battle III and Lon Rosen, University of British Columbia
Surface Tension and Duality
   J. Bricmont, Rutgers University
Phase Coexistence Region in the Three-Dimensional Widom–Rowlinson Model
         on a Lattice
   C. E. Pfister, Rutgers University

Phase Transitions in Lattice Gas Models for Water
Dale A. Huckaby, Texas Christian University *and Ole J. Heilmann,* H. C.
Oersted Institute

Phase Transition in a bcc Lattice Gas of Hard Spheres with Second-Neighbor
Exclusions
Dale A. Huckaby, Texas Christian University

Water Models: Influence of Hydrogen Bonding
Paul Meijer, The Catholic University of America

Stochastic Acceleration
Harry Kesten and G. Papanicolaou, Cornell University

Ergodic Properties of Dynamical Systems in Contact with Thermal Reservoirs
S. Goldstein, J. Lebowitz, and E. Presutti, Rutgers University

Ergodic Properties of Quasi-Infinite One-Dimensional Systems
K. Ravishankar and S. Goldstein, Rutgers University

Applications of Stochastic Boundary Conditions
William Joyce, Bell Laboratories

Heat Flow in a Random Chain
T. Verheggen, Rutgers University

An Existence Theorem for the Boltzmann Equation on a Lattice
Paul Zweifel, Virginia Polytechnic Institute and State University

Asymptotic Solutions to Fokker–Planck Equations
Noel Corngold, California Institute of Technology

Decay of Correlations in Lattice Models at High Temperatures
Leonard Gross, Cornell University

The Particle Spectrum and Resummation of One-Particle Lines
James Glimm, Rockefeller University

Scaling Limits and Critical Point Inequalities
Charles M. Newman, Indiana University

Failure of Schrader Monotonicity in the $\lambda\phi^4$ Ising Model
John Kincaid and George Baker, Jr., Los Alamos Scientific Laboratory

What's Wrong with Real-Space Renormalization-Group Transformations?
Robert B. Griffiths, Carnegie-Mellon University

(A) An Entropy Production Inequality Which Implies Uniform Convergence to
Equilibrium in a System of Polymers, and

(B) One-Dimensional Coulomb Systems: The Structure of Gibbs States, Wigner
Lattice, and θ States
Michael Aizenman, Princeton University

Classical Limit of Spin Systems
B. Simon, Princeton University

Interesting Problems in Statistical Mechanics and Mathematics from the Real
World of Materials
John Cahn and Jim Langer, NBS and Carnegie-Mellon University

Round Table Discussion on the Role of Statistical Mechanics in Some Engineering
Problems: Ben Widom, Chairman
Phase Equilibria in Chemical Engineering
Keith Gubbins, Cornell University
Enhanced Oil Recovery
Ted Davis, Minnesota University
Industrial Properties Predictions
Stan Sandler, University of Delaware
A Typical Mechanical–Engineering Application of Statistical Mechanics: Un-
derstanding the Heat of Vaporization of Water
George Stell, State University of New York at Stony Brook

On Crystalline Ground States in Low Dimensions
Charles Radin, University of Texas
Selberg Trace Formula and Quantum Statistical Mechanics
Norman E. Hurt, MRJ, Inc.
Semiclassical Dynamics and Quantum Maps
N. L. Balazs, State University of New York
Phase Diagram of Antiferromagnetic Triangular Ising Model
F. Y. Wu, Northeastern University
Low Temperature Properties of Spin Systems with Many Degenerate Ground
States
Joseph Slawny, Rutgers University
Inhomogeneous Differential Approximants for Power Series
Michael E. Fisher, Cornell University
Interfacial Density Profiles in Mean-Field Approximation
B. Widom, Cornell University
Surface Structure and the Liquid–Vapor Coexistence Curve
John Lekner and J. R. Henderson, Cornell University

An Interacting-Soliton Liquid in One-Dimension
  S. Doniach and L. Turkevich, Stanford University
Critical Temperature for Nonequilibrium Behavior in a One-Dimensional
    System
  Ted Schultz, IBM
A Model for Superfluidity and Phase Separation in Helium Films
  A. Nihat Berker and D. R. Nelson, Harvard University
Spinodal Decomposition in Superfluid ^{3}He–^{4}He Mixtures
  P. C. Hohenberg, Bell Laboratories *and D. R. Nelson,* Harvard University
A Kinetic Approach to Homogeneous Nucleation Theory
  Joseph Katz, Clarkson College
Distortion Energy of a Dimerized Antiferromagnetic Chain
  Daniel S. Fisher, Harvard University
Coupled Anharmonic Oscillators
  David Isaacson, Rutgers University
Gauge Invariant Nonlinear σ-Model in $2 + \epsilon$ Dimensions
  Shinobu Hikami, Harvard University
The Spherical Model: Planar Defects and Dimension Crossover
  Gunduz Caginalp, Rockefeller University
Sherman Theorem on Path and Boundary Conditions in the Two-Dimensional
    Ising Model
  D. Merlini, Northeastern University
Light Scattering from a Fluid not in Equilibrium
  E. G. D. Cohen and T. Kirkpatrick, Rockefeller University
Transport Coefficients Without Long-Time Tail Simulation
  Pieter B. Visscher, University of Alabama
Series Analysis Used to Study Time-Dependent Phenomena
  Chris Hamilton, John Hopkins University
Fluctuations and Nonlinear Irreversible Processes
  H. Grabert and M. S. Green, Temple University
Nonstochastic Extensions of Phenomenological Nonequilibrium Theories
  Miroslav Grmela, University of Montreal
Stochastic Model of Spin Labelled DNA EPR Signals
  Gabor Forgacs, H. L. Frisch, and B. Robinson, State University of New York
    at Albany
Condensation and Self-Focusing of Langmuir Waves
  Harvey A. Rose, Los Alamos Scientific Laboratory
Zero Temperature Renormalization Group Calculations
  Jill Bonner, University of Rhode Island
Mode–Mode Coupling in Strongly Coupled, Magnetized Pure Electron Plasma
  Rodney Varley, Hunter College

New Results on Plasma Waves
Michael Arthur, Virginia Polytechnic Institute

Information Theory Applied to Steady Heat Flow in a Linear Harmonic Chain
Bruce N. Miller and Peter M. Larson, Texas Christian University

The Relation Between the HNC and the Nonlinear Poisson—Boltzmann Theory
L. Blum and D. Henderson, University of Puerto Rico

Equilibrium Properties of Lattice Systems — A Virial Approach
S. K. Mitra, University of Western Ontario

Anomalous NMR Frequency Shift Near the Liquid—Vapor Critical Point
Chester Vause, Rutgers University

Lifshitz Points
Walter Selke, Cornell University

Glass Tricritical Points
Flonnie Dowell, National Bureau of Standards

Bootstrap Percolation
Paul Leath, John Chalupa, and Gary Reich, Rutgers University

Renormalization Group Treatment of the Backbone Problem in Percolation
J. Shlifer, W. Klein, P. Reynolds, and H. E. Stanley, Boston University

Multicritical Phase Diagram of Gases Adsorbed on Graphite: Temperature Variation and Finite Size Effects
Stellan Ostlund and A. N. Berker, Harvard University

Lattice Gas Model for O on Ni(100)
Peter Kleban, University of Maine

Surface Adsorption of Rigid Rodlike Molecules
Richard E. Boehm, Georgetown University

Configurational Statistics of Confined Polymer Chains
David Lohse, National Bureau of Standards

Polymer Dynamics
Marvin Bishop, Fordham University

A Bethe Approximation for Melting in Hard Disk and Hard Sphere Systems
E. Roger Cowley, Rutgers University

The Devil's Staircase and the Ising Model with n.n.n. Interaction
Per Bak, IBM

The Effects of Hydrodynamic Degrees of Freedom on the Phase Separation Problem
Arthur Schwartz, Carnegie-Mellon University

Percolation in Two-Dimensional Conductor—Insulator Networks with Controllable Anisotropy
Lawrence N. Smith, Harvard University

Computer Simulations of Polymer Configurations in Continuous Space
Itzhak Webman, Rutgers University

Prediction of High-Pressure Vapor—Liquid Equilibrium Using Direct Correlation Function Solution Theory
Paul Mathias, Massachusetts Institute of Technology