Program of the 75th Statistical Mechanics Meeting

Department of Mathematics, Rutgers University

May 9 and 10, 1996

Here are the titles presented at the last semiannual Statistical Mechanics Meeting. As usual these titles are informal and in many cases there is only one speaker listed, although the work may have been done by many 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.

Information about past and future meetings, as well as positions available and names of people looking for positions, can be obtained from a file labeled smm which you will be able to reach directly by anonymous ftp to "math.rutgers.edu"; give "anonymous" as user name and give your e-mail address as the password. You should switch to appropriate directory by "cd pub/smm". Alternatively, this file can be reached via WWW browser at the URL file://math.rutgers.edu/pub/smm.

The next program, the 76th, is scheduled for Sunday, Monday, and Tuesday, December 15, 16, and 17, 1996.

Joel L. Lebowitz

REVIEW TALKS

Directed Polymers in Random Media
    T. Halpin-Healy, Columbia University
Large Time Asymptotics for Time Dependent Gaussian Velocity Fields
    R. Carmona, Princeton University
Non-Linear Dynamics of Seismicity
    V. Keilis-Borok, MITP of Russian Academy of Science
Some Modest and Moderately New Thoughts on Scaling in Fluid Turbulence
    K. R. Sreenivasan, Yale University and IAS

Generalized Locality of Interactions and Non-Power Kolmogorov Spectra
    V. Malkin, IAS
Finite-Time Singularities in Ideal Hydrodynamics
    R. Pelz, Rutgers University
Vortex Sheets with Surface Tension: Do Thin Jets Pinch?
    M. Pugh, New York University
The Hydrodynamics of Stretching, Buckling Filaments
    M. Shelley, New York University
Primes and Zeros of Zeta Functions
    A. Odlyzko, AT&T Research
Boltzmann Equation Methods for Computing Lyapunov Exponents in
Equilibrium and Non-Equilibrium Lorentz Gases
    J. R. Dorfman, University of Maryland
Dislocations in Smectic Liquid Crystals and the TGB Phases
    T. Lubensky, University of Pennsylvania
The Mott Transition: Recent Theoretical and Experimental Developments
    G. Kotliar, Rutgers University
Delta Interaction on a Ring: The Topological Bethe Ansatz
    J. Mcguire, Florida Atlantic University
Properties of the Chiral Potts Model
    R. Baxter, Australian National University
A Coarse-Grained Approach to Thermocapillarity
    D. Jasnow, University of Pittsburgh
Fluctuations in the Structure of Interfaces
    B. Widom, Cornell University
Recent Exact Results in 1D Coarsening Phenomena
    B. Derrida, ENS, France
Bands and Gaps in the Spectra of Periodic Dielectric and Acoustic Media
    A. Figotin, University of North Carolina
Localization for Classical Acoustic and Electromagnetic Waves
    A. Klein, University of California, Irvine
Systems with Multiplicative Noise
    G. Grinstein, IBM
Problems in Statistical Physics Viewed from the Perspective of Computa-
tional Complexity
    J. Machta, University of Massachusetts
Phase Structure of a Catalytic Surface Reaction Model
    M. Bramson, University of Wisconsin and IAS
Critical Behavior of Randomly Pinned Spin-Density Waves
    R. Fisch, Washington University
Is There a Z-Theorem for Dynamic Critical Exponents?
    M. Den Nijs, University of Washington

Statistics of Inviscid Burgers Equation with Random Forces
    W. E. Courant, K. Khanin, A. Mazel, Ya. Sinai, Princeton University

INFORMAL SESSION ON COMPUTING

The Present and Near Future
    M. Kalos, Cornell University
About Molecular Computing
    A. Libchaber and P. Kaplan, Rockefeller University and NEC
Quantum Computing
    P. Shor, AT&T

SHORT COMMUNICATIONS

Occurrence of Rare Events for Spin Flip Dynamics
    A. Asselah, Rutgers, and P. Dai Pra, University of Padova
Phase Segregation in 3D Binary Fluids with Long Range Interaction
    S. Bastea, Rutgers University
McKean–Vlasov Limit far Stochastic Random Processes in Random Media
    P. Dai Pra, University of Padova, Italy, and F. den Hollander, University of Nijmegen, Holland
The Microcanonical Point Vortex Ensemble: Beyond Equivalence
    M. K.-H. Kiessling and J. L. Lebowitz, Rutgers University
The Asymmetric Exclusion Process: Some New Exact Results
    G. Schutz, Oxford University
Renormalization Theory of Stochastic Growth
    M. B. Hastings, MIT
Stick-Slip Motion and Friction in Nonlinear Oscillator Arrays
    H. G. E. Hentschel, F. Family, and Y. Braiman, Emory University
Phase Diagram of Fermions Coupled to a Lattice Gas
    K. Leung, University of California, Berkeley
Ergodic Properties of the Quantum Ideal Gas in the Maxwell–Boltzmann Quantization
    M. Lenci, Princeton University
Simple Maps with Fractal Diffusion Coefficients
    R. Klages and J. R. Dorfman, University of Maryland
Lyapunov Exponents in a 3D Thermostatted Lorentz Gas in an Electric Field
    A. Latz, University of Maryland, H. van Beijeren, University of Utrecht, and J. R. Dorfman, University of Maryland

Step-Density-Wave Phase of Crystalline Interfaces
    E. B. Kolomeisky, Cornell University, and J. P. Straley, University of
    Kentucky
Direct Correspondence between the Random Resistor Network and the
Ising Model
    K. M. Golden, University of Utah
Effect of the Interface on the Properties of Composite Media
    S. Torquato and M. Rintoul, Princeton University
Ground States of Lennard-Jonesium and Related Systems Such as Telescopes
    J. Adler, Technion, Israel
Exact Results for a Model Ternary Polymer Mixture
    P. Pant, F. Y. Wu, Northeastern University, and J. H. Barry, Univer-
    sity of Florida
From Crosslinks to Collapse to Freezing in Heteropolymers
    C. J. Camacho, Universidad Catolica de Chile
Analytic Study of Angle Selection and Mound Formation in Molecular
Beam Epitaxy
    F. Family and J. G. Amar, Emory University
Zeros of the Partition Function for a Continuum System at First Order
Transitions
    K.-C. Lee, Brown University and Seoul National University
Monte Carlo Study of Square-Lattice Fully-Packed Loop Model Using Its
Representation as an Interface Model
    Christopher L. Henley and R. Raghavan, Cornell University
Aspects of Integrable Chiral Potts Model
    H. Au-Yang and J. H. H. Perk, Oklahoma State University
Turbulent Convection in a Porous Medium
    C. R. Doering, Los Alamos, and P. Constantin, University of Chicago
Holder Exponents for Minimal Paths in the Fractal Percolation Process
    L. Chayes, UCLA
Singularities of Optimal Paths for Large Classical Fluctuations
    M. I. Dykman and V. N. Smelyanskiy, Michigan State University
Relative Entropy and Mixing Properties of Some Infinite Dimensional Processes
    A. F. Ramirez and S. R. S. Varadhan, New York University
Relaxation of Finite Volume Glauber Dynamics
    R. Schonmann, UCLA, and N. Yoshida, Kyoto University
Cyclic Voter Model
    E. Ben-Naim, University of Chicago, L. Frachebourg, Boston Univer-
    sity, and P. Krapivsky, New York University
A Hyperbolic Equation for Turbulent Diffusion
    S. Ghosal and J. B. Keller, Los Alamos National Laboratory and
    Stanford University

Passive Scalars in Fluids and Quantum Localizations
    J. Miller and J. Wang, University of Chicago
Generic Long Range Momentum Correlations in Nonequilibrium Fluids
    H. J. Bussemaker, University of Maryland/University of Utrecht, and
    M. H. Ernst, University of Utrecht
Asymptotic Properties of Extended Particle Trajectories on Square and
Triangular Lattices
    M. S. Cao and E. G. D. Cohen, Rockefeller University
Simple Model for Deep Bed Filtraton
    J. Lee and J. Koplik, Levich Institute, City College of New York
Free Energy Bounds on MSA, DH, and Pairing Theories for Electrolytes
    B. P. Lee, M. E. Fisher and D. M. Zuckerman, University of
    Maryland
Path Averaging in Random Media
    V. S. Podolsky and A. A. Lisyansky, Queens College of CUNY
Pattern Formation in Spreading Wax Layers
    R. Ragnarsson, L. Ford, C. Santangelo, E. Bodenschatz, Cornell
    University
Magnetization on the Cayley Tree
    R. Melin, NEC and CRTBT-CNRS, Grenoble
Principles of Structure Selection in a Simple Model of Protein Folding
    H. Li, C. Tang, N. Wingreen, R. Melin, NEC, and R. Helling, Univer-
    sity of Hamburg
The Shape of the van der Waals Loop near Criticality
    S. Y. Zinn and M. E. Fisher, University of Maryland
The Isobaric Ensemble
    P. Attard, Australian National University
Disorder Induced Continuous Transition in the Frustrated XY Model at
$f = 2/5$
    C. Denniston, Princeton University, and C. Tang, NEC
Disorder-Induced Polaritons
    L. I. Deych and A. A. Lisyansky, Queens College of CUNY
Critical Properties of Random Quantum Potts Models
    T. Senthil and S. N. Majumdar, Yale University
Fraction of Unflipped Spins in the $T = 0$ Dynamics of Ising Model
    S. N. Majumdar and C. Sire, Yale University
Coarsening Dynamics of the Bose Gas
    K. Damle, S. Majumdar, and S. Sachdev, Yale University
Adsorption of Random Copolymers on a Solid Surface
    H. Li, NEC, and P. G. deGennes, College de France
The Repton Model for DNA Electrophoresis Compared with Experiments
    G. Barkema, IAS

Effective Interaction at Freezing Temperature in Dilute RKKY Ising Spin Glass

B. E. Vugmeister, D. Nowakowski, and D. L. Huber, Princeton University

Infinite Series of Exact Equations in Bak–Sneppen Model

S. Maslov, Brookhaven National Laboratory

Conformal Field Theories of Loop Models

J. Kondev, Brown University

Finite Size Behavior of the 3-Dimensional Ising Model Very Near the Critical Point

G. Baker, Los Alamos National Laboratory

The Universal Repulsive Core Singularity in a Fluid and the Yang–Lee Edge

S.-N. Lai and M. E. Fisher, University of Maryland

Statistical Mechanics Events

London June 1996

I. ANALYSIS ON INFINITE DIMENSIONAL SPACES AND STATISTICAL MECHANICS

19 June (Wednesday) 1996 Imperial College, organizer: B. Zegarlinski (http://www.ma.ic.ac.uk)

D. Bakry
  GKS inequalities on groups
T. Balaban
  A low temperature expansion for classical spin models with continuous symmetry groups: Homogeneous and disordered systems
G. Ben Arous
  Large deviation principle for random matrices and Voiculescu's noncommutative entropy
G. Grimmett
  Exponential decay in disordered systems
R. Kotecky
  An intermediate phase for a classical continuum model
M. Lindsay
  Non-commutative Dirichlet forms
C. Newman
  Is there mean-field behaviour for short-range spin glasses?

II. ANNUAL STATISTICAL MEETING KING'S COLLEGE

STATMECH-12

20 June (Thursday) 1996, organizers: D. A. Lavis, G. S. Joyce (http://www.mth.kol.ac.uk)

Main Speakers
H. Fogedby
  Interface and solitons

R. Lima
    Statistics versus dynamics in space-time systems
B. Nienhuis
    Solvable models for entropically stabilised quasicrystals

Plus sessions of short talks

STOCHASTICS, DYNAMICS, AND COMPLEXITY

21 June (Friday) 1996, organizer: R. F. Streater (maths@kcl.ac.uk)

Main Speakers
A. C. D. van Enter
    The Gibbs property and how it can be violated for measures of lattice systems
D. Evans
    Quantum double and orbifolds in operator algebras
A. Guionnet
    Decay to equilibrium in disordered spin systems
A. Majewski
    On quantum stochastic dynamics
F. Martinelli
    On dynamics for disordered systems in the Griffiths phase
M. Zahradnik
    The Pirogov Sinai theory as a method of organising low temperature expansions for models with contours

Plus sessions of short talks