Program of the 83rd Statistical Mechanics Meeting

Department of Mathematics, Rutgers University
May 7–9, 2000

Here are the titles presented at the last semiannual Statistical Mechanics Meeting, held in May 2000. 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, but e-mail addresses are provided if you are interested in communicating with a speaker.

Information about past and future meetings, as well as positions wanted and available can be obtained via www browser at the URL ftp://math. rutgers.edu/pub/smm.

The next Statistical Mechanics Meeting will take place December 17–19, 2000, at Rutgers University.

<div align="right">Joel L. Lebowitz</div>

REVIEW TALKS

Correlations in a One-Dimensional Hysteresis Model
    H. L. Frisch (SUNY, Albany, hlf04@cnsvax.albany.edu)
Density Fluctuations and Entropy
    Lesser Blum and J. A. Hernando (University of Puerto Rico, lblum@ upracd.upr.clu.edu)
The Structure of Fluctuations at Mean-Field Critical Points and the Implications for Supercooled Fluids: Theory
    W. Klein (Boston University, klein@buphyc.bu.edu)
The Structure of Fluctuations at Mean-Field Critical Points and the Implications for Supercooled Fluids: Simulations
    H. Gould (Clark University, hgould@clarku.edu)
Confined Fluids—Variations on a Mean Spherical Theme
    J. K. Percus (New York University, jkp1@scires.acf.nyu.edu)

Two-Dimensional Vortex Systems and n-Dimensional Conformal Geometry

    M. Kiessling (Rutgers University, miki@math.rutgers.edu)

Statistical Mechanics of Time-Histories: An Application

    F. Alexander (Los Alamos National Laboratory, fja@lanl.gov)

Dynamical Self-similarity of Turbulence Decay

    G. Eyink (University of Arizona, eyink@math.arizona.edu)

The Fractional Calculus and Statistical Physics

    B. West (Army Research Office, westb@aro-emh1.army.mil)

Domain Growth and Long Range Order in a Quasi One-Dimensional Nonequilibrium System

    B. Schmittmann, J. Mettetal, G. Korniss, and R. K. P. Zia (Virginia Tech, schmittm@vt.edu)

Critical Properties of a Driven Bi-Layer Lattice Gas: Surprises from Recent Monte-Carlo and Field Theoretic Studies

    R. K. P. Zia, B. Schmittmann, and U. C. Tauber (Virginia Tech, rkpzia@vt.edu)

Spatial Structure in High Dimensions for Diffusion Limited Two-Particle Reactions

    M. Bramson (University of Minnesota, bramson@math.umn.edu)

Microcanonical Ensembles and Molecular Dynamics

    G. A. Baker, Jr. and J. D. Johnson (Los Alamos National Laboratory, gbj@viking.lanl.gov)

Geometric Similarity of Growing Cracks in Heterogeneous Planar Interfaces

    P. Leath (Rutgers University, leath@physics.rutgers.edu)

Recent Universal Results for Two-Dimensional Coulomb Systems

    B. Jancovici (University of Paris-Sud, Bernard.Jancovici@th.u-psud.fr)

Statistical Mechanics of Dipolar Fluids: Dielectric Constant and Sample Shape

    A. Alastuey (ENS Lyon, alastuey@physique.ens-lyon.fr)

New Results on Liquid–Liquid Phase Transitions: Applications to Water and Other Liquids with a Local Tetrahedral Structure

    E. Stanley (Boston University, hes@buphy.bu.edu)

An Assessment of Jaynes's Application of the Maximum Entropy Principle to the Evaluation of Probabilities

    A. Shimony (Boston University, shimony@bu.edu)

Resonances, KAM Transformations and Renormalization in Classical and Quantum Dynamics

    H. Jauslin (University of Bourgogne, jauslin@satie.u-bourgogne.fr)

Exploring the Pattern of Gene Expression and Regulation

    M. Zhang (Cold Spring Harbor Laboratory, mzhang@cshl.org)

Percolation in Sea Ice (and video "Voyage Into the Arctic Winter")

K. Golden (University of Utah, golden@math.utah.edu)

The ASEP with Different Types of Particles

N. Rajewsky (Rockefeller University, nr@eds3.rockefeller.edu)

Co-existence of Superconductivity and Ferroelectricity—A Dynamical Symmetry Model

J. L. Birman (City College of CUNY, birman@scisun.sci.ccny.cuny.edu)

Minimizing the Variance of the Spherical Errors of Particle Distributions

J. Beck (Rutgers University, jbeck@math.rutgers.edu)

The Yang–Yang Anomaly in Fluid Criticality

Michael E. Fisher, G. Orkoulas, and A. Z. Panagiotopoulos (University of Maryland)

Generic Behavior of Reversible Cellular Automata

L. Kadanoff (University of Chicago, leop@uchicago.edu)

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Speakers include: C. Corillon (National Academy of Sciences, ccorillo@nas.edu) and S. Piontkovski (SUNY at Stony Brook, spiontkovski@notes.cc.sunysb.edu)

Extension of the Hydrophobic-Interaction Model to Two and Three Dimensions

Ben Widom and G. T. Barkema (Cornell University, widom@wisteria.chem.cornell.edu)

Walks in Rigid Environments

L. Bunimovich (Georgia Tech, bunimovh@math.gatech.edu)

Scaling and Universality for Distribution of Zeros of Random Polynomials

P. Bleher (Indiana University, bleher@math.iupui.edu)

Universality and the Ising Model in 2 Dimensions

T. Spencer (IAS, spencer@math.ias.edu)

Time-Dependent Resonance Theory

A. Soffer (Rutgers University, soffer@math.rutgers.edu)

On the Complete Ionization of a Periodically Perturbed Quantum System

O. Costin (Rutgers University, costin@math.rutgers.edu)

Globally Accurate Aproximation for Structure and Thermodynamics of 3-Dimensional Fluid and Magnetic Models

G. Stell (SUNY at Stony Brook, GSTELL@sbchm1.chem.sunysb.edu)

Anomalous Equilibriup,Surface Roughness in One Dimensional Dimer Growth Type Interfaces

M. den Nijs (University of Washington, dennijs@dirac.phys.washington.edu)

New Phases in Heterogeneous Ferromagnets-Superconductor Systems

V. Pokrovsky (Texas A & M University, vp@schnitke.physics.tamu.edu)

ROUND TABLE: SOME HIGHLIGHTS OF STATISTICAL MECHANICS IN THE PAST DECADES

Participants include: J. L. Lebowitz, P. Martin, V. Pokrovsky, and Ya. G. Sinai

Where Have All the Excitonic Insulators Gone?

M. Cohen (Rutgers University, mhcohen1@prodigy.net)

On the Microscopic Field Theory of Classical Liquids

Ph. Choquard (EPFL, Switzerland, choquard@imap.epfl.ch)

Do Two-Dimensional Spin Glasses Have Many Ground States?

D. Stein (University of Arizona, dls@kramers.physics.arizona.edu)

Non-Equilibrium Relaxation Law for Entangled Polymer

G. Schuetz (University of Juelich, g.schuetz@fz-juelich.de)

Occupancy Statistics of a Site by an Ensemble of Random Walkers

G. Weiss (National Institutes of Health, ghw@helix.nih.gov)

SHORT COMMUNICATION

(When more than one author, the speaker is indicated by an asterisk.)

Decoherence-Free States for Systems with Dynamical Symmetry of a Quantum Group

M. Durdevich (UNAM, Mexico), H. E. Makaruk (Los Alamos National Laboratory), R. Owczarek* (Los Alamos National Laboratory, rmo@lanl.gov)

Burnett Coefficients and Decay of Multiple Correlations in the Periodic Lorentz Gas

C. P. Dettmann* (Rockefeller University) and N. I. Chernov (University of Alabama, dettmac@bear.rockefeller.edu)

Recent Progress in the 2-Dimensional Ising Susceptibility,

W. P. Orrick* (The University of Melbourne, worrick@ms.unimelb.edu.au), B. Nickel (University of Guelph), A. J. Guttmann (The University of Melbourne), J. H. H. Perk (Oklahoma State University)

Critical Adsorption on a Line

A. Hanke (MIT, hanke@mit.edu)

Magnetic Critical Dynamics of the Classical Heisenberg Antiferromagnet: Simulation Versus Theory and Experiment

S.-H. Tsai,* A. Bunker, and D. P. Landau (University of Georgia, tsai@hal.physast.uga.edu)

Dynamics of Fluctuation Driven First Order Phase Transitions

N. A. Gross* (Boston University), M. Ignatiev (Brandeis University), and B. Chakraborty (Brandeis University, gross@bu.edu)

The Dynamics of Single Kinesin Molecules Described by Simple Stochastic

Models
    M. E. Fisher* and A. B. Kolomeisky (University of Maryland)
Exact Results for Parallel Chain Kinetic Models of Biological Transport
    A. B. Kolomeisky (University of Maryland, abk7@Glue.umd.edu)
Identification of Clusters in Supercooled Colloidal and Lennard–Jones Systems
    G. Johnson* (Clark University), E. Weeks (Harvard), H. Gould (Clark University), W. Klein (Boston University), D. Weitz (Harvard University, gjohnson@physics.clarku.edu)
Glass Transition in a Frustrated Spin Model
    H. Yin,* B. Chakraborty, and M. Fisher (Brandeis University, huiyin @matter.cc.brandeis.edu)
Quantum Lattice Models at Intermediate Temperature
    D. Ueltschi (Princeton University, ueltschi@phoenix.princeton.edu)
Zero-Temperature Stochastic Dynamics of Ising Models on the Triangular Lattice
    C. Wu (Penn State University, ccw3@psu.edu)
Efficient Rate Calculations for Rare Events in Simple Stochastic Systems
    D. M. Zuckerman* and T. B. Woolf (Johns Hopkins School of Medicine, dmz@groucho.med.jhmi.edu)
Scaling Regimes in a Cellular Automaton Model of Earthquake Faults
    M. Anghel* and W. Klein (Boston University), J. B. Rundle and J. S. Martins (University of Colorado at Boulder, manghel@buphy.bu.edu)
Phase Transition in a Traffic Model with Passing
    I. Ispolatov* (Cornell University) and P. L. Krapivsky (Boston University, slava@ccmr.cornell.edu)
Growth Law Amplitude Universality in Coarsening
    B. Vollmayr-Lee (Bucknell University, bvollmay@eg.bucknell.edu)
Do Dynamical Systems Follow Benford's Law?
    R. A. LaViolette (Idaho National Engineering and Environmental Laboratory, yaq@inel.gov)
Period Doubling Universality Applies to Extended Dynamical Systems
    A. Lemaitre* and H. Chate (CEA, Saclay, lemaitre@drecam.saclay.cea.fr)
Pulling Pinned Polymers and Unzipping DNA
    D. K. Lubensky* and D. R. Nelson (Harvard University, lubensky@cmts.harvard.edu)
Thermodynamic Fingerprints of Disorder in Mesoscopic Systems
    T. Emig* and M. Kardar (MIT, emig@mit.edu)
Microcanonical vs. Canonical Percolation
    R. Ziff* (University of Michigan), M. E. J. Newman (Santa Fe Institute, rziff@engin.umich.edu)

Relevance of the Local-Density Approximation to Interfacial Properties of Ionic and Simple Non-Ionic Fluids within Gradient Theory

V. C. Weiss* and W. Schroer (University of Bremen, vw25@cornell.edu)

Non-equilibrium Interface of a Two-Dimensional Low-Temperature Crystal

V. A. Shneidman,* K. A. Jackson, and K. M. Beatty (NJIT and University of Arizona, vitaly@super.arizona.edu)

Scaling in Cyclical Surface Growth

S. Raychaudhuri* and Y. Shapir (University of Rochester), D. G. Foster (Eastman Kodak and University of Rochester), and J. Jorne (University of Rochester, subha@pas.rochester.edu)

Beyond the Wigner Distribution: Mean-Field Theories for Terrace Width Distributions

H. Richards* and T. L. Einstein (University of Maryland, hlrichar@Glue.umd.edu)

Bounded Fluctuations and Periodic Structures in One Dimension: The One Component Plasma

M. Aizenman (Princeton University), S. Goldstein and J. L. Lebowitz* (Rutgers University, lebowitz@sakharov.rutgers.edu)

New Methods for the Study of Anderson Localization

M. Aizenman,* J. H. Schenker, R. M. Friedrich, and D. Hundertmark (Princeton University, aizenman@princeton.edu)

Ergodicity and Additive Conserved Quantities of Discrete Invertible Dynamics

R. D'Souza (Bell Laboratories, raissa@bells-labs.com)