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Program of the 88th Statistical Mechanics Meeting Celebrating the 70th Birthday of Elliott Lieb

Rutgers University, December 15–17, 2002

Please note that in many cases there is only one speaker listed, although the work may have been done with collaborators. Also, the addresses may be incomplete.

Information about past and future meetings, as well as positions wanted and available can be obtained at http://www.math.rutgers.edu/events/statmech.html.

The next Statistical Mechanics Meeting will take place December 14–16, 2003, at Rutgers University.

Joel L. Lebowitz

REVIEW TALKS

Some Exactly Solvable, Frustrated, Ising Models: Their Tc, Ground State Energy, and Ground State Degeneracy

D. Mattis, University of Utah, dancmat@aol.com

Some Recent Results in Dimer Statistics

F. Wu, Northeastern University, fywu@neu.edu

Some Rigorous Results on the Strongly-Correlated Electron Systems by Lieb's Spin-Reflection-Positivity Method

G. Tian, Peking University, China, tiangs@sun.ihep.ac.cn

Superfluidity in Dilute Trapped Bose Gases

J. Yngvason, University of Vienna, Austria, yngvason@thor.thp.univie.ac.at

Approach to Equilibrium in the Kac Model and Related Stochastic Evolutions

M. Loss, Georgia Institute of Technology, loss@math.gatech.edu

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Randon Matrices and the 2D Anderson Model
J. Bellissard, Georgia Tech, jeanbel@math.gatech.edu, V. Rivasseau, Universite Paris XI, and J. Magnen, CPHT - Ecole Polytechnique, France

A Supersymmetric Approach to Random Matrices
T. Spencer, IAS, spencer@math.ias.edu

A Massless Quantum Field Theory in Three Dimensions
*D. Brydges, University of British Columbia and University of Virginia, db5d@math.ubc.ca, P. K. Mitter, Université Montpellier, and B. Scoppola, Universitá "La Sapienza" di Roma

Navier–Stokes and Equivalent Equations: Numerical Tests
G. Gallavotti, University of Rome/Rutgers, gallavotti@roma1.infn.it

A Hydro-Kinetic Equation for Description and Simulations of Strongly Non-Linear Fluids
V. Yakhot, Boston University, vy@bu.edu

Local 4/5-Law and Energy Dissipation Anomaly in Turbulence
G. Eyink, University of Arizona/Johns Hopkins University, eyink@mts.jhu.edu

Fluctuations of the Atomic Step Bordering a Crystalline Facet
H. Spohn, TU Munchen, Germany, spohn@mathematik.tu-muenchen.de

(Approximately) Inverting a Compact Operator under Sparsity Constraints
I. Daubechies, Princeton University, ingrid@math.princeton.edu

Constructive Neuroscience: Lessons from Ada
K. Hepp, ETH, Zurich, khepp@itp.phys.ethz.ch

Symmetry Breaking in Complex Financial Markets: Identification of Two Phases
V. Plerou, P. Gopikrishnan, and *H. E. Stanley, Boston University, hes@meta.bu.edu

Sinai–Ruelle–Bowen Measures and Rain Initiation in Warm Clouds
G. Falkovich, Weizmann/IAS, fnfal@ias.edu

The Entropy Problem and A New View of Oscillating Cosmology
P. J. Steinhardt, Princeton University, steinh@Princeton.edu

Human Rights Session on Social Responsibilities of Scientists. Participants include:
G. Barber, ACLU, Civil Liberties After 9-11
J. Lebowitz, Rutgers, Academics and the Middle East

Quantum Spin Chains and Number Theory
V. Korepin, SUNY at Stony Brook, vladimir@insti.physics.sunysb.edu

More Combinatorial Aspects of the Ice Model/XXZ Chain
M. T. Batchelor, Australian National University, murrayb@maths.anu.edu.au

From tJ to Hubbard: an Excursion in Phase Diagram Space
A. N. Berker, Istanbul Technical University and MIT, nihat@gursey.gov.tr

Chemical Reactivity Theory, "Atoms" in "Molecules," and Non-Integer Electron Numbers in Density Functional Theory
M. Cohen, Rutgers University, mhcohen@prodigy.net

Casimir Forces and Anomalous Wetting
*S. Balibar and T. Ueno, ENS, France, Sebastien.Balibar@lps.ens.fr

Statistical Mechanics of Real Materials from First Principles
K. Rabe, Rutgers University, rabe@physics.rutgers.edu

Existence and Blow-Up of Solutions to a Nonlinear Boundary Value Problem Arising in Corrosion Modeling
M. Vogelius, Rutgers University, vogelius@hilbert.rutgers.edu

Multidimensional Nonlinear Dispersive Waves: From Exact Results to Applications
A. Soffer, Rutgers University, soffer@math.rutgers.edu

Scattering Resonances and Higher Order Homogenization Theory
*M. I. Weinstein and S. E. Golowich, Bell-Labs, miw@research.bell-labs.com

Maxwell Model of Inelastic Collisions
E. Ben-Naim, Los Alamos National Laboratories, ebn@lanl.gov

Hard Spheres and Nonspheres in Fields: Packings and Crystallization of Colloids
P. Chaikin, Princeton University, chaikin@princeton.edu

Elliott's World: From Square Ice to Cubic Jellium
F. Dyson, IAS, dyson@ias.edu

On Lieb's Models
G. Emch, University of Florida, gge@math.ufl.edu

Gibbs, Einstein, and Statistical Mechanics a Century Ago
M. Klein, Yale University

Nernst Effect Due to Thermal Fluctuations in Superconductors
*D. Huse, S. Sondhi and I. Ussishkin, Princeton University, huse@princeton.edu

Glassy Behaviour Due Purely to Kinetic Constraints
D. Sherrington, University of Oxford, U.K./IAS, D.Sherrington1@physics.ox.ac.uk

Potts Models, Chromatic Polynomials, and All That
A. Sokal, New York University, sokal@nyu.edu

Mean-Field Driven First Order Transitions (A belated tribute to reflection positivity)
L. Chayes, UCLA, lchayes@math.ucla.edu

The Thermodynamic Stability of the Hydrogen-Carbon System

J. Kenney, Russian Academy of Sciences, jfk@alum.mit.edu

Transport in One-Dimensional Wires: the Role of Reservoirs

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Some Remarks on Electromagnetism and Quantum Theory

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

New Analytic Methods in the Study of Time-Dependent Schrödinger Equation; Applications to Ionization Problems

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

Comparison between Hartree and Hartree Fock Approximation for N Body Time Dependent Schrödinger Equation

C. Bardos, Jussieu, France, bardos@math.jussieu.fr

On the Distribution of Free Path Lengths for the Periodic Lorentz Gas

*E. Caglioti, Università di Roma "La Sapienza," caglioti@mat.uniroma1.it, and F. Golse, ENS, France

SHORT COMMUNICATIONS

Incipient Force Chains in Gravity Driven Granular Flow

A. Ferguson, Brandeis University, shamrock@brandeis.edu

Adsorption Phenomena in the Transport of a Colloidal Particle through a Nanochannel Containing a Partially Wetting Fluid

G. Drazer, CCNY, J. Koplik, CCNY, A. Acrivos, CCNY, *B. Khusid, NJIT, boris.khusid@njit.edu

Functional Relations and Bethe Ansatz for the XXZ Chain

R. Nepomechie, University of Miami, nepomechie@physics.miami.edu

Simplified Crossing Formulas for Critical 2D Percolation in a Triangular Domain

R. S. Maier, University of Arizona, rsm@math.arizona.edu

Reaction-Controlled Diffusion: Monte Carlo Simulations

*B. Reid, J. Brunson and U. Täuber, Virginia Tech, bereid@vt.edu

The Scott Correction of Molecules

J.-P. Solovej, Copenhagen, *W. Spitzer, UC Davis, spitzer@math.ucdavis.edu

Phase Transition and Gravothermal Catastrophe in a Model Gravitational System

*B. Miller and P. Klinko, Texas Christian University, B.Miller@tcu.edu

Vortex Formation in a Gas of Two-Level System

A. Muriel, Data Transport System, dtsny@msn.com

Anomalous Transport in Quantum Dot Arrays
*D. Novikov and L. Levitov, MIT Physics, dima@mit.edu

Transport through a Mesoscopic Superconducting Grain in the Presence of Ohmic Dissipation
*G. Refael[1], E. Demler[1], Y. Oreg[2], D. S. Fisher[1]
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A Bochner-Type Theorem for Point Processes
T. Kuna, University of Bielefeld, Germany, tkuna@mathematik.uni-bielefeld.de

Effects of Differential Mobility on Biased Diffusion of Two Species
R. S. Hipolito, *R. K. P. Zia and B. Schmittmann, Virginia Tech, rkpzia@vt.edu

Domain Growth in a Quasi One-dimensional Driven Diffusive System
*J. T. Mettetal, B. Schmittmann, and R. K. P. Zia, Virginia Tech xero@vt.edu

Unconditionally Stable Evolution of the Cahn-Hilliard Equation
*B. Vollmayr-Lee, Bucknell University, bvollmay@bucknell.edu and A. Rutenberg, Dalhousie University

Polymer Translocation Through a Long Nanopore
E. Slonkina, Moscow State University and *A. B. Kolomeisky, Rice University, tolya@mail.rice.edu

Lattice Electrolytes with Charge Asymmetry
M. N. Artyomov, Moscow State University, *V. Kobelev and A. B. Kolomeisky, Rice University, volk@rice.edu

Quantum Correlations in a Coulomb Fluid Near a Wall
*J.-Noel Aqua, Univ. of Maryland, Francoise Cornu, Univ. of Paris 11, jnaqua@glue.umd.edu

Precise Estimation of Near-critical Coexistence Curves in Simulations
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Zeros of the Partition Function and Pseudospinodals in a Near-Mean-Field Ising Model
*N. Gulbahce, Clark University, ngulbahce@physics.clarku.edu, H. Gould, Clark University and W. Klein, Boston University and LANL

Sharpness of freezing in one dimension
K. Koga, Cornell University/Fukuoka Univ. Edu., Japan, kk275@cornell.edu

Inverse Melting
*F. H. Stillinger, M. F. Feeney, P. G. Debenedetti, Princeton University, fhs@princeton.edu

Random Field Ashkin-Teller Models
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Two Point Correlation Function in 2d Fermi Systems with Symmetric Fermi Surface
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Anderson Localization for a Ramdon Flux Model
F. Klopp, Université Paris-Nord, France, S. Nakamura, University of Tokyo, Japan, *F. Nakano, Tohoku University, Japan, and Y. Nomura, Tokyo Institute of Technology, Japan

Some Remarks on the Low Temperature Electronic Transport through Macromolecules
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Gibbs States of a Quantum Crystal: Uniqueness for Small Particle Mass
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Self-Similar Random Configurations with Accumulation Points, and Diffeomorphism Groups
*T. Sakuraba, sakuraba@eden.rutgers.edu, G. A. Goldin, Rutgers University and U. Moschella, Universita dell'Insubria, Italy

Aperiodic Lorentz Gas in 2D: Recurrence and Ergodicity
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Persistence Probability for Fluctuating Steps
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Depinning of Semiflexible Polymers in $(1+1)$ Dimensions
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Hedgehog-Antihedgehog Annihilation to a Static Soliton
*P. E. Cladis and H. R. Brand, ALCT, Inc., cladis@alct.com,

Large Deviations for Quantum Systems
T. C. Dorlas, Dublin Institute for Advanced Studies, dorlas@stp.dias.ie

Biophysical Approach to Transcription Factor Binding Site Discovery
*M. Djordjevic, Columbia & Rutgers University, A. Sengupta and B. Shraiman, Rutgers University

Entropy Production and Time Irreversibility of Brownian Macromolecule with Inertia
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On the Lowest Energy Nucleation Path in a Supersaturated Lattice Gas
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Anomalous level crossings of the XYZ and XXZ spin chains

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From N-body Dynamics to Kinetic Equations in the Chaotic Regime of Plasma Turbulence

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