Journal of Statistical Physics, Vol. 63, Nos. 3/4, 1991

Program of the 64th Statistical Mechanics Meeting

Department of Mathematics, Rutgers University,
December 19–21, 1990

Dear Reader,

Here are the titles of the talks presented at the last semiannual Statistical Mechanics Meeting. Also included are the talks presented at the special one-day-conference in honor of Harry L. Frisch. As usual, these titles are informal and, 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 requires a more complete address may obtain it by writing to me.

In addition to the talks, the program for these meetings also has a "positions wanted" and "positions available" section. If you are interested in receiving the full program of these meetings, please send me a self-addressed envelope.

The next meeting, the 65th, is scheduled for May 15–17, 1991. One of these days will be devoted to problems in "quantum chaos" and quantum mechanics of mesosystems.

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CONFERENCE IN HONOR OF H. L. FRISCH, DECEMBER 19, 1990, RUTGERS UNIVERSITY

Program

J. Percus, Courant Institute–NYU, Classical Fluids in High Dimensional Space
F. Stillinger, Bell Labs, Irregular Disk and Sphere Packings
H. Reiss, UCLA, Statistical Geometry of Microemulsions
B. Julesz, Rutgers University, Texture Discrimination and Focal Attention
G. Nicolis, Service de Chimie Physique, Belgium, Diffusion in a Bistable Potential and Stochastic Resonance
E. Helfand, Bell Labs, Large Fluctuations in Polymer Solutions Under Shear
V. Privman, Clarkson University, Kinetics and Statistical Mechanics of Colloids at Surfaces
G. Forgacs, Clarkson University, Wetting, Percolation, and More in a Model Biological Tissue System"
L. Lerman, MIT, Two Studies on DNA: Packing and Electrophoretic Mobility
B. Widom, Cornell University, The Repton Model of Electrophoresis

64TH STATISTICAL MECHANICS MEETING, DECEMBER 20–21, 1990

Mini-Reviews

Correlation Functions in 1-D Hubbard Model
V. Korepin, SUNY at Stony Brook
Field Theory of Critical Adsorption
H. W. Diehl, Simon Fraser University
Critical Endpoints and Interfaces
M. E. Fisher, University of Maryland
Summing over Directed Paths in Random Media
M. Kardar, MIT
Statistical Mechanics and Error-Correcting Codes
N. Sourlas, IAS/École Normale, Paris
Multifractal Measures, Turbulence and DLA
B. Mandelbrot, IBM

Dynamical Systems and WeakTurbulence
J.-P. Eckmann, University of Geneva
Soft-Condensed Interfaces and Weak Surface Bonding: from Simple to Complex Designs in Biology
E. Evans, University of British Columbia
Theory of Random Surfaces
A. Polyakov, Princeton University

Informal Session on "Interesting and/or important problems in statistical mechanics for the 90's": Participants include P. W. Anderson, D. Chandler, E. Siggia, J. Lebowitz, A. B. Zamolodchikov, B. Widom; M. Fisher (Chair)

Short Communications

Numerical Studies on the Level Statistics of a Simple Integrable Quantum System
Zheming Cheng and J. L. Lebowitz, Rutgers University
Brownian Oscillator Interacting with a Quantum Heat Bath
R. J. Rubin, National Institutes of Health, Bethesda, MD
The Best and Fastest Random Numbers Ever
A. Compagner, Laboratory of Applied Physics, Delft, The Netherlands
An Example of Chaos in Linear Systems
V. Protopopescu, Oak Ridge National Laboratory, TN
Chaotic Waterwheel
G. Gumbs, MIT
Statistical Mechanics of Small-Dimensional Chaos
Victor Berdichevsky, Georgia Tech
Two-Dimensional Potts Model by Vdovichenko's Method: Exact Solution
Arkady L. Kholodenko, Clawson University
Exactly Solvable Model of a Polymer Collapse Transition
G. Forgacs and M. Semak, Clarkson University
Density Profiles in Confined Critical Systems and Conformal Invariance
T. W. Burkhardt and T. Xue, Temple University
New Small R.G. Parameter
Y. M. Ivanchenko, A. A. Lisyansky, and A. E. Fillipov, Polytech University
Rate Equation Approach and Finite-Size Effects in Kinetics of Surface Processes
M. C. Bartelt and V. Privman, Clarkson University

Random Sequential Adsorption on Square and Triangular Ladders
Y. Fan and J. K. Percus, Courant Institute, NYU

A General Closure Scheme for the Joint Density Function in Diffusion-Limited Reaction in any Dimension
Jian-Cheng Lin and Charles R. Doering, Clarkson University

Nex Spatial Features of Two-Species Annihilation
D. Ben-Avraham, F. Leyvraz, and S. Redner, Instituto de Fisica, Mexico

Stability and Relaxation of Power-Law Distribution
Hideki Takavasu, Astero Provata, and Misako Takayasu, Boston University

Critical Dynamics and Diffusion Anomaly near the Structural Phase Transition on W(100)
W. K. Han, T. Ala-Nissila, and S. C. Ying, Brown University

Prediction of Logarithmic Growth in a Quenched Ising Model
Joel D. Shore and James P. Sethna, Cornell University

Growth-Induced Roughening of Crystalline Facets
Maya Paczuski, Terry Hwa, and Mehan Kardar, MIT

Interface Growth with a Shadow Instability
Christopher Roland, AT & T Bell Labs, and Hong Guo, McGill University

Three-Dimensional Foams: Structure, Dynamics, and Coarsening
D. J. Durian, D. A. Weitz, and D. J. Pine, Exxon Research

Pattern Formation in Viscous Fingering: A RG Study
Jysoo Lee, A. Coniglio, and H. E. Stanely, Boston University

Dissipative Dynamics of Closed Curves in Two Dimensions
Stephen A. Langer and Raymond E. Goldstein, University of Chicago

The Motion of a Needle-like Dendrite
Sergei Esipov, Syracuse University

Anomalous Exponents and Scaling in Surface Growth with Power Law Noise
Jacques Amar and Fereydoon Family, Emory University

A New Approach to Scaling in Open Dissipative Systems: Application to Surface Growth and Self-organized Criticality
Fereydoon Family and George Hentschel, Emory University

Great Events in Sandpiles
Terence Hwa and Mehran Kardar, Harvard University

Self-Organized Criticality and Singular Diffusion
J. Carlson, J. Chayes, E. Grannan, and G. Swindle, AT & T Bell Labs

Attracting Solutions to the Singular Diffusion Equation for Self-Organized Criticality
Jennifer Tour Chayes, Stan Osher, and James Ralston, UCLA

Diffusion and Propagation on a Triangular Lattice Gas Cellular Automaton
X. P. Kong and E. G. D. Cohen, Rockefeller University

Directed Paths on Percolation Clusters
Leon Balents and Mehran Kardar, Harvard University

Anisotropy and Critical Behavior in a Nonequilibrium Phase Transition
D. Browne, B. Yu Lsu, and P. Kleban, University of Maine

Shock Fluctuation in Asymmetric Exclusion Models
Frank Alexander, Zheming Cheng, and Joel L. Lebowitz, Rutgers University

Shock Fluctuation in the Boghosian–Levermore Model
A. Ravishankar, New Paltz, and Pablo Ferrari, Sao Paulo

Driven Diffusive Systems with Chemical Potential Gradient
D. Boal, B. Schmittmann, and R. K. P. Zia, Simon Fraser University, and Virginia Tech

Finite-Size Sealing in Intrisically Anisotropic Systems
Kwan-tai Leung, Virginia Tech

It's All Done With Mirrors
R. M. Ziff, University of Michigan, and E. G. D. Cohen and X. P. Kong, Rockefeller University

Link Between Flow and Trapping in Random Porous Media
S. Torquato, Courant Institute, NYU

The Effective Field Approximation for Ising Spin Glasses on Simply Connected Lattices
Guihua Zhang and J. K. Percus, Physics Department, NYU

Domain Growth in an Ising Spin Glass
David Huse, AT & T Bell Labs

Order Parameter Distribution of the Random Bond Ising Ferromaguet with Antiperiodic Boundary Conditions
R. E. Hetzel and R. N. Bhatt, AT & T Bell Labs

Wetting Phenomena on Rough Substrates
Hao li, and Mehran Kardar, MIT

Role of Topological Entanglements in the Weak Pinning Regime
S. Obukhov, University of Florida, Y. Shapir, University of Rochester, and M. Rubinstein, Kodak, Rochester

Unusual Finite-size Effects in Sliding Charge Density Waves
C. Myers and J. Sethna, LASSP, Cornell University

Power-Law Falloff in Two-Dimensional Coulomb Gas at $B > 8\pi$
Domingos H. Marchetti, Rutgers University, and Abel Klein, UCI

Asymptotic Breakdown of Debye Screening
Michael K.-H. Kiessling, Courant Institute

Structure of Decagonal Quasicrystals
S. E. Burkov, Cornell University

Bicritical and Tetracritical Points in a Random Tiling Model
Weixing li and Mike Widom, Carnegie-Mellon University

Onsager Reaction Terms for the Hubbard Model
A. Georges, Princeton University, and J. Yedodia, Harvard University and Paris

Dielectric Spectrum of Polarizable Liquids
Zhe Chen and R. M. Stratt, Brown University

The Phenomenon of Diverging Phase-Space Trajectories for a Class of Hamiltonian Maps
Alessandro Monge, Rockefeller University

Effects of Finite Size on Critical Behavior of a Deterministic Dynamical System
A. A. Middleton, Syracus University and D. S. Fisher, Harvard University

Dynamics of a Billiard in a Discontinuous Field: The Smooth Fermi Piston
Bruce Miller, Greg Worrel, and Alex Matulizh, Texas

Special Systems of N Balls that are Ergodic
L. Bunimovich, C. Liverani, A. Pellegrinotti, and Y. Sukhov, Rome II

Semi-Classical Limit of the Nonlinear Schrödinger Equation
Shan Jin and Dave Levermore, University of Arizona, and Dave McLaughlin, Princeton University

Context-Free Languages and $1/f$ Spectra
Wentian Li, Santa Fe Institute

Phase Transitions in Learning from Examples
H. Sompolinsky and N. Tishby, AT & T Bell Labs

Parallel Computation, Statistical Mechanics and Complexity
J. S. Judd, Siemens

Exact Solution for Percolation Clustering in Electrolytes
Jim Gibbon, Stony Brook

Regularity Properties and Pathologies of Position-Space R.G.
Aernout C. D. Van Enter, Roberto Pernandez, and Alan D. Sokal, NYU

New Multicritical Phase Diagrams from the Blume–Emery–Griffiths Model with Repulsive Biquadratic Interactions
W. Hoston and A. Nihat Berker, MIT

Phase Transitions on Misoriented Si(100) Surfaces
O. L. Alerhand, Bellcore, A. Nihat Berker and J. D. Joannapoulos, MIT, and D. Vanderbilt, Rutgers University

Monte Carlo Mean-Field Theory and Frustrated Systems in Two and Three Dimensions
Roland R. Netz and A. Nihat Berker, MIT

Ordering Due to Disorder in a Triangular Heisenberg Antiferromagnet with Exchange Anisotropy
Qing Sheng and Christopher Henley, Cornell University

Parameter Estimations for the Curie–Weiss–Potts Model
Kongming Wang, University of Massachusetts at Amherst

Maps of Intervals with Indifferent Fixed Points: Thermodynamic Formalism and Phase Transitions
T. Prellberg and J. Slawny, VPI and State University, Virginia, and Weizmann Institute

Statistical Physics of Intermittent Dynamics
Xiao-Jing Wang, National Institutes of Health, Bethesda, MD

Decay to Equilibrium and Phase Transition in Discrete Gaussian Model
Boguslaw Zegarlinski, Ruhr University, Bochum and MIT

Phase Transitions in Fractal Porous Media
J. Machta, University of Massachusetts at Amherst

Velocity Selection in Self-Induced Transparency
S. Branis, Emory University, and O. Martin, CCNY

Three-Point Correlation Functions in Uniformly and Randomly Driven Diffusive Systems
Kai Hwang, Beate Schimidtman, Royce, and K. P. Zia, Virginia Tech

Simplex Inequalities for the Surface Tension
S. Shlosman, UCI, Irvine, California

Anisotropic Interface-Controlled Crystal Growth: Theory and Computation
Jean E. Taylor, Rutgers University

(A) Critical Initial Smoothness of the Two-Dimensional Interface for Needle Structure Growth
(B) Influence of the Isotropic Surface Tension on the Two-Dimensional Growth
Mark Mineev, Northwestern University

Dynamics of Toom Interfaces
B. Derrida, Saclay, J. L. Lebowitz and E. Speer, Rutgers University, and H. Spohn, IAS

New Results on the Kinetics of Multilayer Particle Deposition
M. C. Bartelt and V. Privman, Clarkson University

Ballistic Deposition and Random Sequential Filling
Joachim Krug, IBM, T. J. Watson Research Center

Some Exact Results for a One-Dimensional Avalanche Model
Amy Kolan, Itamar Procacciz, Ashvin Chhabra, Reuven Zeitak, and Leo Kadanoff, University of Chicago

On the Universality Class of a 1-d Cellular Automaton
Iwan Jensen, Lehman College, CUNY

Central Limit Theorems in a 1-D Rayleigh Gas
L. Erdos, Princeton University, and Dao Q. Tuyen, Institute of Mathematics of Hanoi, Vietnam

First Order Phase Transition in a Simple Nonequilibrium Model
Ronald Dickman, Lehman College, CUNY

Mean Field Theory of the Triplet Creation Model
Tania Tome, Rutgers University, and R. Dickman, Lehman College, CUNY

Finite Size Effects and Shock Fluctuations in the Asymmetric Simple Exclusion Process
Steven A. Janowsky and Joel L. Lebowitz, Rutgers University

Conformal Transformations of Vesicle Shapes
Udo Seifert, Simon Fraser University, Burnaby, British Columbia, Canada

Orientational Order and Shapes of Vesicles
F. C. MacKintosh, Exxon, and T. C. Lubensky, University of Pennsylvania

The Shapes of Polymers
H. W. Diehl, E. Eisenriegler, and O. Jagodzinski, Simon Fraser University, Burnaby, British Columbia, Canada

Theory of the Motions of Flexible Polymers in a Dynamically disordered Medium: Crossover from Dilute Solutions to Melts
I. Szleifer and R. F. Loring, Cornell University

How to Find a Lax Pair from the Yang–Baxter Equation?
M. Q. Zhang, Courant Institute, NYU

Complex Geometric Asymptotics
Marks S. Alber, University of Notre Dame

Lattice Chern–Simons Theory, Anyonization and Superfluidity in $2+1$ Dimensions
David Eliezer, University of British Columbia

Exact Solution of the BCS Model in the Non-Regular Phase
A. F. Izmailov and A. Kessei, NYU

Disorder and Pinning in High-T_c Superconductors
E. M. Chudnovsky, Lehman College, CUNY

Dissipative Electronic Transport with a Master Equation Deduced from the Keldish Formalism
Horacio M. Pastawski, MIT

The Electron Component of a Plasma in a Homogeneous Electric Field
Alexander Rokhlenko, Rutgers University

Fractional Statistics, Many Electron Wave Functions and Effective Theories of Fractional Quantum Hall Effect
Boris Blok, Princeton University

Tunneling Enhancement by Time-Dependent Processes: Applications to Reactions in Solvents
Daniel Neuhauser, Princeton University

Spectral Properties of Quasiperiodically Driven Quantum Systems
P. Bleher, H. R. Jauslin, and J. L. Lebowitz, Rutgers University

Linear Decay in Multi-Level Quantum Systems
C. R. Doering and L. S. Schulman, Clarkson University, and S. B. Gavea, Université P. et M. Curie

Statistical Physics of Intermittent Dynamics
Xiao-Jing Wang, National Institutes of Health, Bethesda, MD

Two-Dimensional Turbulence at Hyperresolutions
D. G. Dritschel, DAMTP Cambridge University, Cambridge, England

Spatial Distribution of the Closest Particle to a Trap
S. Redner and D. Ben-Avraham, Boston University

Long Transmission Times for Transport Through a Weakly Scattering Slab
Charles R. Doering, Tane S. Ray, and M. Lawrence Glasser, Clarkson University

Speckle Pattern Tomography in Multiple Scattering Media
R. Berkovits, MIT, and S. Feng, UCLA

Free Energy of Rectangles at Criticality via Conformal Field Theory
P. Kleben and I. Vassileva, University of Maine

Exact Universal Amplitude Ratios in Two-Dimensional Critical Phenomena
M. Lassig, University of California

Calculating the Conformal Central Charge
G. A. Baker, Jr., Los Alamos National Laboratory, and R. R. P. Singh, University of California, Davis