

## **Statistical Physics at the 45th Parallel: 6th Annual Meeting<sup>1</sup>**

### **CONTRIBUTED PAPERS**

#### **Session I.1**

*Chairperson:* Martin Zuckerman (McGill)

*Invited speaker:* Larry S. Schulman (Clarkson)

The Quantum Measurement Problem and the Foundations of  
Statistical Mechanics

#### **Session I.2**

*Chairperson:* Bela Joos (Ottawa)

*Invited speaker:* A. Longtin (Ottawa)

Stochastic Resonance in Excitable Media

#### **Session C.1**

*Chairperson:* Vladimir Privman (Clarkson)

C. Van Den Broeck (UC San Diego)

Clipped Hebbian Training of the Perceptron

G. W. Slater (Ottawa)

Theory of Molecular Diffusion during Gel Electrophoresis of  
Polyelectrolytes

Gan Hin Hark (McGill)

Integral Equation Formalism of Dense Polyatomic Fluids

Bob Gooding (Queens)

Chiral Spin Defects and the High  $T_c$  Magnetic Phase Diagram

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<sup>1</sup> Sponsored by Clarkson University, Potsdam, New York, 2–3 October 1992. Local organizing committee: C. R. Doering and M. L. Glasser.

**Session C.2**

*Chairperson:* Larry Schulman (Clarkson)

G. L. Nixon and G. W. Slater (Ottawa)

Brownian Dynamics Simulation of Polyelectrolytes in Confined Media with Obstacles

B. Joos (Ottawa)

Self Repairing Monolayers

P. Mayer, G. Drouin, and G. W. Slater (Ottawa)

The Entropic Barrier Regime and the Electrophoretic Sequencing of DNA

M. Zuckerman (McGill)

A Model for Phase Separation in Lipid Mixtures

G. Forgacs (Clarkson)

Phase Diagram for Exactly Solvable Polymer Brush

**Session C.3**

*Chairperson:* Gary Slater (Ottawa)

I. L'Heureux (Ottawa)

Barrier Crossing Dynamics with BGK Kinetics

J. Wang (McGill)

Universal Conductivity of Dirty Bosons

D. G. Rancourt (Ottawa)

General Method for Applying MFT to Disordered Magnetic Alloys

D. Ben Avraham (Clarkson)

Is the Grassberger Janssen Conjecture Really True?

S. Perkovic (Cornell)

The Pre-Wetting Transition: Phase Equilibrium in Two Dimensions

V. Korepin (Stoney Brook)

Temperature Correlations in the XY-Model

S. Lovejoy (McGill)

First and Second Order Multifractal Phase Transitions and Turbulence

V. Privman (Clarkson)

Exact Solution of a Three Body Reaction-Diffusion System

**Session I.3**

*Chairperson:* Charles Doering (Clarkson)

*Invited speaker:* J. L. Lebowitz (Rutgers)

Statistical Mechanics of Non-equilibrium Systems: A Selective Overview

**POSTER SESSION**

- C. Doering and J. C. Gadoua (Clarkson)  
Resonant Activation over a Fluctuating Barrier
- M. Dube (Ottawa)  
Application of a Mean Field Method to Disordered FCC Fe–Ni Alloy
- V. Korepin (Stoney Brook)  
Electronic Model of Superconductivity
- M. Harrison (Michigan State University)  
Paramagnetic and Heat Capacity Oscillations of 2D Electron Systems  
Confined within Quantum Wells
- S. Y. Wu and G. W. Slater (Ottawa)  
Static Structure Factor and Shape of Reptating Telechelic Ionomers in  
Electric Fields
- B. Watson (St. Lawrence University) and S. Lovejoy (McGill)  
Scattering Statistics in Thick Multifractal Clouds
- Z. Yan (McGill)  
Chaos of Disordered Quantum Systems
- Qiang Ren (Ottawa)  
Dislocation Dipoles in Different Classes of Monolayers
- J. Aidanpaa (Clarkson)  
Periodic and Chaotic Motions in Simple Impacting Systems
- Y. Wang (McGill)  
Quantum Calculation on Chaotic Scattering
- N. Govind (McGill)  
Effects of Impurities to Interface Dynamics with a Conservation Law
- H. Guo (McGill)  
Surface Tension Driven Nonlinear Instability in the Staffman–Taylor  
Problem
- J. Wang (McGill)  
Semi-classical Calculation of Electron Transport through a Classically  
Chaotic Structure