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Program of the Workshop on Large-Scale Computations in Statistical Physics[1]

University of Southern Mississippi February 26–27, 1990

Chair, Workshop: Ras Pandey, Department of Physics and Astronomy, University of Southern Mississippi, Hattiesburg, MS39406-5046, USA.

February 26, 1990

Morning session, Chair: Grayson Rayborn

Welcome: Dr. G. David Huffman, Vice President for Academic Affairs

Keynote Address: Dr. Karen Yarbrough, Vice President for Research and Extended Services

Opening Lecture: K. Binder, University of Mainz
Computer simulation of phase transitions in adsorbed layers at surfaces

B. Swope, IBM Palo Alto Scientific Center
Million particle molecular dynamics simulations of nucleation of crystals in a supercooled atomic liquid

A. Ferrenberg, University of Georgia
High accuracy Monte Carlo study of 3D Ising critical behavior

Afternoon session, Chair: Kurt Binder

D. P. Landau, University of Georgia
Monte Carlo studies of dynamic critical behavior

P. A. Rikvold, Supercomputer Computations Research Institute, FSU
Nonequilibrium information from transfer-matrix calculations

C. Günther, P. A. Rikvold, and M. A. Novotny, Supercomputer Computations Research Institute, FSU
First-order transitions and tricritical points in a model for oxygen ordering in a $YBa_2Cu_3O_{6+x}$

M. Herman, Tulane University
Solvent induced relaxation of excited state vibrational population of diatomics: A mixed quantum–classical simulation

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M. Sahimi, University of Southern California
Applications of large scale computations and statistical physics of disordered systems to transport and reaction in porous media
V. Privman, Clarkson University
New directions in finite size scaling theory

February 27, 1990
Morning session, Chair: David Landau
D. Stauffer, Jülich Supercomputer Center
Q2R cellular automata—An alternative Ising model algorithm?
R. Gerling, University of Erlangen
Classification of cellular automata
R. Pandey, University of Southern Mississippi
Computer simulation models for the immune response
P. B. Visscher, University of Alabama
Stress as an order parameter for the glass transition
H. Nakanishi, Purdue University
Scaling at the rod-to-flexible chain crossover in the stiff limit

Afternoon session, Chair: Dietrich Stauffer
R. Hall, Louisiana State University
Path integral studies of sodium cluster
Short presentations
High resolution Monte Carlo study of the 3D classical Heisenberg ferromagnet, P. Peczak and D. P. Landau, Center for Simulational Physics, University of Georgia
Phase diagram of the $d=3$ Ising model with competing interactions, R. Heilmann, A. Ferrenberg, and D. P. Landau, Center for Simulational Physics, University of Georgia
Ising models with correlated disorder, J. Lee, Department of Physics and Astronomy, University of Southern Mississippi
Long- and short-range ion transport in heterogeneous polymers, K. Mauritz, Department of Polymer Science, University of Southern Mississippi
A general free volume-based theory for the diffusion of large molecules in amorphous polymers above T_g: Polymer-penetrant intersection, C. S. Coughlin, K. Mauritz, and R. F. Storey, Department of Polymer Science, University of Southern Mississippi
Maximum entropy reconstruction of equations of state—Hard core systems, L. R. Mead, Department of Physics and Astronomy, University of Southern Mississippi
Connectivity in a 2D lattice fluid, S. Gao and R. Pandey, Department of Physics and Astronomy, University of Southern Mississippi

The use of digital signal processors for nonlinear dynamics, T. Dunn, P. Stephenson, and R. Gibbs, Department of Physics, Louisiana Tech University

Computer support and facilities at the University of Southern Mississippi, D. Page and J. Waggle, Computing Center, University of Southern Mississippi

Concluding remarks: Grayson Rayborn, Chair, Department of Physics and Astronomy, University of Southern Mississippi