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Scientific Program

Monday, November 21, 1983

Session 1

Michael F. Shlesinger, Chairman
Office of Naval Research
Opening Remarks

Fractal Diffusion and Diffusion on Fractals
B. B. Mandelbrot (IBM)

Random Walk Statistics in Fractal Structures
R. Rammal (CNRS and University of Pennsylvania)

Trapping and Reaction Rates on Fractals
J. Klafter (Exxon)

Linear Problems on Fractals
S. Alexander (Hebrew University)

Magnetic Correlations on Fractals
A. Aharony (Tel-Aviv University)

Hierarchical Models and Chaotic Spin Glasses
A. N. Berker (MIT)

Energy Transfer in Fractal Media
A. LeMehaute (Compagnie Générale d'Électricité)

Session 2

B. B. Mandelbrot, Chairman (IBM)

Spectral Properties of Fractal Structures
G. Toulouse (École Normale Supérieure)

Theory of the Fracton Character of the Vibrational Excitation Spectra
R. Orbach (UCLA)

Scattering from Non-Gaussian Fractal Surfaces
D. Berman (Naval Research Laboratory)

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The Fractal Dimension of Ultrasonic Scatterers
B. West (La Jolla Institute) and M. Shlesinger (ONR)

Partial Dimensionality Sequences
Y. Gefen (UCSB)

Tuesday, November 22, 1983

Session 3

F. Family, Chairman (Emory University)

Diffusion-Limited Aggregation
T. Witten (Exxon)

Fractal Aspects of Aggregation and Gelation
H. E. Stanley (Boston University)

Multiparticle Fractal Diffusive Aggregation
R. F. Voss (IBM)

Cellular Automata, Limit Cycles, Curdling, and Field Theory
E. A. Di Marzio (NBS)

Propagation and Trapping of Excitations on Fractals
I. Webman (Exxon)

Transport in Disordered Systems: A Fractal View
R. J. Rubin (NBS)

Fractal Surfaces over Length Scales 1 to 1000 Angstroms from Adsorption Studies in Neutron Scattering to Catalysts
P. Pfiefer (University of Bielefeld)

Session 4

R. J. Rubin, Chairman (NBS)

Fractals and Fluid Turbulence
I. Procaccia (Weizmann Institute)

Fractal Time and Where to Look for It
E. W. Montroll and M. F. Shlesinger (University of Maryland and ONR)

Fractal Time Aspects of Recombination in Amorphous Semiconductors
H. Scher (Sohio)

Lévy Stable Distributions and Polymer Relaxation
J. Bendler (GE)

Monte Carlo Studies of Two Measurements of Polymer Chain Size as a Function of Temperature
C. Guttman (NBS)

Wednesday, November, 23, 1983

Session 5

H. E. Stanley, Chairman (Boston University)

Fractal Dimension and Grand Universality of Critical Phenomena
F. Family (Emory University)

Adjustable Fractals, Percolation, Self-Avoiding Random Walks
S. Havlin (NIH)

Fractal Dimension and Mass Fluctuations at Percolation
A. Kapitulnik (UCSB)

A New Model of Percolation Clusters
J. Given and B. B. Mandelbrot (IBM)

Anharmonic Molecular Spectra, Self-Consistent Mode Coupling, Nonlinear Maps, and Quantum Chaos
S. Mukamel (University of Rochester)

From Megahertz to Microhertz: Strange Patterns in Rhovlbronic Spectra and Nonlinear Dynamics of Polyatomic Molecules
W. Harter (Georgia Tech)

Fractal Structure of Mode-Locking Phenomena in Dynamical Systems
P. Bak (Brookhaven National Laboratory)

Session 6

G. H. Weiss, Chairman (NIH)

Trajectory Scaling Functions and Dimensions
M. Feigenbaum (Cornell University)

An Obstruction to Predictability: Fractal Basin Boundary
J. Yorke (University of Maryland)