5th Workshop on Nonlinear Dynamics and Chaos

Courant Institute of Mathematical Sciences
New York University, 251 Mercer St., NY, NY 10012

October 25-26, 2002

Sponsored by the Office of Naval Research, and the Courant Institute of Mathematical Sciences, New York University.
Organized by L.-S. Young and G.M. Zaslavsky

TITLES OF TALKS AND SPEAKERS

FRIDAY, OCTOBER 25 – Warren Weaver Hall 102

- **8:30 – 8:50 A.M.** ***Coffee and Bagels (WWH Lobby)***
- **8:50 – 9:00** ***Opening***
- **9:00 – 9:40** *"Nonlinear Dynamics of Mixing in Fluids"*
  J. Gollub (Haverford)
- **9:45 – 10:25** *"Constructing Complexity"*
  L. Kadanoff (U. Chicago)
- **10:30 – 11:00** ***Coffee Break***
- **11:00 – 11:40** *"Eigenstates on Hyperbolic Surfaces"*
  P. Sarnak (CIMS)
- **11:45 A.M. – 12:25 P.M.** *"Quasi-1D Schrödinger Operator: Localization and Delocalization"*
  S. Molchanov (U. North Carolina)
- **12:30 – 3:00** ***Lunch Break***
- **3:00 – 3:40** *"Quantum Dynamics with Single Atoms and Photons"*
  J. Kimble (CalTech)
- **3:45 – 4:25** *"From the Ocean to Jupiter to the Truncated Burgers-Hopf Equation: Novel Applications and New Mathematical Issues for Equilibrium Statistical Mechanics"*
  A. Majda (CIMS)
- **4:30 – 5:00** ***Coffee Break***
- **5:00 – 5:40** *"A Mechanism for Producing Chaos"*
  L.S. Young (CIMS)
- **5:45 – 6:25** *"Wave-Vortex Interactions in Simplified Models of Atmospheric and Oceanic Jet Streams"*
  V. Zeitlin (ENS)

- **6:30 P.M.** ***Reception (13th floor, Warren Weaver Hall)***

SATURDAY, OCTOBER 26 – Warren Weaver Hall 102

- **8:30 – 9:00 A.M.** ***Coffee and Bagels (WWH Lobby)***
- **9:00 – 9:40** *"Optical Billiards and Atom Traps"*
  N. Davidson (Weizmann Institute)
- **9:45 – 10:25** *"Transport and Spectra in Rotating Fluids"*
  P. Constantin (U. Chicago)
- **10:30 – 11:00** ***Coffee Break***
- **11:00 – 11:40** *"Nonergodic Hamiltonian Dynamics: Examples and Problems"*
  G.M. Zaslavsky (Physics and CIMS)
- **11:45 A.M. – 12:25 P.M.** *"Ray and Wave Dynamics in Long-Range Underwater Sound Propagation"*
  M. Brown (U. Miami)
- **12:30 – 3:00** ***Lunch Break***
- **3:00 – 3:40** *"Return to the Differentiation of Sinai-Ruelle-Bowen States""*
  D. Ruelle (IHES)
- **3:45 – 4:25** *"Arnold Diffusion"*
  J. Mather (Princeton University)
- **4:30 – 5:00** ***Coffee Break***
- **5:00 – 5:40** *"Flux Creep and Magnetic Avalanches: A Role for Cellular Automata?"*
  K. Wiesenfeld (Georgia Tech)
- **5:45 – 6:25** *"Relative Entropy as a Predictability Functional in Dynamical Systems: Theoretical and Practical Issues"*
  R. Kleeman (CIMS)
- **6:30 P.M.** ***Reception (13th Floor, WWH)***