

## Symplectic Geometry and Physics Workshop II: Chaotic Dynamics and Transport

### Monday May 19, 2003

- 9:00–9:30 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:30–10:20 **Lai Sang Young** (New York University/Courant Institute of Mathematical Sciences)  
*Correlation decay in chaotic systems including billiards*
- 10:30–11:20 **Franco Vivaldi** (Queen Mary, University of London)  
*Arithmetic dynamics of piecewise isometries*
- 11:30–12:20 **Anatoly Neishtadt** (Space Research Institute)  
*On averaging in systems with small Hamiltonian and much smaller non-Hamiltonian perturbations*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Michael Shlesinger** (Office of Naval Research)  
*The Mathematics of Fractal Time and Levy Flights*
- 3:30–4:00 *Coffee Break*
- 4:00–4:50 **Lev Lerman** (Russia)  
*Multidimensional Hamiltonian homoclinic dynamics*
- 5:00–7:00 *Wine/Cheese Reception (Hosted by IPAM)*

### Tuesday May 20, 2003

- 9:00–9:30 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:30–10:20 **Vered Rom-Kedar** (Weizmann Institute of Science)  
*On the structure of near-integrable multi-dimensional Hamiltonian systems*
- 10:30–11:20 **Carlangelo Liverani** (University of Rome II)  
*Ergodic properties of a family of area preserving maps.*
- 11:30–12:20 **Jerrold Marsden** (California Institute of Technology)  
*Transport in Astrodynamics: The 3-body problem and Asteroid Pairs*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Albert Luo** (Southern Illinois University-Edwardsville)  
*A mapping theory for regular and chaotic motions in non-smooth dynamic systems*
- 3:30–4:00 *Coffee Break*
- 4:00–4:50 **Quidong Wang** (University of Arizona)  
*Strange Attractors Around Periodically Excited Weakly Stable Periodic*



## Wednesday May 21, 2003

- 9:00–9:30 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:30–10:20 **George Zaslavsky** (New York University)  
*Non-ergodic Hamiltonian Dynamics*
- 10:30–11:20 **Leonid Bunimovich** (Georgia Institute of Technology)  
*Kinematics, equilibrium and shape*
- 11:30–12:20 **Vadim Kaloshin** (California Institute of Technology)  
*Differentiability of Mather beta-function (or Effective Hamiltonian)*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **Maurice Courbage** (Université Paris 7)  
*Statistical irreversible evolution of chaotic systems*
- 3:20–4:00 *Coffee Break*
- 4:00–4:50 **Martin Lo** (NASA)  
*Space Travel via Chaotic Transport*

## Thursday May 22, 2003

- 9:00–9:30 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:30–10:20 **Valentin Afraimovich** (Universidad Autonoma de San Luis Potosi, Mexico)  
*The epsilon-complexity in dynamical systems*
- 10:30–11:20 **Benjamin Carreras** (Oak Ridge National Laboratory)  
*Plasma Turbulence in Magnetic Confinement Systems*
- 11:30–12:20 **Maciej Wojtkowski** (University of Arizona)  
*Limit Lyapunov spectrum in the system of falling balls*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:20 **John Lowenstein** (New York University)  
*Pseudochaos for piecewise rational rotations*
- 3:30–4:00 *Coffee Break*
- 4:00–4:50 **Turgay Uzer** (Georgia Institute of Technology)  
*Phase Space Transition States*
- 5:00–7:00 *Dinner (Hosted by IPAM)*

## Friday May 23, 2003

- 9:00–9:30 *Check-In/Light Breakfast (Hosted by IPAM)*
- 9:30–10:20 **George Haller** (Massachusetts Institute of Technology)  
*Nonlinear Dynamics of Unsteady Separation*
- 10:30–11:20 **Sergey Prants** (Pacific Oceanological Institute)  
*Quantum chaos and fractals with atoms in cavities*
- 11:30–12:20 **Igor Mezic** (UCSB)  
*Ergodic theory methods for controllability*
- 12:30–2:30 *Lunch (on your own)*
- 2:30–3:30 **Charles Jaffe** (West Virginia University)  
*Phase Space Transport: From Atomic & Molecular Physics to Celestial Mechanics*
- 3:30–4:00 *Coffee Break*
- 4:00–4:50 **Serguei Medvedev** (Institute of Computational Technologies, SB RAS)  
*TBA*
- 4:50–5:00 *Conclusion*

