

Dynamics Days 2010 Schedule

January 4 – 7, 2010



Organizing Committee:

Adilson E. Motter (Chair), William L. Kath
& Edward Ott

Hilton Garden Inn
Evanston, IL

Sunday, January 3rd

7:00 – 8:30PM Welcoming Reception

Monday, January 4th

8:20 – 9:40AM Materials Pick-up

9:40 – 10:00 Coffee Break

10:00 – 10:40 Robert Ecke (Los Alamos National Laboratory)
Fragile Jamming and Hysteresis in 2D Granular Packing

10:40 – 11:20 Fred MacKintosh (Vrije University)
Non-Equilibrium Fluctuations and Mechanics of Active Gels and Living Cells

11:20 – 11:40 Pinaki Chakraborty (University of Illinois at Urbana-Champaign)
Rotating Volcanic Plumes: Lobate Umbrellas, Tornadoes, and Lightning Sheaths

11:40 – 12:00 Laura E. Schmidt (University of Twente)
Role of Bubbles on Heat Transfer and Turbulence in Rayleigh-Benard Convection

12:00 – 1:50 Lunch (on your own)

1:50 – 2:30 Julio Ottino (Northwestern University)
The Evolution of Mixing: From Stretching and Folding to Cutting and Shuffling

2:30 – 2:50 Alexey Snezhko (Argonne National Laboratory)
Dynamic Self-Propelled Structures in Nonequilibrium Magnetic Layers

2:50 – 3:30 Predrag Cvitanovic (Georgia Institute of Technology)
Geometry of Turbulence: A Stroll Through 61,506 Dimensions

3:30 – 4:00 Coffee Break

4:00 – 4:20 Louis Pecora (Naval Research Laboratory)
Regularization of Tunneling Rates with Quantum Chaos

4:20 – 4:40 Ned J. Corron (U. S. Army RDECOM)
Matched Filter for Chaos

4:40 – 5:20 Mary Silber (Northwestern University)
Quasipatterns by Design

5:20 – 6:00 Raymond Goldstein (University of Cambridge)
Synchronization of Eukaryotic Flagella

6:30 – 9:00 Conference Dinner

Dynamics Days 2010 Schedule

Tuesday, January 5th

- 8:20 – 9:00 Harry Swinney (University of Texas at Austin)
Lethal Protein Produced in Response to Competition Between Bacterial Colonies
- 9:00 – 9:20 Wolfgang Losert (University of Maryland at College Park)
Decision Making and Collective Behavior in Cell Migration
- 9:20 – 9:40 Heather Hardway (Boston University)
Change in Structure and Stability of the Solution Set for an Idealized Gene-Network Model
- 9:40 – 10:00 Coffee Break
- 10:00 – 10:40 Jonathan Widom (Northwestern University)
The Genomic Code for Nucleosome Positioning
- 10:40 – 11:20 José N. Onuchic (University of California at San Diego)
The Energy Landscape for Folding and Molecular Motors – The Kinesin Story
- 11:20 – 11:40 Luis Mier-y-Teran (Northwestern University)
A Time-Delay Model of Protein Synthesis Obtained from Mechanistic Principles and its Application to Gene Networks
- 11:40 – 12:00 Chris Fall (University of Illinois at Chicago, Kellogg School of Management)
Mitochondrial Modulation of Intracellular Ca^{2+} Signaling
- 12:00 – 1:50 Lunch (on your own)
- 1:50 – 2:30 Jean-Pierre Eckmann (University of Geneva)
Non-Equilibrium Particle Systems
- 2:30 – 2:50 Ralph V. Chamberlin (Arizona State University)
Nanothermodynamics and Nonlinear Corrections to Statistical Mechanics
- 2:50 – 3:30 David Campbell (Boston University)
Filtering Coherent Atomic Beams: The Peierls-Nabarro Energy Landscape of the Nonlinear Trimer
- 3:30 – 4:00 Coffee Break
- 4:00 – 4:20 James Yorke (University of Maryland at College Park)
Infinitely Many Cascades Must Exist as Chaos Arises in Dimension 2
- 4:20 – 4:40 Thomas L. Carroll (Naval Research Laboratory)
Detecting Recursive and Non Recursive Filters Using Chaos
- 4:40 – 5:20 Juan M.R. Parrondo (Complutense University of Madrid)
Cooling Classical Particles with a Microcanonical Szilard Engine
- 5:20 – 5:40 Zachary Nicolaou (Northwestern University) **UPDATE**
Network Destabilizations with Inverted Mechanical Responses
- 5:40 – 6:00 Sean Cornelius (Northwestern University) **UPDATE**
Paradox of Latency in Escherichia coli Metabolic Pathways
- 7:00 – 9:00 Poster Session I & Reception

Dynamics Days 2010 Schedule

Wednesday, January 6th

- 8:20 – 9:00 Steven Strogatz (Cornell University)
Spiral Wave Chimeras
- 9:00 – 9:20 Hiroshi Kori (Ochanomizu University)
Response of Oscillator Networks: A Centrality Measure Quantifying the Relative Importance of a Node
- 9:20 – 9:40 Takashi Nishikawa (Clarkson University)
Visual Analytics for Discovering Group Structures in Networks
- 9:40 – 10:00 Coffee Break
- 10:00 – 10:40 Hans Herrmann (Swiss Federal Institute of Technology – Zurich)
The Apollonian World
- 10:40 – 11:20 Peter Grassberger (University of Calgary)
Clustering Phase Transitions in Complex Networks
- 11:20 – 11:40 Hiroya Nakao (Kyoto University)
Self-Organization of Non-Uniform Dynamical Patterns in Complex Networks of Diffusively Coupled Oscillators
- 11:40 – 12:00 Mason Porter (University of Oxford)
Communities in Networks

12:00 – 1:50 Lunch (on your own)

- 1:50 – 2:30 Daniel Gauthier (Duke University)
Observation of Boolean Chaos
- 2:30 – 2:50 Joern Davidsen (University of Calgary)
Filament Turbulence & Cardiac Fibrillation
- 2:50 – 3:30 Andreas Tribesinger (Nature Physics)
Publishing in Nature Physics

3:30 – Coffee Break

3:30 – 6:30 Heilborn Symposium* at Northwestern (Buses leave for Northwestern at 3:30)

- 3:30 – 4:00 Refreshments
- 4:00 – 5:00 James Yorke (University of Maryland at College Park)
Chaos
- 5:00 – 6:30 Wine & Cheese

*Also available via live broadcast to the conference site.

6:00 – 6:30 Buses leave for Conference

7:00 – 9:00 Poster Session II & Reception

Dynamics Days 2010 Schedule

Thursday, January 7th

8:20 – 9:00	Dirk Helbing (Swiss Federal Institute of Technology – Zurich) <i>Cooperation, Norms, and Conflict: Towards Simulating the Foundations of Society</i>
9:00 – 9:20	Elizabeth Leicht (University of California at Davis) <i>Doing More with Less: Emergence of Large-Scale Connectivity in Networks with Design</i>
9:20 – 9:40	Jan Nagler (Max Planck Institute for Dynamics and Self-Organization) <i>Discontinuous Phase Transitions in Random Network Percolation</i>
9:40 – 10:00	Coffee Break
10:00 – 10:40	Theo Geisel (Max Planck Institute for Dynamics and Self-Organization) <i>Phase Transitions Towards Self-Organized Criticality in Neuronal Systems</i>
10:40 – 11:20	Sara Solla (Northwestern University) <i>Decoding Neural Signals for the Control of Movement</i>
11:20 – 11:40	Wai Shing Lee (University of Maryland at College Park) <i>Dynamics of Spatially Distributed Large Coupled Oscillator Systems</i>
11:40 – 12:00	Erik Bollt (Clarkson University) <i>How Can I Say that a “Toy” Model Reminds Me of Observations? A Dynamical Systems Perspective of Comparing Non-Conjugate Systems</i>
12:00 – 1:50	Lunch (on your own)
1:50 – 2:30	Ulrike Feudel (University of Oldenburg) <i>Coagulation and Fragmentation of Inertial Particles in Chaotic Advection and Random Flows</i>
2:30 – 2:50	Jens C. Zahnow (Carl von Ossietzky University) <i>Fragmentation and Size Distributions of Fractal Aggregates in Fluid Flows</i>
2:50 – 3:30	Jeffrey Rogers (DARPA) <i>Research Funding: A Perspective from the Other Side</i>
3:30 –	Coffee Break
3:30	End of Conference Talks at Hotel
3:30 – 6:30	Heilborn Symposium at Northwestern (Buses leave for Northwestern at 3:30)
3:30 – 4:00	Refreshments
4:00 – 5:00	Jacques Laskar (CNRS Paris Observatory) <i>Is the Solar System Stable?</i>
5:00 – 6:30	Wine & Cheese
6:00 – 6:30	Buses leave for the Conference Hotel

Dynamics Days 2010 Schedule

Friday, January 8th

3:30 – 6:30	Heilborn Symposium at Northwestern
3:30 – 4:00	Refreshments
4:00 – 5:00	Murray Gell-Mann (Santa Fe Institute & Caltech) <i>Simplicity and Complexity</i>
5:00 – 6:30	Wine & Cheese

Session Chairs

January 4, Morning	Adilson E. Motter
January 4, Afternoon	Jerry Gollub
January 5, Morning	Takashi Nishikawa
January 5, Afternoon	Wolfgang Losert
January 6, Morning	Edward Ott
January 6, Afternoon	Charles Finney
January 7, Morning	William L. Kath
January 7, Afternoon	Ned Corron

Poster Committee

Ned Corron
Joern Davidsen
Charles Finney
Juan G. Restrepo

Hotel Wireless Internet Code: 2145