

“Frontiers in statistical physics and complex systems”

Nettuno Hotel, Catania (Italy), 2–5 June 2012

Preliminary program

Saturday, June 2, 2012 (Hotel Nettuno)

16:30 Opening session

Massimo Inguscio (Director of Materials and Devices Department, CNR)

Ruggero Vaglio (Director of SPIN Institute, CNR)

16:50 Eugene Stanley (Boston University)

Nanoscale Dynamics of Phase Flipping in Water near its Hypothesized Liquid–Liquid Critical Point

17:10 Sergey Buldyrev (Yeshiva University)

Widom line in a Liquid–Liquid phase transition

17:30 Marcia Barbosa (Universidade Federal do Rio Grande do Sul, Porto Alegre)

Diffusion anomaly in confined water

17:50 Francesco Mallamace (University of Messina)

$T=315\text{K}$ – a magic temperature for water

18:10 coffee break

18:40 Giancarlo Franzese (University of Barcelona)

Cooperative rearranging regions in water at biological and inorganic interfaces

19:00 Francesco Guerra (University of Roma “La Sapienza”)

Spontaneous replica symmetry breaking in spin glasses and neural networks

Sunday, June 3, 2012

Session at the Benedictine Library

9:00 Giorgio Parisi (University of Roma “La Sapienza”, CNR)

Dynamical heterogeneities in glasses

9:20 Hernan Makse (City College of New York)

Statistical mechanics of random packings: From Kepler and Bernal to Edwards and Coniglio

9:40 Luca Peliti (University of Napoli “Federico II”)

Life dissipation and Landauer's principle

10:00 Angelo Vulpiani (University of Roma “La Sapienza”)

On anomalous diffusion and the out of equilibrium response function in one-dimensional models

10:20 Santo Fortunato (Aalto University)

Universality of citation distributions: towards an objective measure of scientific impact

10:40 Marco Saitta (Université Pierre et Marie Curie)

Ab initio molecular dynamics study of dissociation of water under an electric field

11:00 coffee break

11:30 Luciano Pietronero (University of Roma “La Sapienza”, CNR)

A new metric for the economic complexity of countries and products

11:50 Rosario Mantegna (University of Palermo)

Statistically validated networks in social and economic systems

12:10 Attilio Stella (University of Padova)

Scaling approach to market dynamics: from aftercrashes to trading strategies

12:30 Janos Kertesz (Budapest University of Technology and Economics)

Human behavior from info-communication data

12:50 Andrea Rapisarda (University of Catania)

The beneficial role of random strategies in Sociophysics models

Trip to Siracusa

Social dinner

[Monday, June 4, 2012](#)

Session at the [University of Catania](#)

9:00 Opening session

9:10 Silvio Franz (LPTMS, Université Orsay)
From Glassy Liquids to Field Theory and Back

9:30 Emanuela Del Gado (ETH Zürich)
Heterogeneous glasses and sustainable cement

9:50 Dino Leporini (University of Pisa)
Elasticity and relaxation in glass-forming systems

10:10 George Hentschel (Emory University)
Plasticity in Magnetoelastic Amorphous Solids

10:30 Marco Tarzia (LPTMC, Paris Jussieu)
Chaos and ergodicity in disordered quantum systems

10:50 Mauro Sellitto (Second University of Napoli)
Fluctuation relation in driven systems with glassy dynamics

11:10 coffee break

11:40 Bernard Sapoval (Ecole Polytechnique, CNRS)
Faster Diffusion from Irregular Surfaces

12:00 Alberto Robledo (Universidad Nacional Autonoma de Mexico)
A complex network perspective of chaos

12:20 William Klein (Boston University)
A New Paradigm for Gutenberg–Richter Scaling

12:40 Alberto Petri (CNR, Roma)
Stochastic approach to chaotic stick slip in sheared granular media

Lunch

14:00–15:00 Poster session

15:00 Shlomo Havlin (Bar-Ilan University)
Percolation of network of networks

15:20 Hans Herrmann (ETH Zürich)
Watershed Percolation

15:40 José Soares Andrade (Universidade Federal do Ceará, Fortaleza)
Fracturing highly disordered materials

16:00 Nuno Araújo (ETH Zürich)
Explosive Percolation

16:20 Tommaso Aste (University of Kent)
Hierarchical information clustering by means of topologically embedded graphs

16:40 coffee break

17:10 Fereydoon Family (Emory University)
Statistical Physics of Age Related Macular Degeneration

17:30 Anita Metha (Satyendra Nath Bose National Centre)
Competing synapses with two timescales: a basis for learning and forgetting

17:50 Plamen Ivanov (Boston University and Harvard Medical School)
Physiologic Complexity and Network Physiology

18:10 Andrea Gamba (Politecnico di Torino)
Geometry, topology, and out-of-equilibrium dynamics in epithelial morphogenesis

18:30 Denis Grebenkov (Ecole Polytechnique)
Surveying Anomalous Diffusion in Living Cells

18:50 Ruggero Cortini (Imperial College)
The homologous pairing enigma and the hidden abilities of the DNA

double helix

Tuesday, June 5, 2012 (Hotel Nettuno)

9:00 Francesco Sciortino (University of Roma “La Sapienza”)

Phase diagrams of patchy colloids

9:20 Kenneth Dawson (University College Dublin)

TBA

9:40 Maria Antonietta Ricci (University Roma Tre)

Isotopic effect on the ageing dynamics of a charged colloidal system

10:00 Francois Leyvraz (UNAM Cuernavaca)

Scaling theory of gelling systems: recent results

10:20 Jeferson Arenzon (Universidade Federal do Rio Grande do Sul, Porto Alegre)

Domain growth morphology in two-dimensional coarsening

10:40 coffee break

11:10 Leticia Cugliandolo (LPTHE, Paris Jussieu)

Frustrated magnetism: the spin-ice samples

11:30 Marco Zannetti (University of Salerno)

Growth Law and Superuniversality in Disordered Ferromagnets

11:50 Federico Corberi (University of Salerno)

Coarsening: surfing on the edge

12:10 Jorge Kurchan (ESPCI, Paris)

TBA

12:30 Closing session