



TÜBİTAK



**FEZA GÜRSEY INSTITUTE-IMPERIAL COLLEGE
INTERNATIONAL
SUMMER SCHOOL AND RESEARCH WORKSHOP
ON COMPLEXITY
ISTANBUL 5-10 SEPTEMBER 2011**

Imperial College
London**Time Scheduled**

Arrival Sunday 4 Sep. Departure Sunday 11 Sep 2011

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Morning 9-12	Brief Intro. Jensen + Tirnakli	Evans Networks	Pruessner, Christensen, Evans, Jensen Rounding off lectures	Research workshop (I)	Research workshop (III)	Research workshop (V) Short contributed talks
	Pruessner Master eq. etc.					
Afternoon 14-17	Christensen Scaling & power laws	Jensen Dynamics	Excursion along the Bosphorus and visit to Istanbul	Research workshop (II)	Research workshop (IV)	Presentations from group work
Discussion Groups 17-18	Group work on thematic topics	Group work on thematic topics		Group work on thematic topics	Group work on thematic topics	G Baris Bagci: The science of complexity: a philosophical assessment
Evening Lecture 20-21	Evans Netplexity – the complexity of interactions in the real world	Pruessner Any answers? Self Organised Criticality in the third decade after BTW	Conference dinner in Istanbul	Public Lecture Geoffrey West Santa Fe Inst <i>Size matters ...</i>	Christensen Ant Colonies as Complex Systems.	Jensen Analysis of Music Performance

See below for titles of talks

Introductory lectures

Gunnar Pruessner: Master, Fokker-Planck and Langevin equations. A tool box for analysing complex systems.

Kim Christensen: Scaling and power laws. A critical discussion of how to analyse power laws by e.g. finite size scaling and their relevance to complex systems.

Tim Evans: Network theory with particular focus on analysis of social networks

Henrik Jeldtoft Jensen: An introduction to typical types of dynamics found in complex systems: Stationary power law distributed avalanche dynamics, non-stationary logarithmically slow relaxational dynamics and stationary equilibrium like fluctuations.

Invited seminars

G Baris Bagci: Second law for non-equilibrium steady states in open systems.

A Nihat Berker: Robustness, Beauty, and Fragility in the Random Scale-Free World: Apollonius Tulips and Critical Percolation Phases.

Alkan Kabakcioglu: Influence of the helical structure in DNA denaturation.

Mustafa Keskin: Correlation, hierarchies, and networks of the main Turkish companies

Anastasios Malakis: Monte Carlo methods for the study of disordered systems.

Muhittin Mungan: Statistical Mechanics and Statistical Inference Methods on Graphs.

Ugur Tirnakli: Appearance of q-Gaussians in low- and high-dimensional dynamical systems.

Cemal Yalabik: Renormalization Group studies of some Non-equilibrium Systems.

Public Lecture: Geoffrey West, Santa Fe Institute.

Size matters; the Complexity, Simplicity, and Unity of Life from Cells & Ecosystems to Cities & Corporations

Research seminars

Thursday morning 9-12 (I) Biology -> Stat Mech

40min Geoffrey West: Damage and Repair; Sleep, Aging, Mortality and Nucleotide Substitution Rates

5min break

40min Alkan Kabakcioglu: Influence of the helical structure in DNA denaturation.

5min break

20min Aslı Tuncer: The Modelling of T-cell Differentiation: Renormalisation- Group Solution

30min break

40min G Baris Bagci: Second law for non-equilibrium steady states in open systems.

Thursday afternoon 14-17 (II) Stat Mech A

40min A Nihat Berker: Robustness, Beauty, and Fragility in the Random Scale-Free World: Apollonius Tulips and Critical Percolation Phases.

5min break

40min Anostasios Malakis: Monte Carlo methods for the study of disordered systems.

30min break

40min Ugur Tirnakli: Appearance of q-Gaussians in low- and high-dimensional dynamical systems.

5min break

20min Meesoon Ha: Q-Coloring Problems in Complex Networks.

Friday morning 9-12 (III) Stat Mech B

40min Cemal Yalabik: Renormalization Group studies of some Non-equilibrium Systems.

5min break

20min Jin Min Kim: A fractional Langevin equation and conserved noise restricted-solid-on-solid model on fractal substrates.

5min break

20min Yasa Ekşioğlu, Özgür E. Müstecaplıoğlu, Kaan Güven: The coupled optical soliton and surface plasmon system with reminiscent features of Josephson junction dynamics.

30min break

20min Huynh Hoai Nguyen: Abelian Manna model on various lattices of different dimensions before mean-field.

40min Muhittin Mungan: Statistical Mechanics and Statistical Inference Methods on Graphs.

Friday afternoon 14-17 (IV) Sociology

40min Mustafa Keskin: Correlation, hierarchies, and networks of the main Turkish companies.

5min break

20min Ciprian Andrei Tais: General analysis of the economy behind DDoS attacks.

5min break

20min Emil Gegov: Evolution of the United States airport network over the past twenty years.

30min break

20min Hyejin Youn, Pan-Jun Kim, Seung-Woo Son, Hawoong Jeong: Effective Density: a Psychographic Variable from Demographic Data.

5min break

20min Ozge Dilaver Kalkan: Lack of Scarcity and Missing Markets for Waste Resources.

Saturday morning 9-12 (V) Biology and geophysics

20min Tomas Alarcon: Stochastic multi-scale modelling of tumour growth

5min break

20min Joseph Robert Burger: Human macroecology and sustainability

5min break

20min Anna Deluca: Universality of rain event size distributions

Posters

Ozge Erdem and Fatihcan M. Atay: Patterns of Synchrony in Complex Oscillator Networks with Time Delays.

Marina Diakonova: Mutual Information in the Standard Map

Haleh Abadi: Exit time approach in heart rate variability