



The Abdus Salam
International Centre for Theoretical Physics



Summer School on
**Design and Control of
Self-Organization in Physical, Chemical
and Biological Systems**

25 July - 5 August 2005
Miramare - Trieste

Director(s): Alexander S. Mikhailov, Kenneth Showalter
Local Organizer: Hilda Cerdeira

FINAL PROGRAMME

26 July 2005

SHORT TALKS BY PARTICIPANTS

Venue: Adriatico Guest House Kastler Lecture Hall

Monday, 25 July

15:00 - 18:00 Chairperson: Irving R. Epstein

15:00 - 15:30 M. O. Caceres
"Functional approach to solve delay and memory-like Langevin equations"

15:30 - 16:00 D. Horvath
"Migration-driven front instability"

16:00 - 16:30 Break

16:30 - 17:00 Y. Togashi
"Molecular discreteness can alter and control enzymatic reaction systems"

17:00 - 17:30 L. D. P. Rongy
"Fronts dynamics resulting from the coupling between autocatalytic chemical reactions and hydrodynamic Marangoni instabilities"

17:30 - 18:00 D. Tanaka
"Amplitude equations of Nikolaevskii turbulence"

Tuesday, 26 July

15:00 - 18:00 Chairperson: Anne De Wit

15:00 - 15:30 T. Nakagaki
"Design of flow network by an amoeba"

15:30 - 16:00 A. I. Mikaberidze
"Defect-deformational self-organization of coherent ensemble of adatom nanoparticles"

16:00 - 16:30 Break

16:30 - 17:00 K. M. Zan
"Controlling diffusion coefficient"

17:00 - 17:30 A. Knezevic
"(Multi)fractality in heartbeat dynamics"

17:30 - 18:00 R. M. A. Pineda
"Stochastic simulation of CO oxidation on a nanoscale Pt surface"

Wednesday, 27 July

15:00 - 18:00 Chairperson: Leon Glass

- 15:00 - 15:30 S. Nakanishi
"Formation of micro- and nano-ordered structures by self-organization in oscillatory electrodeposition"
- 15:30 - 16:00 A. Fingerle
"The Kolmogorov-Sinai entropy of wet granular gas"
- 16:00 - 16:30 Break
- 16:30 - 17:00 J. E. Fiscina
"Fermi-like behavior of weakly excited granular matter"
- 17:00 - 17:30 K. Nagai
"Mode selection in the spontaneous motion of an alcohol droplet"
- 17:30 - 18:00 P. Balenzuela
"A neural mechanism for binaural pitch perception via ghost stochastic resonance"

Thursday, 28 July

15:00 - 18:00 Chairperson: Qi Ouyang

- 15:00 - 15:30 Á. Tóth
"Density fingering in the chlorite-tetrathionate reaction"
- 15:30 - 16:00 H. Kitahata
"Spontaneous motion caused by interfacial instability"
- 16:00 - 16:30 Break
- 16:30 - 17:00 S. Camargo
"Controlling non-hyperbolic chaotic scattering"
- 17:00 - 17:30 O. Alvarez
"Phase-ordering in chaotic-map networks with delayed interactions"
- 17:30 - 18:00 V. Zaburdaev
"Clustering in one-dimensional granular gas"

Monday, 1 August

15:00 - 18:00 Chairperson: Rajarshi Roy

- 15:00 - 15:30 M. G. Cosenza
"Analogy between external forcing and global coupling in spatiotemporal systems"
- 15:30 - 16:00 H. Kori
"Entrainment of complex oscillator networks"
- 16:00 - 16:30 Break
- 16:30 - 17:00 Ben Hadj Rhouma
"Self-organization of biological oscillators applied in data mining and vision"
- 17:00 - 17:30 E. A. Zhuchkova
"Analysis of excitable media dynamics via phase singularities"
- 17:30 - 18:00 P. Siega
"Supramolecules from self-organization by design and by selection between cobaloximes and boronic acids"

Tuesday, 2 August

15:00 - 18:00 Chairperson: Ronald Imbihl

- 15:00 - 15:30 J. Gorecki
"On chemical programming"
- 15:30 - 16:00 O. Rudzick
"Trapping of waves and twisted spirals in oscillatory media under periodic forcing"
- 16:00 - 16:30 Break
- 16:30 - 17:00 K. Ito
"Collective behaviors of repulsively coupled oscillators"

Wednesday, 3 August

11:30 - 12:30 Chairperson: Rene Lefever

11:30 - 12:00 R. Weinkamer
"Control of trabecular bone remodeling"

12:00 - 12:30 S. Alonso
"Control of unstable filaments in 3D excitable media"

Thursday, 4 August

11:30 - 12:30 Chairperson: John L. Hudson

11:30 - 12:00 M. Alber
"Stochastic model of aggregation in myxobacteria"

12:00 - 12:30 O.-U. Kheowan
"Spiral wave dynamics under feedback control derived from a variety of sensory domains"

15:00 - 18:00 Chairperson: Kenichi Yoshikawa

15:00 - 15:30 A. C. Marti
"Chaos-induced coherence: an example in two independent food chains"

15:30 - 16:00 T. Yanagita
"Spatiotemporal behavior and bifurcations of coupled excitable elements"

16:00 - 16:30 Break

16:30 - 17:00 P. Kaluza
"Engineering of functional networks"

17:00 - 17:30 Y. Sumino
"Regular motion of a self-running oil droplet"

17:30 - 18:00 H. Seyed-Allaei
"TBA"

Friday, 5 August

11:30 - 12:30 Chairperson: Frank Moss

11:30 - 12:00 P. Parmananda
"Noise-induced resonance in chemical systems"

12:00 - 12:30 M. Iima
"Flight mechanism of a two-dimensional symmetric flapping model"