

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

25 July - 5 August, 2005

Miramare-Trieste, Italy

The focus of this meeting will be on the interdisciplinary research field of designing and controlling self-organization in complex systems.

The theoretical understanding of physical, chemical and biological dynamics opens a way for the purposeful manipulation and control of complex systems, and offers opportunities for the design of new systems with desired properties. Designing and controlling self-organizing systems cannot be based on traditional principles, as the application of rigid controls typically interferes destructively with the interactions of a system that are responsible for its self-organization. Instead, the spontaneous activity of a self-organizing system should be steered in a desired direction by applying weak control impulses and imposing various feedbacks. In this way, transitions between different organization states can be initiated and new forms of collective behavior can be achieved.

The list of speakers reflects the main theme of the school: developing new ways to manipulate self-organization in physical, chemical and biological systems.

The Summer School will consist of 10 full working days separated by a weekend break. The activities will centre on tutorial lectures as well as talks on recent research. There will also be contributed talks and time in the programme for formal and informal discussions. Participants who would like to present a short talk are expected to communicate the title and a short abstract with the application form.

Scientists and students from all countries that are members of the United Nations, UNESCO or IAEA may attend the School. Although the main purpose of the ICTP is to help researchers from developing nations through a programme of training activities within a framework of international cooperation, students and post-doctoral scientists from developed countries are also welcome to attend. The School will be conducted in English.

As a rule, travel and subsistence expenses of the participants should be covered by their home institutions. However, limited funds are available for some participants who are nationals of, and working in, a developing country and who are not more than 45 years old, to be selected by the Organizers. Travel expenses will be granted only in exceptional cases. Every effort should be made by candidates to secure support for their fare (or at least half-fare) from their home country. It is stressed that participants whose travel expenses are paid by ICTP are required to attend the entire course. There is no registration fee for attending the School.

Application forms for the School can be found on the Web server of ICTP at:

<http://www.ictp.it/> (Activities Calendar: Agenda, 2005),

-or-

<http://agenda.ictp.trieste.it/agenda/current/fullAgenda.php?ida=a04201>

Please complete and sign the application form and send it by mail before **1 February 2005** to:

Summer School on
Design and Control of
Self-Organization in Physical, Chemical, and Biological Systems
(c/o Elizabeth Brancaccio)
the Abdus Salam International Centre for Theoretical Physics
Strada Costiera 11
34014 Trieste, Italy

If sending an application by e-mail: smr1668@ictp.trieste.it (please save and send file attachments in RTF or PDF format)

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ICTP Home Page: <http://www.ictp.it/>

the
abdus salam
international
centre
for theoretical
physics



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LOCAL ORGANIZER:

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(the Abdus Salam ICTP Trieste, Italy)

LIST OF SPEAKERS

Uri Alon (Israel)

Eberhard Bodenschatz (Germany)

Patrick De Kepper (France)

Anne De Wit (Belgium)

Irving R. Epstein (USA)

Gerhard Ertl (Germany)

Leon Glass (Canada)

Celso Grebogi (Brazil)

John L. Hudson (USA)

Ronald Imbuhl (Germany)

Kunihiko Kaneko (Japan)

Raymond Kapral (Canada)

Yoshiki Kuramoto (Japan)

René Lefever (Belgium)

Frank Moss (USA)

Yasumasa Nishiura (Japan)

Qi Ouyang (China)

Antonio Politi (Italy)

Jacques Prost (France)

Rajarshi Roy (USA)

Lutz Schimansky-Geier (Germany)

Steven K. Scott (UK)

Preben G. Sørensen (Denmark)

DEADLINE:

1 FEBRUARY 2005