



The Abdus Salam

International Centre for Theoretical Physics

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IAEA
International Atomic Energy Agency

Spring College on the Physics of Complex Systems

21 May – 19 June 2015

(Miramare - Trieste, Italy)

The Abdus Salam ICTP and SISSA, in collaboration with the partner institutions of the Master in the Physics of Complex Systems (<http://www.polito.it/pcs>) will organize the *Spring College on the Physics of Complex Systems* from 21 May to 19 June 2015.

Many complex systems in physics, biology, engineering and economics are characterized by a large number of interacting degrees of freedom giving rise to a non-trivial collective behavior. The theoretical and computational tools for a quantitative analysis of complex systems are often rooted in modern (statistical, quantum) physics. The Spring College on the Physics of Complex Systems aims to give students the opportunity to get in touch with a selection of topics at the forefront of research, during an intensive 4-week program. It consists of 5 courses of 9 lectures each, followed by final written tests.

Courses and Lecturers

- ✚ Arezki Boudaoud (ENS Lyon, France)
Morphogenesis: from physical to biological systems
- ✚ Fabrizio Lillo (Scuola Normale Superiore, Pisa, Italy)
Statistical methods for quantitative finance
- ✚ Satya N. Majumdar (Université de Paris-Sud, France)
Introduction to random matrix theory and its applications
- ✚ Alessandro Treves (SISSA, Italy)
Evolution of neuronal computation
- ✚ Riccardo Zecchina (Politecnico di Torino, Italy) & Florent Krzakala (ENS Paris, France)
Statistical inference, Optimization and Machine Learning

Participation

The Spring College is part of the Master program in the Physics of Complex Systems, but it is open to a limited participation of well-qualified students at the Master and PhD level. Applicants from all countries that are members of the United Nations, UNESCO or IAEA may attend. As the College will be conducted in English, participants should have an adequate working knowledge of this language. Candidates are warmly advised to solicit recommendation letters to be sent by their supervisors in support of their application.

As a rule, travel and subsistence expenses of the participants should be borne by their home institutions. 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. Yet every effort should be made by candidates to secure support for their travel fare (or at least half-fare). Attendance of lectures and completion of the final written tests is mandatory for those granted ICTP funding. There is no registration fee.

HOW TO APPLY FOR PARTICIPATION

The Online Application can be accessed at the activity website: <http://indico.ictp.it/event/a14244/>. Comprehensive instructions will guide you step-by-step on how to fill out and submit the application form. Kindly send all file attachments in Word or Acrobat format.

Secretariat:

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Organizing Committee

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DEADLINE

28 February 2015