



Pseudochaos and Stable-Chaos in Statistical Mechanics and Quantum Physics

21 - 25 September 2009

Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics (ICTP), Trieste, Italy, is organizing an **international Workshop on Pseudochaos and Stable-Chaos in Statistical Mechanics and Quantum Physics**, to be held in Trieste from 21 to 25 September 2009.

The main goal of this Workshop is surveying the relevance of pseudochaos for various research domains in mathematics and physics. By pseudochaos it is usually meant the irregular behavior characterizing the unpredictable evolution of dynamical systems in the absence of the Lyapunov instability mechanism. Far from being a mere mathematical curiosity, pseudochaos has appeared in an astonishingly wide range of models, including spatially extended systems (e.g., coupled map lattices), finite and infinite polygonal billiards, cellular automata, neural networks etc. The many progresses made in the understanding of pseudochaos have unveiled its importance for the foundations of Statistical Mechanics (validity of transport equations, role of ergodicity), for the crossover from discrete to continuous descriptions, and even for the semi-classical limit of quantum mechanics.

In the last decade an increasing community of researchers had to deal with pseudochaos while trying to tackle problems in basic science as well as in applications and experiments. Actually, beyond its conceptual interest, pseudochaos provides an effective tool for analyzing and understanding many practical problems like transport in nanosystems, neural synchronization and plasticity, cryptography and adaptive computational procedures.

This is the main reason why the Workshop aims also at collecting scientists from different research areas sharing a common interest for pseudochaos and its applications.

A series of lectures will provide an introduction to the **main topics** of the Workshop:

- **Normal and anomalous transport**
- **Non chaotic and weakly chaotic classical and quantum dynamical systems**
- **Stable chaos, disturbance propagation, synchronization**
- **Ballistic, diffusive and directed transport in quantum systems**
- **Measures of complexity for classical and quantum non chaotic systems**

PARTICIPATION

Scientists from all countries that are members of the UN, UNESCO or IAEA can attend the Workshop. The Organizers will select participants upon evaluation of the application forms and of the lists of recent publications. The main purpose of the Centre is to help researchers from developing countries within the framework of international cooperation. However, scientists from developed countries are most welcome to attend. As the Workshop will be conducted in English, participants must have an adequate working knowledge of that language.

As a rule, travel and subsistence expenses of the participants are borne by their home institutions. Limited funds are available for a limited number of applicants who are nationals of, and working in, developing countries. As scarcity of funds allows travel to be granted only in a few exceptional cases, every effort should be made by candidates to secure support for their fare from their home country. Such financial support is available only to those attending the entire Workshop. There is no registration fee to attend this activity.

How to apply for participation: candidates can access the **Online Application Form** through the activity webpage: <http://agenda.ictp.it/smr.php?2058>. Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit online the application **within 20 April 2009**. Kindly send any file attachments in Word or PDF format.

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DEADLINE

20 April 2009