

## **8th Workshop on Non-Linear Dynamics and Earthquake Prediction**

*The Abdus Salam International Centre for Theoretical Physics  
Miramare - Trieste, Italy, 3-15 October 2005*

The Abdus Salam International Centre for Theoretical Physics, in collaboration with the Department of Earth Sciences of the University of Trieste, will organize the Eighth Workshop on Non-Linear Dynamics and Earthquake Prediction from 3 - 15 October 2005. The IUGG Commission on Geophysical Risk and Sustainability and the IASPEI Commission on Earthquake Hazard, Risks and Strong Motion endorse the Workshop.

The Workshop is dedicated to training in advanced methodologies of R&D in fundamental studies of the Earth's evolution and dynamics, of the instability of the Earth lithosphere, and in numerous applied problems, such as earthquake prediction, estimation and mitigation of possible seismic hazard, etc. Among the main goals of the Workshop is facilitating the link between theoretical and experimental workers, adequately explaining new achievements in seismology to the wide audience of scientists and engineers, and giving a unified treatment of those methods of seismology that are currently used in interpreting actual data. Among practical aspects, large attention will be given to the accuracy and statistical significance of prediction methods, their rate of errors, and to the interaction with disaster management authorities. Lectures by most distinguished leaders in different disciplines will focus both on methodology and results of interpretation of seismic observations.

The main topics of the Workshop programme will include:

- Lithosphere as a non-linear dissipative system: Chaos and self-organisation in non-linear dissipative systems. Symptoms of instability. Scaling, self similarity, fractality.
- Numerical models of seismicity: lattice-type ("universal") models and models of lithosphere block-and-fault dynamics. Geometric incompatibility in blocks-and-faults systems. Physical background of major regularities in earthquake occurrence, as inferred from synthetic and real earthquake sequences.
- Pattern recognition: Exploratory data analysis. Algorithms. Software. Numerical tests.
- Earthquake prediction: Premonitory phenomena in models and reality. Integration of data on different fields. New approaches to short-term earthquake prediction. Algorithms of prediction. Evaluation of reliability of prediction methods, error diagrams.
- Seismic risk estimation. Interaction with practical decision-making.

### For more information:

Eighth Workshop on Non-Linear Dynamics and Earthquake Prediction  
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