The Abdus Salam International Centre for Theoretical Physics

IAEA International Atomic Energy Agency

unesco United Nations Educational, Scientific and Cultural Organization

ICTP 1964–2024

Workshop on the Structure and Influence of the Earth's Lithospheric System

Description:

Variations in the structure of the lithosphere, the thermal boundary layer forming the Earth's outermost "rigid" shell (the plates) which behave elastically on geological time scales, are related to first-order features of the Earth's tectonics and evolution. The base of the lithosphere (the lithosphere-asthenosphere boundary or LAB) does not conform to a distinct interface but to the depth at which heat transport changes from advection in the convecting deeper upper mantle to conduction in the shallower upper mantle. Although the LAB constitutes an active fundamental feature of the Earth, mapping it has been difficult because the base of the plates does not correspond to a sharp change in temperature, composition or seismic velocity and deformation at the base of the plates does not involve earthquakes. In addition to the LAB, there are a number of distinct interfaces within the lithosphere (e.g., the Mohorovičić discontinuity, mid-lithospheric discontinuities).

This workshop will focus on the structure and significance of the lithosphere system. It will inform, motivate and provide its participants with the state-of-the-art knowledge and current challenges in understanding the lithosphere system by highlighting the most important areas where significant progress has been recently achieved. The workshop will cover the full range of observational, theoretical and technical capabilities currently available to the scientific community.

The workshop programme will involve a series of lectures, seminars, discussions, and computer exercises combining analytical and numerical modeling with seismic, geologic, geodetic, gravity and laboratory observations in order to better understand the structure of the lithosphere system and its control on the Earth's tectonics and evolution.

LECTURERS:

F. CAMMARANO, Universita' Roma Tre, Italy
A. COPLEY, University of Cambridge, UK
H. FORD, University of California, USA
J. FULLEA URCHULUTEGUI, Universidad Complutense de Madrid, Spain
S. KEATING, ETH, Switzerland
S. LAMB, Victoria University of Wellington, New Zealand
M. MOORKAMP, Technische Universität Berlin, Germany
Z. SUDHOLZ, University of Cambridge, UK

7 - 18 October 2024

Trieste, Italy

Applications and Deadlines:

28 July 2024
for applicants requesting financial and/or visa support

18 August 2024
for all other applicants

LOCAL ORGANISERS:

K. PRIESTLEY, University of Cambridge, UK/ ICTP, Italy
A. AOUDIA, ICTP, Italy

FURTHER INFORMATION:

E-mail: smr3971@ictp.it

Web: https://indico.ictp.it/event/10509/

Female scientists are encouraged to apply

GRANTS:

A limited number of grants are available to support the attendance of selected participants, with priority given to PhD students and early career scientists from developing countries and working on the Earth lithosphere.
There is no registration fee.