



The doctorate in Earth Sciences  
of the Doctoral School in Natural Sciences and Innovative Technologies  
of the University of Torino organizes

PhD short course on

## Convergent margins and subduction zones: deformation processes at the plate interface

Torino (Italy), November 12-14, 2012



The courses will be held by  
**Prof. Mark CLOOS**  
(University of Texas, USA)

followed by thematic seminars by

**Dott. Laura Federico** (Università di Genova)  
**Dott. Cristina Malatesta** (Università di Genova)  
**Prof. Anna Maria Marotta** (Università di Milano)  
**Dott. Francesca Meneghini** (Università di Pisa)  
**Prof. Gian Andrea Pini** (Università di Bologna)  
**Prof. Maria Iole Spalla** (Università di Milano)

### Organizing Committee:

Andrea Festa (Università di Torino)  
Francesca Remitti (Università di Modena e Reggio Emilia)  
Fernando Camara Artigas (Università di Torino - Earth Sciences doctorate coordinator)

Informations: [andrea.festa@unito.it](mailto:andrea.festa@unito.it)



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of the Doctoral School of Natural Sciences and Innovative Technologies  
of the University of Torino (Italy) organizes

PhD Short Course on

## "Convergent Margins and Subduction Zones: deformation processes at the plate interface"

Torino (Italy), November 12-14, 2012

The course and following thematic seminars are targeted to the description and comprehension of deformational mechanisms acting at diverse scale and at different structural levels in convergent margins and subduction zones.

Prof. Mark CLOOS will present a detailed and complete overview on subduction zone studies. Starting from an historical perspectives, the modern perspectives on accretionary and non-accretionary margins, the characteristics and evolution of subduction complexes will be described from both field studies (with a focus on the Franciscan Complex), DSDP/ODP drilling projects (e.g., IZU, Japan, Guatemala, Izu-Bonin-Mariana, Lesser Antilles, Nankai), and geophysical data analyses (e.g., subduction zone seismicity, near-trench deformation imaged in seismic reflection profiles). Fundamental processes (e.g., subduction accretion - erosion, sediment subduction), static vs dynamic tectonic models (e.g., Coulomb wedges and decollement, subduction channel shear zone), and thermal evolution of a subduction zone will be described and discussed in detail. The last part of the course will be devoted to the investigation on arc-backarc tectonics, subduction initiation and cessation, and subduction magmatism. An open discussion with participants will be encouraged.

With the aim of increasing involvement on the course, participants are invited to freely decide if present briefly their research.

### TITLE OF THEMATIC SEMINARS:

#### Francesca MENEGHINI

Accretionary processes in the geologic record: structural diversity through space and time in the Franciscan Complex (California), Kodiak Complex (Alaska) and Internal Ligurian Units (Italy)

#### Gian Andrea PINI

Mass-transport processes: shallow deformation and mixing of rocks at convergent margins

#### Anna Maria MAROTTA

Integrated use of numerical analysis, geological and geophysical data to give new insights on the mechanisms acting at convergent margins: geodynamic modeling - from present to past

#### Maria Iole SPALLA

Integrated use of numerical analysis, geological and geophysical data to give new insights on the mechanisms acting at convergent margins: the 2 fossil subduction systems in the Alpine chain

#### Laura FEDERICO and Cristina MALATESTA

Subduction-exhumation cycle of metaophiolitic rocks: a case study in the Ligurian Western Alps

### IMPORTANT INFORMATIONS:

- Deadline for application: October 30th, 2012
- Participation fee: 30 Euros
- The number of participants is limited to #30
- Location of the course:  
Dipartimento di Scienze della Terra  
Università di Torino  
Via Valperga Cusio, 35  
10125 - TORINO (Italy)

### APPLICATION:

Send an email titled  
"PhD short course" to  
**Andrea Festa**  
([andrea.festa@unito.it](mailto:andrea.festa@unito.it))

You will receive the  
"Application form" and  
the "Detailed Program"