



Deep Continental Drilling into the Moho (DCD Moho) in the Ivrea-Verbano Zone

An International Continental Scientific Drilling Program (ICDP) Workshop

Baveno, Lago Maggiore, Italy, 1st-5th May 2017

The Moho transition zone is one of the major boundaries of the Earth's interior, being the geophysical divide between crust and mantle, and a major geochemical interface processing fluids and melts. An ICDP-funded workshop will discuss the science plan, drilling strategy and funding options for a to-be-proposed multinational drilling initiative into the continental Moho transition zone, which would explore the physical and chemical properties along various transects. Such drill-cores, paired with matching geophysical and instrumental data, hold the keys to understand the complex nature of the continental Moho transition zone and the rates and nature of processes shaping this fundamental boundary. The Ivrea-Verbano Zone (IVZ), Southern Alps, Italy, is one of the rare places with exposures of Earth's lower continental crust and upper mantle and a fascinating natural laboratory for Earth and life scientists interested in deep crustal and upper mantle processes. It is a world-famous archive of continental magmatism documenting crustal processes of magma emplacement, crustal assimilation, and volcanism during a protracted time in the Permian, as well as a potential site for unravelling extreme microbial niches in the Earth's interior.

We announce an ICDP-sponsored workshop in Baveno (Italy) in the period 1st-5th May 2017. The workshop is aimed at developing a strategic plan for drilling into the continental crust-mantle transition in the IVZ. The following scientific objectives will guide the workshop discussion:

- What is the architecture of the lower continental crust and Moho transition zone?
- Which role do magmatism and tectonics play in the construction of the continental crust?
- How can we link rock chemistry, mineralogy and texture to seismic wave velocities to improve existing geophysical models at high spatial resolution (< 1 km scale)?
- What is the production and flux of heat and fluids in the continental Moho transition zone?
- How deep can life be in the Earth's interior?

The agenda of the workshop will include plenary and working-group discussions, covering aspects of drilling targets, in-situ investigations, core analysis, scientific collaborations as well as operations, logistics, funding and permitting. The workshop will include a 1-day field excursion to key localities in the IVZ.

Scientists wishing to contribute to this workshop are invited to submit an application with contact details and a 1-page summary of their relevant expertise and intended contribution to Othmar Müntener, Mattia Pistone, and Luca Ziberna (othmar.muntener@unil.ch) prior to **1 Feb 2017**. The workshop will be limited to a maximum of 50 participants. Scientists will be invited by the organizing committee on the basis of the relevance of their research to the goals of the workshop and the need for balanced representation of countries and disciplines. Preference will

be given to scientists from ICDP member countries or countries with interests in joining ICDP, and to scientists whose expertise complements that of existing project participants. Full or partial travel support will be available.