

## REPORT ON THE ICDP WORKSHOP *DOVE* "DRILLING OVERDEEPEINED ALPINE VALLEYS" (COMO AND VALTELLINA, 3-5 APRIL 2013)

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**ABSTRACT:** Here I provide a short report on the ICDP-funded Workshop *DOVE* (*Drilling Overdeepened Alpine Valleys*), held in Como and Valtellina between 3-5 April 2013. Discussion, led by the Project Principal Investigators, aimed at defining the scientific issues and the financial budget of a multinational drilling initiative in and across the Alps.

**Keywords:** ICDP, *DOVE*, overdeepened alpine valleys.

On 3-4 April 2013 the ICDP Workshop *DOVE* "Drilling Overdeepened Alpine Valleys" was held in the scenic Villa del Grumello, on the south-western shore of Lake Como (northern Italy). ICDP is the acronym for the International Continental Scientific Drilling Program; it is a transnational program based at the GFZ - German Research Centre for Geosciences, aiming at promoting, funding and coordinating continental scientific drillings with relevant scientific objectives of global significance

(Fig. 1). ICDP supports researches focused on climate dynamics and global environment, life history, natural resources and a wide range of geologically-relevant topics like active faults and earthquakes, volcanoes, hot spots, plate collision and impact structures. Project proposals may be submitted to ICDP once a year by scientists from member and non-member countries looking for logistical and financial support to continental drillings.

The *DOVE* workshop (Fig. 2), funded by ICDP,



Fig. 1 - Drilling operations at Lake Ohrid (Macedonia, Albania) in the framework of the ICDP-funded project SCOPSCO "Scientific Collaboration on Past Speciation Conditions in Ohrid" (photo [www.icdp-online.org](http://www.icdp-online.org)).

joined experts in drilling and core-logging techniques, geochronology, geophysics, glacier modelling, natural hazards and nuclear waste, sedimentology, stratigraphy and structural geology to define the scientific and economic agenda of a multinational drilling initiative across the Alpine Chain.

The *DOVE* project aims at exploring nature, geometry and age of sedimentary successions filling over-deepened alpine valleys, to answer to key questions related to rates and processes shaping alpine landscapes and their forelands. Special attention will be paid to the effects of multiple glaciations on mountain areas, to reconstruct their timing and extent and decipher regional differences, and to the history of biodiversity and the impact of glaciations on original ecosystems of the Alps. The potential of the study areas for ground-water and geothermal resources and as nuclear waste and gas disposal sites will be carefully evaluated.

The meeting, organized by CNR - IDPA Milano, was attended by 46 professors, researchers, PhD students and professionals representing 9 European nations (Austria, Denmark, Germany, France, Italy, Slovenia, Sweden, Switzerland, The Netherlands) and USA (Fig. 3). The workshop opened with a note by Dr. Ulrich Harms, ICDP Executive Secretary, describing ICDP organization, activities, funding strategies and criteria for project selection and evaluation. Criteria applied for evaluation are the project's global significance, the pooling of resources and technologies by a broad scientific international team, the societal relevance of the problem, the necessity for drilling and the balance of costs and drilling design.

The workshop scientific activity developed through

two days of plenary sessions and working groups discussions focusing on pre-site surveys, methods, goals, active and future collaborations and potential drilling sites in Austria, Germany, Italy, Slovenia, Switzerland. Drilling techniques will be carefully evaluated, given the expected core lengths (up to several hundred meters, from the ground level possibly down to bedrock) and the need to have sufficient amounts of sediment for several destructive analysis (and therefore smaller core diameters should be avoided).

On April 5 workshop participants were involved in a one-day fieldtrip to a potential drilling site in the nearby over-deepened Valtellina area. Despite adverse weather conditions preventing any clear view from the panoramic point towards the valley floor, participants were offered a comprehensive sketch on geological investigations carried out in recent years in this area by Regione Lombardia and CNR-IDPA, consisting of two long cores (Teglio and Sondalo) drilled in the frame of the new geological map of Lombardy and seismic profiles. The excursion ended with the visit to the local drilling company storing the 208 m-long Teglio core observing, describing and discussing sediment features and their meaning.

The workshop participants agreed to endorse the effort of submitting a full proposal for the *DOVE* project to ICDP by January 2014. A group of Principal Investigators, namely Prof. Flavio Anselmetti (Univ. of Bern), Dr. Milos Bavec (Geological Survey of Slovenia), Dr. Gerald Gabriel (Leibnitz Institute for Applied Geophysics in Hannover), Prof. Frank Preusser (Univ. of Stockholm), Dr. Cesare Ravazzi (Consiglio Nazionale delle Ricerche Milano) and Dr. Jürgen Reitner (Geological Survey of Austria), will be in charge of it. The success of

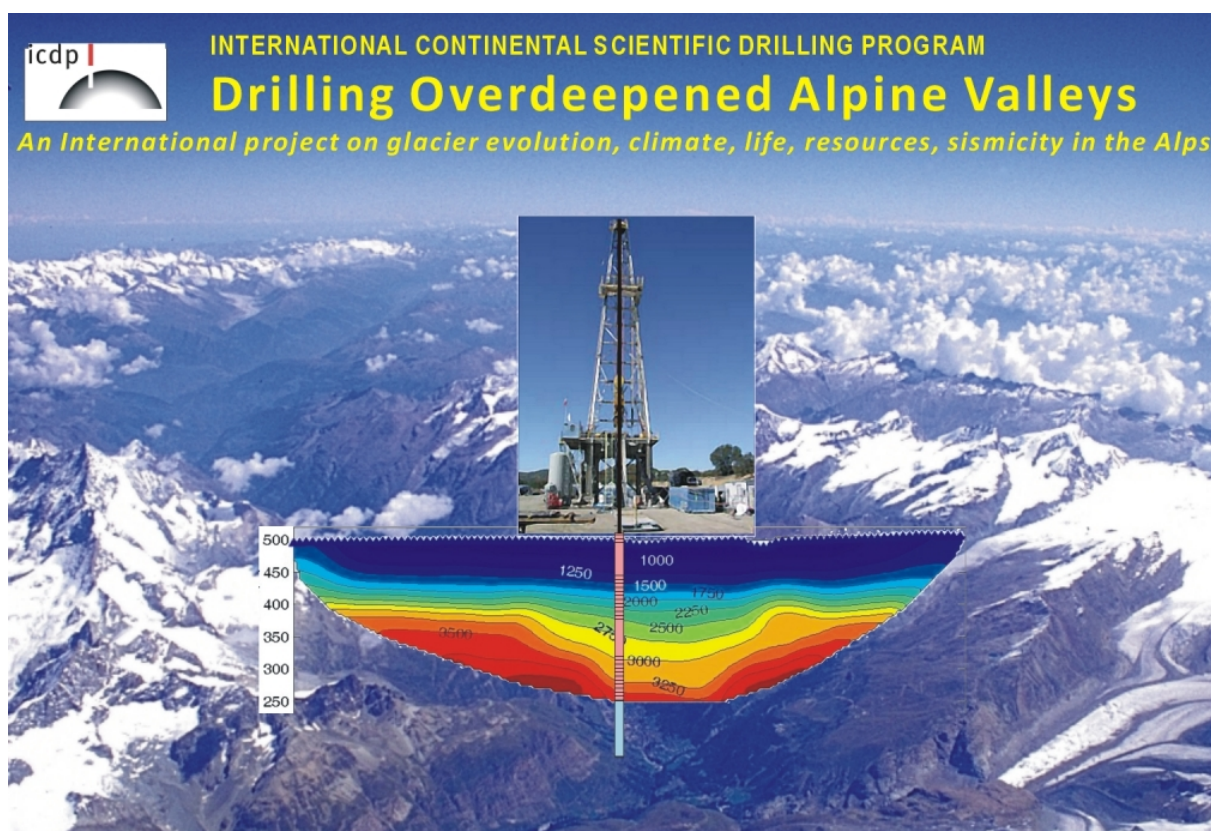


Fig. 2 - The logo of the ICDP - *DOVE* project (design by C. Ravazzi, CNR-IDPA Milano).



Fig. 3 - Group photo of the participants to the ICDP *DOVE* Workshop (photo courtesy Markus Fiebig).

the project relies on the interest and support by research agencies, Universities, local and regional administrations, industry groups. Indeed, in case of positive evaluation, ICDP funds will be granted for project and drilling development, while applicants are asked to raise additional resources to fully cover drilling costs, facilities, scientific data production and management.

More informations on ICDP and its activity can be found at [www.icdp-online.org](http://www.icdp-online.org).

Those interested in joining the *DOVE* adventure, promoting deep drillings and sharing their social and scientific outcomes, can contact Dr. Cesare Ravazzi at CNR - IDPA ([cesare.ravazzi@idpa.cnr.it](mailto:cesare.ravazzi@idpa.cnr.it)).

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