



Lake Van Drilling Project ‘PaleoVan’ (ICDP): A long continental sedimentary record in Eastern Anatolia of the last ca 400.000 years. Scientific drilling operation in 2010 and first results

Thomas Litt (1), Flavio Anselmetti (2), Namik Cagatay (3), Rolf Kipfer (2), Sebastian Krastel-Gudegast (4), and Sefer Örcen (5)

(1) Steinmann Institute of Geology, Mineralogy and Paleontology, University of Bonn, Germany (t.litt@uni-bonn.de / 0049 228 733509), (2) Eawag, Swiss Federal Institute of Aquatic Science and Technology, Switzerland, (3) Eastern Mediterranean Centre for Oceanography and Limnology, Istanbul Technical University, Istanbul, Turkey, (4) Leibniz Institute of Marine Sciences (IFM-GEOMAR), Kiel, Germany, (5) Department of Geology, University of Yüzüncü Yil, Van, Turkey

Lake Van is the fourth largest terminal lake in the world (volume 607 km³, area 3,570 km², maximum depth 460 m), extending for 130 km WSW-ENE on the Eastern Anatolian High Plateau, Turkey. Within the sensitive climate region of north-eastern Anatolia, the Lake Van record, partly laminated, represents an excellent continental climate archive between the Black Sea, the Arabian Sea and the Red Sea that covers several glacial-interglacial cycles. Therefore, Lake Van is a key site within the International Continental Scientific Drilling Program (ICDP) for the investigation of the Quaternary climate evolution in the Near East. The ICDP drilling operation was carried out from July 2 to August 23, 2010. DOSECC, as operator of the deep drilling, has built the new Deep Lake Drilling System (DLDS), which was specifically designed for sampling sediments from deep lakes and which made its maiden voyage on Lake Van. The DSDL was operated at water depths of up to 360 m. Two sites were drilled and cores of 140 m (Northern Basin) and 220 m (Ahlat Ridge) depth were retrieved. The sediments of the very bottom document the initial phase of the lake formation, which was characterized by fresh water conditions. We collected a total recovered sediment core length of over 800 m, which allow an unprecedented look back in time at the scale of at least three glacial-interglacial cycles. Several meter thick tephra layers originating from volcanoes surrounding the lake were also recovered, allowing reconstructions of larger volcanic events and related environmental impacts. Furthermore, they offer through tephrochronology and radiogenic-isotope analyses the means to date the stratigraphic section beyond the range of radiocarbon. We will be able to present the first results of this campaign during the INQUA congress. This contribution is co-authored by the entire ‘PaleoVan’ scientific drilling party.