Geophysical Research Abstracts
Vol. 14, EGU2012-7625, 2012
EGU General Assembly 2012

60 ka lacustrine record from Lake Banyoles (NE-Spain): Environmental change with respect to human occupation

N. Höbig (1), M.E. Weber (2), M. Kehl (3), G.-C. Weniger (4), R. Juliá (5), M. Melles (2), R.-H. Fülöp (2), H. Vogel (6), and K. Reicherter (1)

(1) Institute of Neotectonics & Natural Hazards, RWTH Aachen University, Aachen, Germany (n.hoebig@nug.rwth-aachen.de), (2) Institute of Geology and Mineralogy, University of Cologne, Cologne, Germany, (3) Institute of Geography, University of Cologne, Cologne, Germany, (4) Neanderthal Museum, Mettmann, Germany, (5) Institut de Ciències de la Terra (Jaume Almera), Barcelona, Spain, (6) Institute of Ecology and Environmental Science, University of Umeå, Umeå, Sweden

This study presents a new Last Glacial to Holocene paleolimnological record from NE-Spain. The new paleoenvironmental dataset shows great capability for further matching of this off-site archive with archaeological data from nearby on-site archives (e.g., Cova de l'Arbreda, Abric Romani). The karstic Lake Banyoles is surrounded by various archeological sites, which show evidences for human occupation since the Middle Pleistocene.
We investigated a 67-m long sediment core from Lake Banyoles, which was drilled on the eastern shore in few meters distance to present-day lakeshore. The study reveals evidence for the paleoclimate history of the northern Iberian Peninsula using high-resolution and non-destructive sediment-physical, geochemical, and optical methods to generate proxies indicative for sedimentologic variability and paleoclimate change. Primary stratigraphic control is based on 14C and U-series dates of organic and inorganic material, as well as tephra from the Late Pleistocene Olot volcanic episode.
Accordingly, the preliminary ages obtained for the core base date back to approximately 60 ka, the Last Glacial Maximum (23–19 ka) interval ends at 15 m, and the top 8 m represent the Holocene. Within the core section ten main facies have been identified, which include several s¬lump events. We found evidence for paleoclimate change in element ratios, which we interpret to represent effects of Heinrich Events H0–H5. For Heinrich Events a lowering in temperature and humidity has to be assumed for the western Mediterranean (according to Combourieu-Nebout, 2002), which may have affected human occupation during the Palaeolithic-Neolithic period. Implications on human occupation in northern Spain due to climate changes are discussed from archeological findings and cave sediments in neighboring areas. The authors give first considerations with respect to the paleolimnologic data of Lake Banyoles.