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The " ANOVAN " Project : Palaeoenvironments, palaeogeography, volcanic events and human societies in the Van lake basin -eastern Turkey- during Upper Pleistocene and Holocene

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The ANOVAN project (ECLIPSE II and PICS of the CNRS, TÜBITAK (Ankara), the French Embassy in Ankara), aims at reconstructing the evolution of environment in the region of Lake Van (Eastern Anatolia), a reference-site for the climatic evolution of the Middle East and the Caucasus during the Pleistocene and the Holocene. The project is based on the study of the terrace deposits outcropping around the lake, which record high magnitude lake level variations (up to $>$ 100 m above today's lake level ; cf. Christol et al., this meeting). Sedimentation environments recorded in these deposits is complex, with thick formations, erosion phases leading to embedding, and tectonic deformations. The 24-20 kyrs BP 14C age of lake deposits at + 40-45 m indicate that the lowest terraces are contemporaneous to the varves studied in deep cores (PaleO-van ICBP Program). The sedimentologic, stratigraphic and geomorphologic study of the terraces and their deposits performed in the frame of the ANOVAN project, evidences several transgression cycles during Upper Pleistocene. OSL, U-Th and ESR dates in process should contribute to the dating of these cycles. In parallel, ash falls

and volcanic flows identified in stratigraphic relationships with the lake deposits (interstratification, embedding, coverageĚ) are correlated with in situ ignimbrites emitted by the sub-active volcanic systems located on the northern shore of the lake (Mouralis et al., 2008).

Results awaited from the ANOVAN project thus concern:

a) The palaeohydrology, palaeoclimatology and palaeoenvironments of the region, on the basis of the interpretation of the past lake deposits forming terraces (mapping, characterization, stratigraphy, altitudes, dating):

b) The various steps of the palaeogeography of the area indicated by the extansion and contraction phases of the lake. Our preliminary results question the role of:

- volcanic dams formed by flows emitted by the Nemrut volcano in initiating some transgressions which may then not respond to climatic changes; furthermore, some volcanic dams may have recently modified the watershed, leading to captures, isolation of depressions and changes in the Tigris upper basin.

- rock nature in the distribution and conservation of the sedimentary archives ;

- tectonics, especially in the Van city area where we have been able to measure recent uplifts.