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Long continental pollen record of the last ca. 500 ka in eastern Anatolia – First palynological results from Lake Van cores obtained in 2010

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Lake Van is located in a climatically sensitive semiarid and tectonically active region in Eastern Anatolia, Turkey. It is a key site to reconstruct terrestrial paleoecology and paleoclimate in the Near East during the Quaternary. Lake Van is the largest soda lake (surface area 3.570 km^2) and the fourth largest terminal lake in the world (volume 607 km3). The maximum water depth is 460 m and the maximum length is 130 km WSW-ENE. The present lake level is at an elevation of 1,646 m above mean sea level. The northern and eastern part of Lake Van is mainly characterized by steppe vegetation related to the so-called Irano-Turanian plant geographical territory. In contrast, some remnants of deciduous oak forests can be observed mainly in the Bitlis Massive, SW of the lake. We present preliminary palynological results of a long continental sedimentary record obtained during a coring campaign supported by the International Continental Scientific Drilling Program (ICDP) in summer 2010. The composite profile from the Ahlat Ridge, the most important site for paleoclimatological studies (total length of ca. 218 m), yields a continuous paleoclimate archive encompassing ca. 500.000 years. The record is partly characterized by annually laminated sediments. By using pollen analysis, several glacial and interglacial/ interstadial periods can be observed. The warm stages can be identified based on higher amounts of pollen from thermophilous trees such as deciduous oak. In addition to the current interglacial stage (MIS 1), pronounced warm phases coincide with past interglacials probably correlative to MIS 5, 7, 9 and 11 or 13. Cold stages are characterized by pollen types related to steppe plants such as Artemisia, chenopods and grasses. The glacial-interglacial cycles as reflected in the palynological data are in broad agreement with those of stable oxygen isotope analyses based on autigenic carbonate of the lacustrine sediments (bulk). Caused by the state of the art, more detailed information will be given to the last 130,000 years.