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Abstract
ICDP - Lo stato delle proposte di perforazione per l'area del Mediterraneo

Scientific Collaboration of Past Speciation conditions in Lake Ohrid (SCOPSCO): A high-resolution record of northern Mediterranean climate history back to 1.4 Ma

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Abstract

The SCOPSCO–ICDP project ("Scientific Collaboration on Past Speciation Conditions in Lake Ohrid") aimed at a better understanding of (i) the age and origin of Lake Ohrid (Former Yugoslav Republic of Macedonia/Republic of Albania), (ii) its regional seismotectonic history, (iii) the volcanic activity and climate change in the central northern Mediterranean region, and (iv) the drivers of biodiversity and endemism. Data produced since 2007, as basis for the final ICDP proposal and those produced with core analyses, show that the Ohrid basin formed by transtension during the Miocene, opened during the Pliocene and Pleistocene, and the lake established *de novo* in a relatively narrow valley, progressively opening as tectonic proceeds. The lake history is recorded in a 584 m long sediment sequence from the central part (DEEP site) of the lake in spring 2013. Based on the chronological approach, which was successfully applied for the upper 248 m of the sediment sequence or the last 640 ka and included tephrostratigraphy and tuning biogeochemical proxy data to orbital parameters, we can now extend the age model down to 456 m of the sediment sequence. This part of the sequence comprises the hemi-pelagic sediments and thus the entire history of Lake Ohrid since the establishment of full lacustrine conditions. Below 456 m, shallow water facies and fluviatile sediments dominate. With support of magnetostratigraphic data, showing the Matuyama-Bruhnes boundary and the base of the Jaramillo subchron, the onset of lacustrine conditions in Lake Ohrid can now be defined to almost 1.4 Ma ago. The completeness of the record and a multi-disciplinary study of sediment proxies including biogeochemical, granulometric and micropaleontological data allow a high-resolution reconstruction of the northern Mediterranean climate history over this period continuously. The existing data show that Lake Ohrid and its catchment reflect long-term variability in temperature that mostly correlate to glacial/interglacial changes. Moreover, biogeochemical and pollen data indicate a strong response on changes in humidity on a precessional scale.