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Microfaunal and Climate Variability on a Millennial and Astronomical Time Scale in the Alboran Sea during MIS 7 and 6

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The evolution of the planktonic foraminifera assemblages in sediments from core ODP 977 (36º 01.907´N, 1º 57.319´W), retrieved at a depth of 1984 m in the Alboran Sea (Western Mediterranean Sea) has been studied for reconstructing the paleoceanography changes in this area during the last 250-150 ka (marine isotope stages (MIS) 7 and 6).

This study has been especially focused on the analysis of glacial/interglacial and millennial ciclicities. Abundances of different foraminifer species have been compared with isotopic, biogeochemical and sedimentological data. A very good correlation between foraminifer assemblages and sea surface temperature (SST) estimates based on alkenone insaturation index has been observed. Every single variation recorded in the SSTs correlates with a faunal change on a millennial time scale during the cold periods, although during warmer intervals this correlation is not so good, at least attending to the alkenones SST estimates. Especially cold events have been also defined due to the lack of warm-water species in the sediment.

During MIS 6 and 7, four organic rich layers (ORL) were deposited in this area. A direct comparison with the equivalent sapropels in the Eastern Mediterranean Sea suggests a different origin for the ORL´s in the Western Mediterranean.