



Biostratigraphy of the last 50 kyr in the Contourite Depositional System of the Gulf of Cadiz

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Contourite depositional systems are very common along many continental margins and in deep basins worldwide. They can reach huge lateral and vertical dimensions and have a high stratigraphic, sedimentological, paleoceanographic and paleoclimatological significance.

This study proposes a biostratigraphic framework for the last 50 kyr in the contourite depositional system of the Gulf of Cádiz with a solid and independent age control, and tests the reliability of faunal-based analyses in a bottom current-dominated environment related to high current velocities. The distribution of planktonic foraminifera and pteropods has been studied in twenty-two piston cores of the Holocene and Late Pleistocene age from the Gulf of Cádiz. A detailed correlation between the cores has been made possible by a large radiocarbon and isotopic data set and a high degree of similarity of frequency changes within several species by coiling direction changes of *Globorotalia truncatulinoides* and *Globorotalia hirsuta* and by occurrences of the polar species *Neogloquadrina pachyderma* and *Limacina retroversa*.

Occurrences of these polar species are clearly related to paleoclimatic oscillations and reflect the last six changes in surface water conditions in the Gulf of Cádiz over the last 50 ka (Heinrich Stadials and Younger Dryas).

The *Globorotalia hirsuta* coiling change could be a good indicator for locating the Pleistocene-Holocene boundary in the region but the very low abundances of this species at this boundary make it difficult to apply.

Globorotalia truncatulinoides sinistral events may reflect MOW migration and especially with five periods with its shallowest vertical location over the last 50 ka (Holocene and MIS3).

These surface-to-subsurface biostratigraphical markers have been observed regardless of sedimentation rates and sedimentary environments (contouritic drifts vs slope without bottom current influence). They are thus fully suitable to regional comparisons between areas under and outside of high-velocity bottom currents. They could be especially suited to compare the spatial behaviour of the different branches of the MOW with a high resolution.

Mots-Clés: Biostratigraphy, Foraminifera, Holocene, Younger Dryas, Heinrich stadials, Mediter- ranean Outflow, Gulf of Cadiz

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