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## Benthic foraminiferal assemblages and bottom water evolution off the Portuguese margin since the Middle Pleistocene

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### Abstract

The upper 250 meter-long sediment core of Site U1391 (1085m water depth) retrieved from the Portuguese margin in the Northeast Atlantic Ocean was adopted for the benthic foraminiferal analyses to disclose the variations in Mediterranean Outflow Water (MOW) intensity over the last ~0.9Ma. Benthic foraminifera are abundant at this site and mainly composed of the hyaline forms (80%, such as *Cibicidoides/Cibicides* spp., *Globobulimina* spp., *Bulimina* spp., *Uvigerina* spp., *Melonis* spp., *Sphaeroidina bulloides*, *Hoeglundina elegans*, *Gyroidinoides* spp., *Lenticulina* spp. and *Planulina ariminensis*), while the agglutinated and porcelaneous forms have only 5% and 14.1% on average, respectively.

Down-core variations of the benthic foraminifera show glacial-interglacial contrasts, especially those of *Lenticulina* spp. and *Planulina ariminensis*, which is also supported by the benthic foraminiferal cluster analysis. During the interglacial periods, the fauna are dominated by *Sphaeroidina bulloides*, *Lenticulina* spp., *Planulina ariminensis*, *Dentalina* spp., *Cibicidoides robertsonianus* and the agglutinated taxa, while by *Cibicidoides pachyderma*, *Praeglobobulimina ovata*, *Praeglobobulimina pupoides*, *Bulimina mexicana*, *Uvigerina mediterranea*, *Bolivinita*

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