

Coccolithophore behavior during short-term climate fluctuations over the last deglaciation: evidence from the Alboran Sea, western Mediterranean

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The time interval from the last deglaciation to the beginning of the Holocene is a period marked by well documented, short-term vigorous climatic fluctuations. During this period of time, the Mediterranean Sea was extremely sensitive to these rapid changes. The Alboran Sea (western Mediterranean) in particular is one of the most relevant sites due to its location at the junction of the Atlantic-Mediterranean water mass exchange.

We conducted a high-resolution investigation of the coccolithophore assemblage from Ocean Drilling Program (ODP) Site 976. The site provides an extremely detailed (multi-decadal scale) alkenone-based sea surface temperature (SST) record, and it is also very well chronologically constrained (Martrat *et al.*, 2014).

All these characteristics make the site a perfect candidate for conducting a high-resolution analysis in order to assess how the coccolithophore assemblage was affected by short-term climatic fluctuations across the last termination.

The results, which were integrated with a planktonic foraminiferal assemblage analysis, show a high

sensitivity of the calcareous plankton assemblage in recording stadial/interstadial phases at a hundred-year scale. The rapid shifts in climate sensitive taxa reinforce the hypothesis that the cold stadial that is associated with Heinrich 1 event was not a homogenous period.

A comparison between calcareous plankton distributions and the available pollen-based climate reconstruction (Combourieu Nebout *et al.*, 2009) also was performed. The combined data set improves the understanding of land-sea interactions during a key climate phase.

References

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