



How Coccolithophores can help to identify abrupt climatic changes in the Mediterranean Sea during the latest Pleistocene

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A quantitative analysis of the coccolithophore assemblage carried out both in PRGL-1 and in the Calypso piston core MD992348 (21.5 m long), allow us identify noteworthy changes in sea surface temperature water indicators during glacial intervals. Alternating changes are observed from the bottom-core, dated here at ca. 500 ka, until Holocene, offering an excellent example of high resolution record. Cold peaks are marked by increase in the proportion of large morphotypes of *Emiliania huxleyi* (>5µm) and *Gephyrocapsa muelleri* in the interval from MIS 5 to 1. Radiocarbon dates indicate that some of the most significant peaks have a millennial range, and can be correlated with Heinrich events (HE). The high sedimentation rates observed in most of the studied cores, allow us observed also a secular pattern, overprinted, related with Dansgaard-Oeschger cycles. For the portion corresponding to MIS 12 to 5 these peaks are observed in medium sized *Gephyrocapsa*. Fluctuations in the abundance of *Gephyrocapsa caribbeana* are also noteworthy, but not well understood at the moment. The combined analyses of coccolithophore and planktonic foraminifers permits to produce a sea surface temperature (SST) record in which sharp fluctuations of around 4°C in amplitude have been detected. These abrupt changes in SST are also linked to changes in surface productivity and in the deep and intermediate water dynamics, probably related with variations in the atmospheric pattern (like-NAO oscillations).

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