



Holocene millennial-scale climatic variability in the Sicily Channel (Mediterranean Sea)

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An investigation on a sedimentary record from central Mediterranean Sea has been carried out over the last 12.5 kyr BP, with a mean sampling resolution of about 70 yr. The abundance variations of the calcareous nannofossil species *F. profunda* are interpreted on the basis of the re-location of the nutricline within the photic zone, led by the dynamics of the summer thermocline. The distribution pattern of *F. profunda*, that shows fluctuations between about 10 and 15%, is put in comparison with oceanographic, atmospheric and cosmogenic nuclide proxies. Major events of *F. profunda* abundance decrease, interpreted as shoaling/weakening of the summer thermocline, mark the younger IRD cycles B1-B5 recorded in the subpolar North Atlantic (Bond et al., 1997, 2001), whereas more stability can be inferred to the early Holocene. On the other hand, these episodes well correlate with 1-2°C decreases reported from the southern Tyrrhenian Sea (Sbaffi et al., 2001). Finally, the three main periods of enhanced Northern Hemisphere atmospheric circulation, which have been reported as one of the most important forcing mechanisms for Holocene coolings in previous Mediterranean studies (Rohling et al., 2002), had a substantial impact even in the Sicily Channel.

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