Mediterranean climate variability based on high-resolution sediment cores: EuroMARC project MOCCHA

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We have measured the oxygen and carbon isotope composition of the planktonic foraminifera *G. ruber* from a high-resolution core from the Gallipoli terrace in the Ionian Sea, for the last 2200 years. Exact dating, low bioturbation and the relatively high sedimentation rate at this site permit a high-resolution quantitative palaeoclimate study. The observed variations in oxygen isotope composition of the foraminifera are in agreement with other climate archives and reflect principally changes in Northern Hemisphere temperatures, with additional influences and amplifications imposed by changes in precipitation-to-evaporation ratio and/or in the circulation of surface waters in the Mediterranean. In the Framework of the EUmarc Project MOCCHA (**M**ultidisciplinary study **O**f **C**ontinental/ocean **C**limate dynamics using **H**igh-resolution records from the eastern mediterrane**A**n), we will extend this record with new sediment cores. We will improve it by reconstructing temperature changes with the novel method of "clumped isotope thermometry" (Gosh et al., 2006, Geochim. Cosmochim. Acta, 70, p. 1439). The combination of these two methods will allow salinity changes to be reconstructed with a very high level of accuracy. The temperature-and-salinity reconstructions will also be correlated with organic-matter proxies of temperature and element geochemistry of the foraminiferal shells being determined by the other partners within the MOCCHA project.