

Mediterranean climate and hydrographic variability during the last 2000 years from a high-resolution oxygen isotope record from the Gulf of Taranto

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Continuous marine high-resolution climate records with sufficient time resolution are needed to detect high-frequency variations in paleo-climate. Such records are rare but vital for our understanding of causes and consequences of climate and environmental change at decadal to millennial time scales. In the Framework of the EUMarc Project MOCCHA (Multidisciplinary study Of Continental/ocean Climate dynamics using High-resolution records from the eastern mediterranean), we are carrying out a multi-proxy climate reconstruction from sediment cores collected in the Gulf of Taranto, Southern Italy. Previous studies have shown that this site is characterized by high sedimentation rates and low bioturbation. The presence of cryptic ash layers allows a very precise dating at least for the last 2000 years. We have measured the oxygen and carbon isotope composition of the planktonic foraminifera *G. ruber* from a high-sedimentation rate core from the Gulf of Taranto at 2.5mm resolution for the period covering the last 2000 years, as well as a multicorer covering the last 700 years to determine the reproducibility of the signals at this resolution.

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. Our initial results indicate that this location has a great potential for high-resolution climate reconstructions for the entire Holocene.