



Paleoenvironmental data from benthic foraminifera: Proxies and problems – the case of the Messinian of the Mediterranean

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Benthic foraminifera are among those organisms carrying information about the past environments they were living in. This information is retrieved by determining and quantifying the species present in an assemblage at any one point in time, and/or by measuring geochemical parameters in their calcareous tests; for instance stable C and O isotopes, Sr isotope ratios, Mg/Ca ratios. Parameters that could be obtained by studying benthic foraminifera and be used either as model input, or as a validation of model output should preferentially be quantified. For instance, in order to reconstruct Messinian circulation patterns in the Mediterranean Basin a modeller would require quantitative estimates of water depth, bottom-water oxygen levels, temperature and a number of other parameters that altogether characterize water masses.

In this presentation we will evaluate some particular problems encountered in reconstructing the Mediterranean bottom-water paleoenvironments preceding the Messinian salinity crisis, and speculate on possible ways to circumvent these problems in order to arrive at quantitative reconstructions.