

SEA SURFACE TEMPERATURE AND OCEANIC PRODUCTIVITY VARIATIONS OFF THE IBERIAN MARGIN DURING THE LAST 20.000 YEARS

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The aim of this study is a detailed reconstruction of the sea surface temperature (SST) and oceanic productivity off the Iberian margin during the last 20.000 years. Sediment samples from the Calypso giant piston core MD01-2446 (39°03.36'N, 12°37.44'W; 3547 m water depth) collected on the southeastern slope of the Tore Seamount, about 300 km west of Portugal, were analyzed qualitatively and quantitatively. For the quantitative analysis of the planktonic foraminiferal assemblages, 56 samples were counted in the combination of the >250 µm and 150-250 µm fractions, with the identification of the species according to established taxonomic criteria. The abundance data was then used to calculate the SST and export productivity variations using the SIMMAX transfer function technique. The modern analog data files used for the transfer function are extended versions of the Salgueiro et al. (2010) data files, which combine samples from the Iberian and NW African margins with the North Atlantic surface samples set of the Margo project, resulting in a total of 1066 analogs for SST and 1039 for productivity. The reconstructed SST range from 10 to 21,7 °C and the summer export productivity from 31,5 to 95,2 gC/m²/y. The Holocene is marked by relative warm summer SST of more than 20 °C but can be divided into 3 phases with slightly colder SST before and after a warm period between 7,7 and 3,7 ky BP. This warm period coincided with the lowest export productivity values. Between 13,3 and 12 ky BP, a colder period occurred (min. 10 °C) concurrent with an increase in export productivity values (max. 89,9 gC/m²/y). Trends observed in core MD01-2446 are in general conform with the lower resolution record of D11957P, also located on the Tore Seamount (39°03'N, 12°35'W; Lebreiro et al., 1997). Although the percentages of the polar species *Neogloboquadrina pachyderma* sin. are similar in both periods (about 24%), the cooling during the Younger Dryas was much stronger than during Heinrich stadial 1 (H1). Comparing the data with core sites located closer to the coast such as MD095-2040 (40°34.91N, 9°51.67'W) and MD095-2042 (37°47.99N, 10°9.99'W) we observe that the percentage of *N. pachyderma* sin. for H1 in core MD01-2446 is much lower than at those sites (>80% and >40%, respectively). It seems that a boundary (hydrographic front) existed between site MD01-2446 and the nearshore sites MD095-2040 and MD095-2042 that prevented a stronger cooling at the Tore Seamount. For the Holocene climatic evolution offshore site MD01-2446 is more similar to site MD95-2042 off Sines (SW Portuguese margin).

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