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# Temperature calibration along the NW Iberian margin: multi-proxy approach

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Marine sediments, mainly the ones from coastal upwelling areas, are valuable archives for past reconstructions, including climate changes, global and regional oceanography, and the cycles of biochemical components in the ocean. However, the regional calibrations of the sediment properties ("proxy" data) to the present-day oceanographic and biological conditions are necessary for interpretation of high-resolution sediment-derived information. Many works have contributed directly or indirectly to improving proxy calibrations related to upwelling and nutrient cycling parameters, but there are few studies with a multi-proxy approach for the same region. Along NW Iberian margin, little work has been done regarding with calibration of proxy data. Thus, we lack understanding on (1) how the seasonally variable hydrography affects the various plankton groups and (2) how much of the water column signal is preserved in the sediments and available for paleo-reconstructions. In order to minimize this lack of information from the upper water column temperature point of view, we investigate trace element and stable isotopes from planktonic foraminifera, and alkenone Uk'37 index from a large set of core-top sediment samples from the NW Iberian margin (41.5-42.5ºN; 9-10ºW). Sediment data are compared with present-day water column data (CTD, stable isotopes, satellite measurements) and to "global" calibration data sets of the proxies with sea surface temperature. We explore reconstructing upper water column structure using three species (G. bulloides, N. pachyderma dextral, and G. inflata) with different depth habitats, different seasonal abundances, and linked to specific hydrographic conditions in this region.
Preliminary results show that Mg/Ca and $\delta$18O temperatures of all species are consistent with seasonal temperatures observed in present-day water column data. In addition G. bulloides and N. pachyderma dextral appears with temperatures related with subtropical and subpolar Eastern North Atlantic Central Waters, respectively.