



Holocene records in the southeastern Bay of Biscay: global versus regional climate signals

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Auteur	Mojtahid, Meryem [1], Jorissen, Frans [2], Garcia, Jennifer [3], Schiebel, Ralf [4], Michel, Elisabeth [5], Eynaud, Frédérique [6], Gillet, H. [7], Cremer, Michel [8], Diz, Paula [9], Siccha, Michael [10], Howa, Hélène [11]
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Résumé en anglais	<p>Core KS10b (North East Atlantic, water depth 550 m) was recovered at a location of high sediment deposition including a high-resolution palaeoclimatic record for the southeastern Bay of Biscay (BoB) over the last 9.0 cal ka BP. The effect of global and regional climatic forcing factors (e.g. orbital forcing, North Atlantic Oscillation: NAO) and their subsequent control on water temperature, sea-level, hydrology and continental influence were investigated by studying foraminiferal faunas, sedimentology, and stable isotopes. Results indicate probable episodic incursions of the warm and salty Iberian Poleward Current (IPC) into the BoB by the intermittent presence of the subtropical species <i>Globigerinoides ruber</i>. These incursions seem to be triggered by negative NAO-like conditions. Our data show five main climatic periods, which are in general agreement with literature data on the climatic variability in the North Atlantic and the Iberian Peninsula: The early Holocene (~9.0–7.4 cal ka BP) is characterised by low sea-level, significant downslope transport, eutrophic benthic settings and high surface water productivity. These environmental characteristics are probably due to the general wet and warm climate under a prevailing negative NAO, increasing precipitation and river runoff and favouring the incursion of the IPC into the BoB. The climatic optimum appears between ~7.4 and 6.0 cal ka BP under a generally positive NAO index. In the following (~6.0–3.5 cal ka BP), surface water cooling is matching a steep decline of the Northern Hemisphere summer insolation. Meanwhile, benthic settings are changing progressively towards present day trophic conditions. The time interval from ~3.5 to 1.8 cal ka BP encompasses the Iberian-Roman Humid period characterised by warm and humid conditions, and increasing primary production under a prevailing negative NAO index. The last 1.8 ka were characterised by stable cool conditions, reflecting a change towards a positive NAO state.</p>
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Liens

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