

Last Glacial – Holocene variability of the European Slope Current, NE Atlantic

This study provides a complete overview of the glacial, deglacial and Holocene dynamics of the easternmost portion of the AMOC upper branch, namely the European Slope Current (ESC), through the study of sediment core SU81–44 (Fig. 1). One of the main results is a progressive weakening of the ESC during the Holocene (Fig. 2). We hypothesize a link with a long-term decrease in the density gradient between low and high latitudes that can be attributed to long term changes in insolation and the strength of the subpolar gyre dynamics.

Fig.1. Location of the study core (purple star) and the main currents in the Bay of Biscay

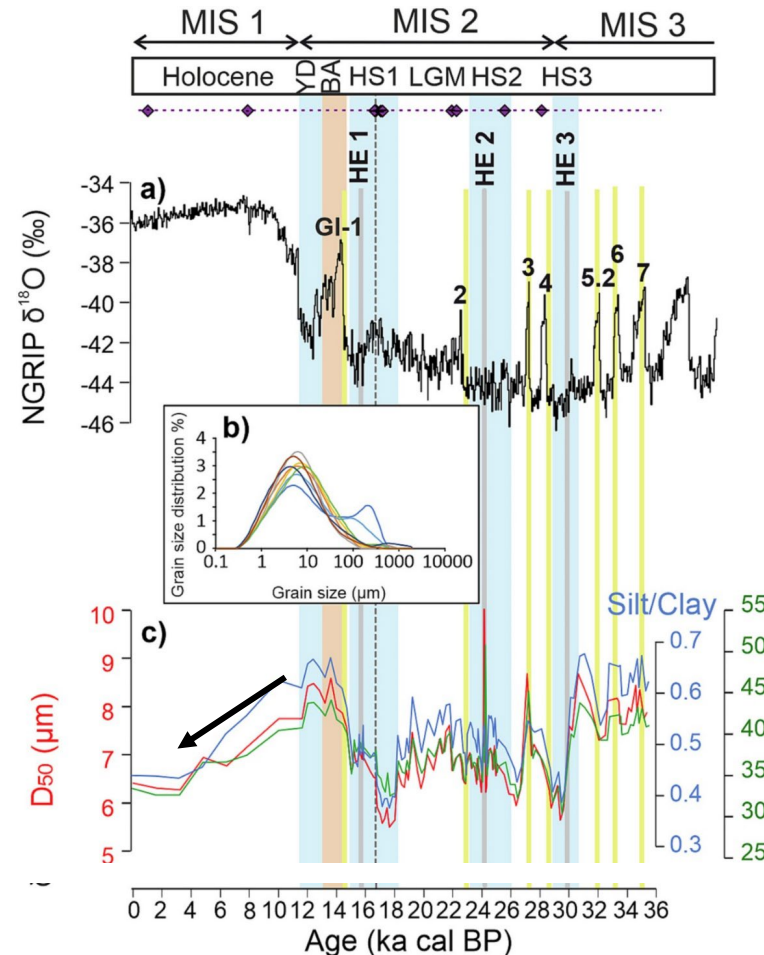
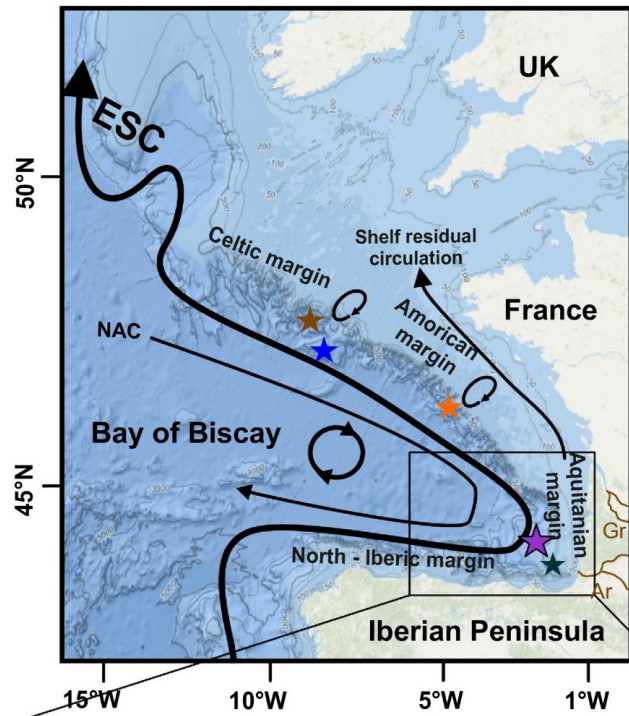


Fig. 2. a) NGRIP $\delta^{18}\text{O}$. b) the most representative grain size distribution of our core. c) Median grain-size record (red line), silt/clay ratio (blue line) and UP10 (green line) as proxies for the reconstruction of GEBC flow speed changes (Frigola et al., 2007). Greenland Interstadials (GI); grey bands: Heinrich Events (HEs); blue bands: Heinrich Stadial (HSs); orange band: Bølling-Allerød (BA); Marine Isotope Stage (MIS). Purple diamonds indicate ^{14}C ages. The black arrow indicates the weakening of the ESC.