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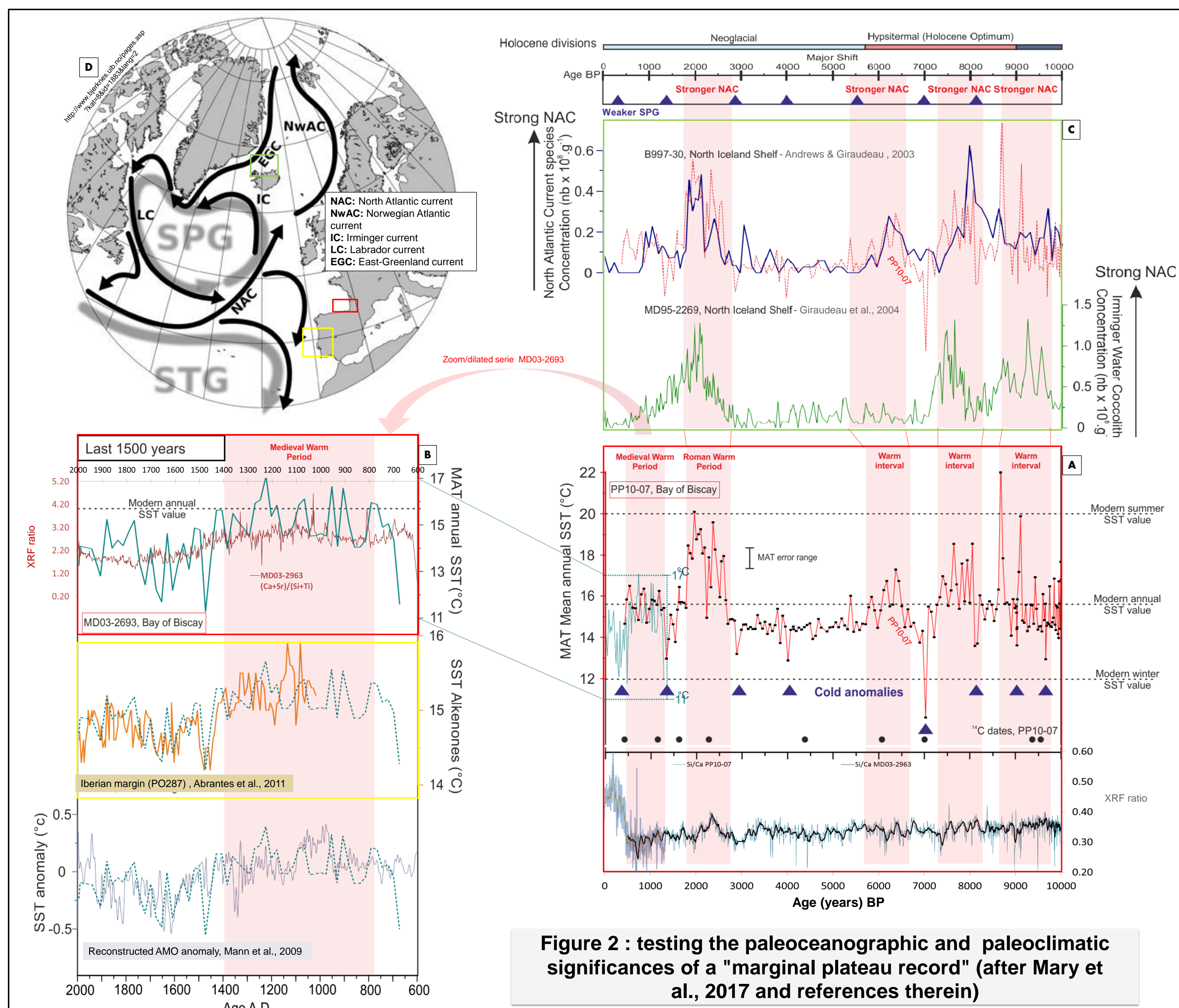
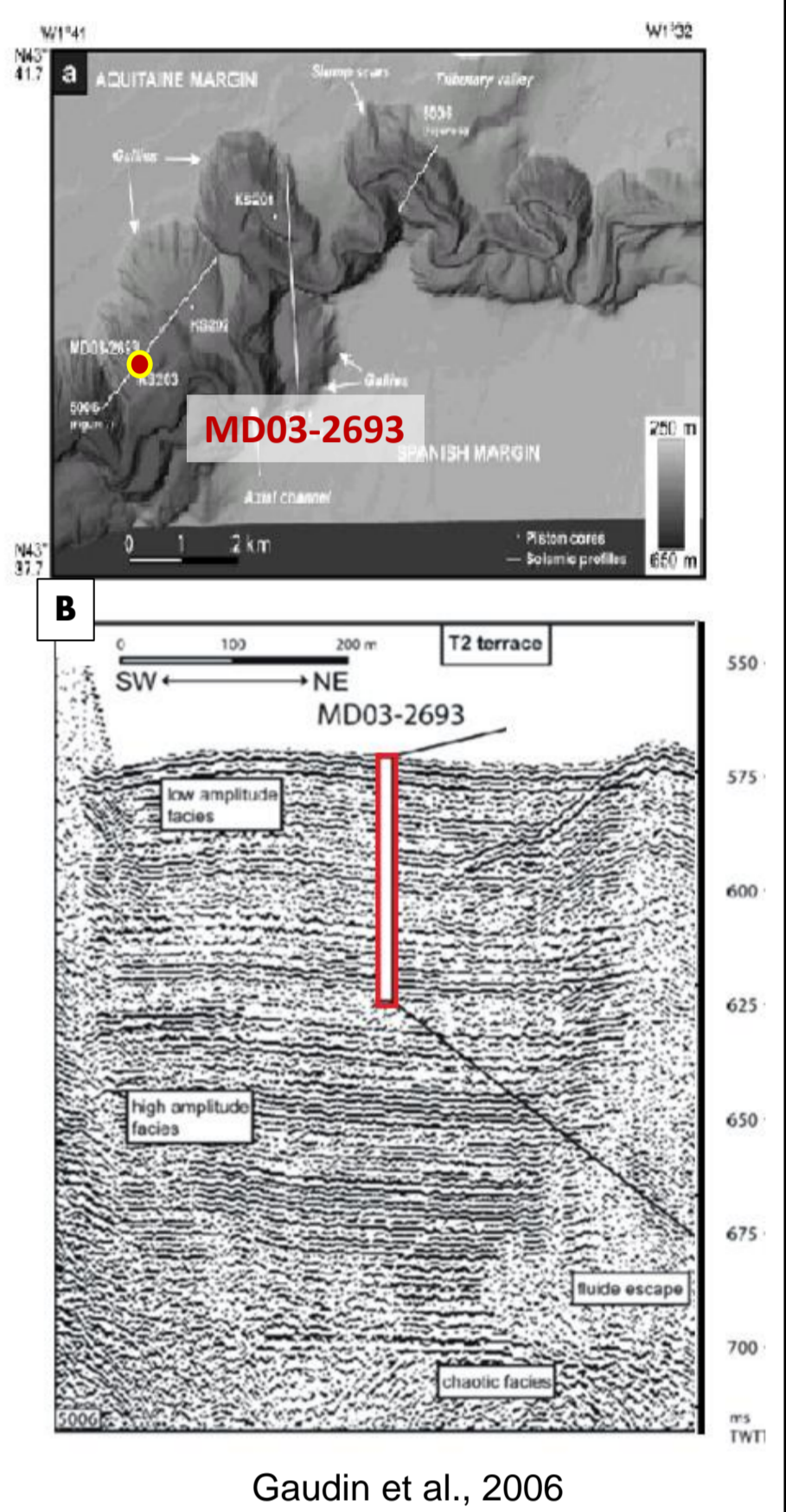
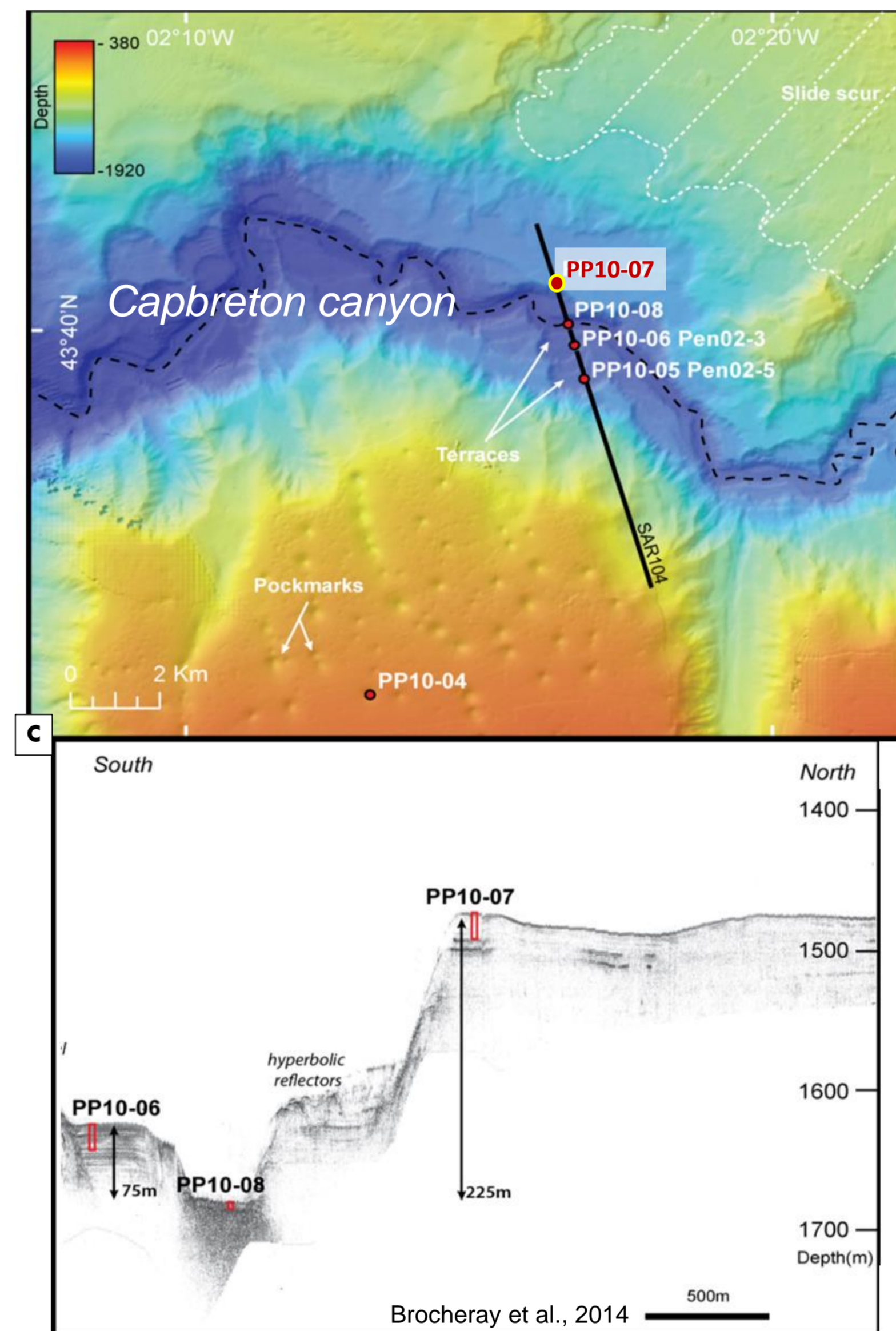
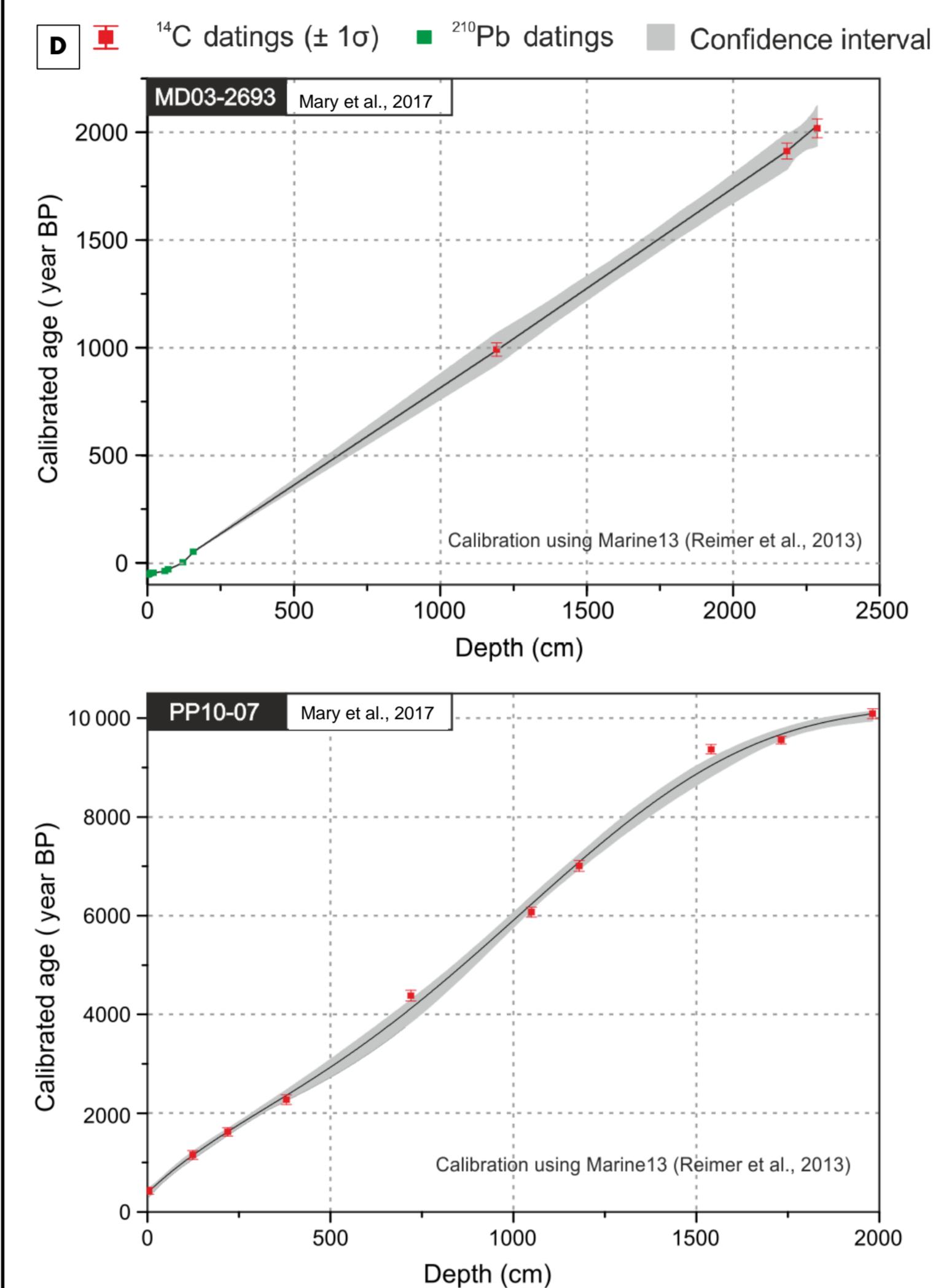
- ANR HAMOC project : Holocene North Atlantic Gyres and Mediterranean Overturning dynamic through Climate Changes  
see <http://hamoc-interne.epoc.u-bordeaux1.fr/doku.php?id=start>

This study is based on two giant Calypso cores retrieved from the northern flank of the Capbreton Canyon (Fig.1A; MD03-2693-Fig.1B and PP10-07-Fig.1C) which separates the Landes plateau from the Cantabrian margin. Radiocarbon datings obtained on these cores have revealed exceptional time-resolved series (sedimentation rates of respectively 1.2 cm/yr and 0.2 cm/yr over the last 10 ka, Fig.1D) which provide the opportunity to test the decadal (and possibly infradecadal) significance of paleoceanographical approaches in marginal plateau sedimentary contexts.

**Past Holocene sea-surface temperatures (SST data) were reconstructed** (after an ecological transfer function based on the modern analogue technique applied to planktonic foraminiferal assemblages, i.e. MAT 1007) **and compared to a selection of North Atlantic Holocene records** using a data mining exercise done in the frame of the French ANR HAMOC (Mary et al., 2015; 2017, Fig 2.A,B, C). Such a comparison reveals striking similitudes in the detection of centennial-scaled warm (/cold) episodes thus reflecting characteristic climatic patterns, at least expressed regionally over the eastern North Atlantic but also probably more broadly. **It suggests the existence of hemispherical teleconnections probably dynamically promoted by the sub-polar / SPG and sub-tropical/ STG gyres (Fig.2D) critical components of the Atlantic Meridional Overturning Circulation – AMOC** which directly imprinted the sedimentation despite local forcings mostly related to structural and mass deposit processes.

**Figure 1: physiographic and stratigraphic contexts of the studied cores**

Cruise, Core label	Latitude °N	Longitude °E	Water depth (m)	Longitudinal distance (km) from the shore	References, Datasources
SARGASS, PP10-07	43.677	-2.228	1472	58	Bourrillet & Turon, 2003; Brocheray et al., 2014, Mary et al., 2017
SEDICAR/PICABIA, MD03-2693	43.654	-1.663	431	15	Gaudin et al., 2007, Mary et al., 2015, 2017



**Figure 2 : testing the paleoceanographic and paleoclimatic significances of a "marginal plateau record" (after Mary et al., 2017 and references therein)**

Detected SST oscillations are synchronous of changes in the lithogeny of the sediments (as deduced from XRF analyses, see Fig.2A and Fig.2B) and argue for a climatic dominant control on the sedimentation which can affect both the nature of the marine deposits combined to switches in outputs from regional fluvial distributaries and their drainage patterns.

**Our results demonstrate that the sedimentary contexts of marginal plateau are not only providing spectacular cases of study for the structural and petroleum geology investigations, but could also be the place to look for ultra-high resolved paleoceanographic records. Such records could help to bridge the gap between climate modellers and paleoceanographers, whose interactions are often limited by different time-scaled representation of the physical processes at play.**

#### Citations:

Mary, Y., et al., 2017. Changes in Holocene meridional circulation and poleward Atlantic flow: the Bay of Biscay as a nodal point, Clim. Past, 13, 201-216, <https://doi.org/10.5194/cp-13-201-2017>.  
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Brocheray, S., et al., 2014. 2000 years of frequent turbidite activity in the Capbreton Canyon (Bay of Biscay). Marine Geology 347, 136-152.  
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Gaudin M, et al. 2006. Past and present sedimentation activity in the Capbreton Canyon, southern Bay of Biscay. Geo-Marine Letters 26: 331-345.