

## A geochemical approach to contourites deposits: examples from Antarctic margin and Gulf of Cadiz (IODP Exp. 318 and 339).

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Contourites cover large parts of all oceanic basins and adjacent continental margins worldwide [1]. Although they can yield excellent paleoclimatic records because of the high sedimentation rates [2], most contourite deposits represent a continuum with other deep-sea sedimentary facies such as turbidites and hemipelagites. Good criteria to differentiate these facies are still sought. This study aims to understand different proxy signals using a geochemical approach for bottom current sediments from Antarctic and Iberian margins.

Comparison between hemipelagic and contouritic deposits in Iberian margin indicates that grain sorting in contourites concentrates heavy minerals (e.g., Zr and Ba) and reworked levels of bioclastic carbonates (Ca and Sr) [3]. Br content variations on the other hand are virtually identical among pelagic and contouritic sediments and do not appear to be sensitive to grain size variations. Planctonic isotopic values and radiocarbon dates confirm Br correlation between pelagic and contouritic sites during late Pleistocene and could be related with the correlation between Br and organic matter content [4]. The East Antarctic levee depositional settings represent a mixed system due to the interaction between turbiditic flows and bottom currents [5]. Differences in oxygenation among the downslope density currents and bottom waters and heavy mineral proxies have been explored in order to discern turbiditic/contouritic deposits.

- [1] Rebesco *et al.* (2014) *Mar. Geol.*, **352**, 111-154.  
 [2] Hernandez-Molina *et al.*, *Science*, **344**, 1244. [3] Bahr *et al.*, (2014) *Geochem. Geophys. Geosyst.*, **15**, 3145-3160. [4] Ziegler *et al.*, (2008) *Geochem. Geophys. Geosyst.*, **9**, Q05009. [5] Escutia *et al.*, (2003) *Deep Sea Res II*, **50**, 1481-1508.