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Sedimentary dynamics off Cape Ghir margin (Morocco). Clues from magnetic and geochemical properties

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Recently, geochemical properties of sediments deposited off Cape Ghir (Morocco) provided a detailed record of the upwelling activity during the last millennium (McGregor *et al.*, 2007). Based on these promising results, the newly designed drill-rig MeBO has retrieved two pushed-cores at the same location as cores GeoB6007 and GeoB6008 (M45/5a) on-board the R.V. Maria S. Merian in March 2007: cores GeoB11804 (355 m water depth) and GeoB11807 (908 m water depth). Since this corer allows deeper penetration in the sequence, we can extent the paleo-record further back in time. Also, the sedimentation in this region is known to be greatly fed by aeolian dust which can be traced using the magnetic properties of sediments (Moreno *et al*., 2001), and eventually compared to the upwelling activity. Here, we present first results of magnetic properties from these two cores, and a preliminary time frame.

The magnetic susceptibility profiles measured on cores GeoB11804 and GeoB11807 were directly compared to the two initial cores (resp. GeoB6007 and GeoB6008, *H. Kuhlmann, unp. results*) to provide a preliminary stratigraphy. The age models established on these initial sites (using ^{14}C, ^{210}Pb and δ^{18}O, Kuhlmann *et al*., 2004; McGregor *et al.*, 2007) were then transferred to the new sequences. A refining of this chonostratigraphic frame will be provided using δ^{18}O of planktonic foraminifera (T. *Freudenthal, work in progress*).

The first results show two intervals characterized by peculiar magnetic and geochem-

ical properties: i) between 0 and 400 cm (i.e. the last millennium), the sediments are rich in magnetic minerals, particularly in high coercivity minerals (hematite and goethite) of rather low grain-size. At 500 cm, depth of the sulfate-methane transition, the magnetic content drops dramatically, probably due to enhanced diagenetic dissolution. ii) between 1500 and 2500 cm, the concentration of hematite & goethite decreases gradually and then falls to low values whilst magnetite content increases and shows ample and tooth-shaped variations. Depending on the age model, this interval was deposited between 5000 and 9000 yrs or between 8000 and 15000 yrs.

Further work needs to be done to i) combine geochemical and magnetic data to better interpret the changes in magnetic mineral content (i.e. decipher between terrigenous input and diagenetic transformation) ii) pinpoint pattern in time using the refined age model, and iii) compare and describe the sedimentary dynamics along a bathymetric transect, in order to provide more regional trends.

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