



A rock magnetic, color and element based determination of Late Quaternary aeolian and fluvial input variation along the Senegal continental margin

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Aeolian dust controlled by the N African monsoon in the sub-tropical region is the dominant source of terrigenous sediment into the NW African continental margin. The amount and distribution of N African precipitation is also primarily controlled by Monsoon and determines fluvial input. The Senegal continental margin is located just south of the present day northern summer limit of the ITCZ and receives sediments primarily from Saharan dust and from the Senegal and Gambia Rivers. Late Quaternary sediment cores recovered from the upper and middle continental slope show systematic alternations between interglacial dark-green (DG), fluvially dominated sections and glacial reddish-brown (RB) dust layers. Similar color patterns could be identified in numerous cores in both NS and WE transect which seems to be synchronous to north Atlantic Heinrich events. The freshwater pulses seem to drive the ITCZ southward by several degrees of latitude.

Within the EUROPROX framework, we embark on a multi-proxy approach to establish a stratigraphic framework for this region and to determine latitudinal variations in sediment budgets at glacial and interglacial intervals. Three master cores GeoB 9506 (15°36'N), 9516 (13°40'N) and 9527 (12°26'N) from around 3000 m water depth have been dated by cyclostratigraphic methods using element and rock magnetic data and provide continuous record back to marine isotope stage 6. However, all three cores show high sedimentation during glacials. Heinrich events are characterized by high dust input and the signal appears weaker in the southern-most core. We also apply a new approach investigating changes in magnetic properties and color within grain size fractions to Holocene and Heinrich Event 1 sediments along a WE profile to separate fluvial and aeolian sedimentary signatures.