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A 1.2 Ma unique record of the aeolian terrigenous signal off West Africa

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The Northeastern Atlantic Tropical Ocean (NEATO) receives large amounts of aeolian terrigenous material transported by the trade winds from the arid and semi-arid Sahara and Sahel areas. The study of this aeolian material in the marine sedimentary records of the NEATO contributes to reconstruct past climatic and environmental changes, such as variations in the wind intensity, aridity and/or weathering, that have occurred over the North-West African region.

The core MD03-2705 (18°05N; 21°09W; 3085m water depth) located off Mauritania was retrieved from a bathymetric dome, 300 meters above the surrounding seafloor. Considering this particular environmental setting, the terrigenous fraction in this record is assumed to be mainly of aeolian origin. This core, which covers the last 1.2Ma, thus provides a unique continuous record of the aeolian terrigenous deposits in this region.

Our approach includes the measurements of different sedimentological parameters (e.g., magnetic susceptibility, spectrocolorimetry, grain size) as well as clay mineralogy and major and minor elements (XRF) analyses. Preliminary results, including spectral analyses of the measured parameters, will be presented. Implications for our understanding of the atmospheric and continental changes that occurred in this region during the last 1.2Ma, period, which remains poorly documented, will be discussed.