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VARIABILITY IN CONTINENTAL ARIDITY OF NW AFRICA DURING THE LAST 13.5 KYRS: INFERENCES FROM TERRIGENOUS SEDIMENT SUPPLY AND GRAIN-SIZE DISTRIBUTIONS OF A MARINE SEDIMENT RECORD

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Deep-sea sediments near continental margins are important archives to monitor land-ocean interactions and their variability related to climate oscillations on various scales. The terrigenous fraction of marine sediment records reflects the input of sediments produced on and discharged from continents, which is directly related to climate conditions of the hinterland. Today the Sahara-Sahel zone is one of the most important source regions for mineral dust supply and produces more aeolian dust than any other world desert. However, next to aeolian dust there is another major source of terrigenous sediments deposited along the NW African continental margin; a number of permanent and ephemeral rivers transport sediments derived from the Atlas-Mountain hinterland to the continental shelf off Morocco. The studied gravity core, GeoB 6007-2, at the continental margin off NW Africa is located within the transition zone between the two climate systems, the 'Mediterranean regime' and the NW African monsoonal climate system that are separated by the Saharan desert belt. End-members that represent a series of fixed sediment grain-size compositions improve to distinguish aeolian and fluvial supply. Moreover, the marine sediment record documents variations in terrigenous sediment deposition off Morocco that is sensible to climate changes on the African continent. Today, the core location is influenced by both aeolian dust and fluvial discharged mud. Hence, it is particularly well suited to reconstruct continental aridity/humidity of NW Africa. It provides a continuous palaeoclimate record for the last 13.5 kyrs that mirrors sometimes very conspicuous, abrupt changes in continental aridity and therefore variability in aeolian dust formation in Holocene NW Africa.