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Effects of the Indian Ocean Monsoon oscillation during the Pleistocene-Holocene transition on the palinomorphic records in the NW Arabian Sea.

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The Indian Ocean Monsoon is one of the largest land-ocean coupled events on Earth. Its occurrence is not only of climatic importance but also has a considerable economic impact on the livelihood of people/countries within its coverage zone. The monsoon winds travelling over the Arabian Sea (AS) carry moisture and bring rainfall to the southern part of the Sultanate of Oman and over a broad area of the Indian continent. In addition to rainfall, the monsoon also causes an intense and extensive deep-water upwelling along the coast and offshore of East Africa and the southern Arabian Peninsula. This intense and pronounced upwelling increases the productivity turning the western Arabian Sea into one of the most productive regions in the world. In this poster we display partial results of a high-resolution study aiming at identifying monsoonal climatic changes recorded in marine sediments from the northwestern Arabian Sea during the late Pleistocene-Mid Holocene. It was carried out on 11 samples taken from an offshore core IODP Leg 117-721A-1H-1-W. An interval from 80 to 30 cm has been selected and samples have been taken every 3 cm. We show here results obtained from 6 radiocarbon dating together with the study of palynomorphs. The main objective is to qualitatively identify and characterize pollen grains and spores, as well as the non-pollen palynomorphs (NPP) present in the samples, correlating them with other study sites in the AS. In addition, we evaluate their potential as paleoenvironmental indicators. Samples have presented a low number of pollen grains and spore, which has ranged from 3 to 27 identified specimens. The deeper/older samples have presented a higher concentration of pollen grains. However, due to the low content of specimens, quantitative paleoenvironmental conclusion could not be drawn. Nonetheless, non-pollen palynomorphs are relatively abundant throughout samples. Dinocysts represent the most abundant type of NPP, followed by fungi, microscopic remains of algae and others still not identified. Palynological studies carried on the NW Arabian Sea are scarce and NPP identification and characterization have not been done at the study site yet. Therefore, our work presents novelty on recognizing palinomorphic imprints left by Indian Ocean Monsoon oscillation during the transition Pleistocene-Holocene off the Omani coast.