



Dust influx into the northern Indian Ocean over the last 1.5 Myr.

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Over the last 2 Ma the Earth's climate has been profoundly affected by quasi-periodic changes in the Earth's orbit around the Sun. The Earth's climate reflects cooling and warming associated with this orbital forcing, such as periods of glaciation and warmer interglacials, variations in sea surface temperatures and changes in global wind patterns. During glacial periods, dust input into the oceans increased as a result of stronger surface winds and greater source area from increased desertification. At low latitudes, the seasonality of monsoonal wind direction controls dust transport into the ocean. This research identifies the main controls on dust influx into the northern Indian Ocean over the last 1.5 Ma by analyzing the first high resolution marine sediment record from the Maldives carbonate platform (IODP Expedition 359; Site U1467), an area strongly affected by the monsoon seasons. Here we present variations in the concentration of specific normalized elements, from X-ray fluorescence spectrometry, reflecting the chemistry of the dust particles and source areas. The new dust record will be compared to other records of climate change, mainly from the North Atlantic, to investigate the degree of coupling between driving forces in the Earth's climate in the northern hemisphere. The results of this study will aid our understanding of the monsoon system, low latitude desertification, and the degree of climate coupling, essential for predicting the response of the system to future anthropogenic climate change.