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Palaeoclimatic significance of a 20 ka sedimentary record from the Hajar mountain range / NE-Oman, based on OSL dating techniques

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The shift of the mean latitudinal summer position of the intertropical convergence zone (ITCZ) over the southern Arabian Peninsula has a strong influence on the climatic condition of southern Arabia. A northerly shift of the ITCZ results in a northerly shift of the Indian monsoon which causes an increase in precipitation over southern Arabia. This could be shown by several palaeoclimatic investigations based on speleothems or sedimentary records, but still there is a strong demand on terrestrial records to investigate the palaeoclimate of southern Arabia. In this study we present a 20 ka sedimentary record from the nowadays arid Jabal Bani Jabir region in the southern Hajar mountain range of NE-Oman to investigate the sedimentation history of the region, which is strongly dependent on the palaeoprecepitation of the area. Holocene variations in sedimentation as consequence of climate fluctuations or human disturbance will be discussed in respect of palaeoclimate information derived from nearby speleothems. The studied site is located in a sedimentary depression near the mountain oasis of Maqta, at an altitude of 1160 m. There, a 20 m deep pit was dug for sediment sampling. The sedimentary chronostratigraphy was established by OSL dating and compared to 14C datings on molluscs.