



Dating large linear dunes in the southern Namib using OSL: single aliquot regeneration protocol and portable reader measurements.

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There is currently very little chronological control for the large dunes and sediments of the Namib Sand Sea, which covers 34,000 km², with just 45 ages from four sites. Further data is much needed to refine our understanding of the age and dynamics of this sand sea throughout the Quaternary. Existing OSL dating of facing flanks of two compound linear dunes in the south of the sand sea by Bubenzer et al. (2007) (features they term 'draas') yield Pleistocene ages (18-22.5 ka) for the western flank and early Holocene age (8.5 to 10 ka) for the eastern flank. Bubenzer et al. (2007) suggest the features formed before and up to the late Pleistocene under strong SE trade winds and that the crests were reshaped in the early Holocene by westerly winds removing sediment from the western flanks and re-depositing it on the eastern flanks. Alternative models for dune accumulation, migration and reworking should also be explored. This study dates a number of shallow-depth samples from this same region, to gain a more detailed picture of the depositional history of these large linear dune features. We compare measurements of luminescence intensity from a portable OSL reader with equivalent dose and age data for the same samples using a single-aliquot regeneration dating protocol. We also investigate the potential of OSL signal intensity of these and other Namib Sand Sea samples as a potential indicator for sediment provenance.