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Electron spin resonance dating of aeolian quartz: single and multiple grain data from the Middle to Late Pleistocene archaeological site 8-B-11, Sai Island, Sudan

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Archaeological site 8-B-11 (Sai Island, Northern Sudan) contains a sequence of lithic artefacts documenting the Early to Middle Stone Age transition. The artefacts are found in a gully which is filled with alternating aeolian and fluvial layers. The black Nilotic silts on top of the profile bear traces of last interglacial weathering conditions, indicating a minimum age for the underlying layers. Preliminary optically stimulated luminescence (OSL) ages of aeolian sand layers underneath these silts are scattered and range between $\sim$ 150 ka and $\sim$ 220 ka. In an attempt to contribute to the development of a general chronology for this site, we performed electron spin resonance (ESR) dating experiments on single and multiple quartz grain aliquots from one of the aeolian sand layers. The single grain data, based on the bulk Ti-related ESR centre concentration in quartz, show a uni-modal distribution with an age of $\sim$ 190 ka. The multiple grain data, based on individual Ti-H and Ti-Li centres, tend to bracket this age. All together, these new data seem to confirm the late Middle Pleistocene age for the archaeological layers underneath the Nile silts at site 8-B-11. More luminescence and ESR ages are underway to further refine the depositional chronology of the site.