

## Site formation processes at the Late Pleistocene archaeological sequence of Pockenbank Rock Shelter, Namibia

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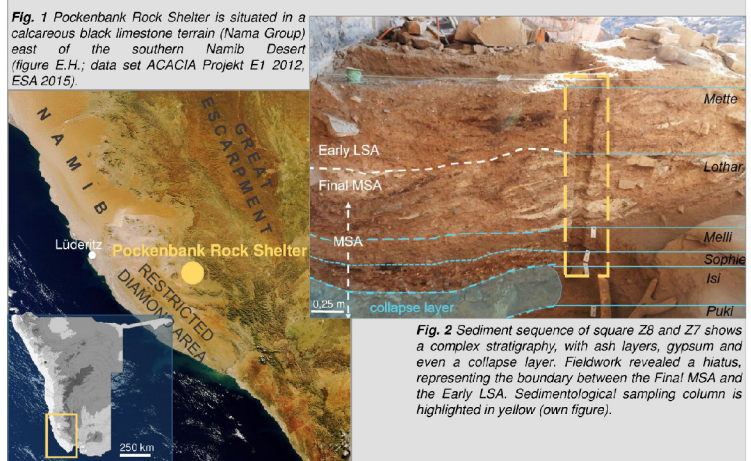
### Introduction and objectives

The archaeological sequence at Pockenbank Rock Shelter encompasses critical phases in the evolution of anatomically modern humans in southern Africa, i.e. of the Middle Stone Age and Early Later Stone Age technocomplexes (VOGELSANG 1998). To better understand human occupation history of – and cultural adaptation to – this very dry environment, the Cologne-based project ("At the margins of Late Pleistocene subcontinental Networks") (I.S.) applies selected geoarchaeological methods to the archaeological site as well as surrounding archives. This poster presents first results of the geoarchaeological analysis of samples taken at the site. Research questions of this Master study (E.H.) concern sediment deposition processes, post-depositional disturbance and use of the shelter by humans (GOLDBERG 2006).

### Methods

These include a detailed description of the profile exposed in the pit. The reconstruction site formation processes is based on micromorphological analyses of six thin sections (6 cm x 8 cm) and supplementary sedimentological and geochemical analyses (see Fig. 3). The profile was sampled in a vertical section (see Fig. 2). The micromorphological monoliths were extracted from the stratigraphic profile, prepared after BECKMANN 1997 and described after STOOPS 2003.

### The site Pockenbank Rock Shelter



### Sedimentology & Geochemistry

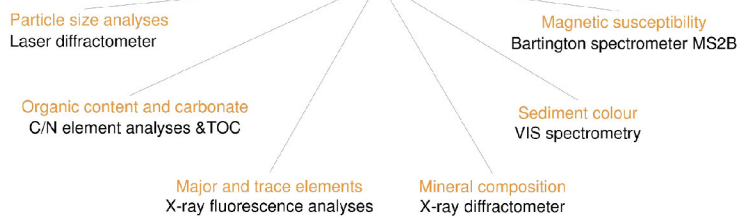


Fig. 3 Sedimentological and geochemical methods used to trace small variations in sediment composition (figure: E.H.).

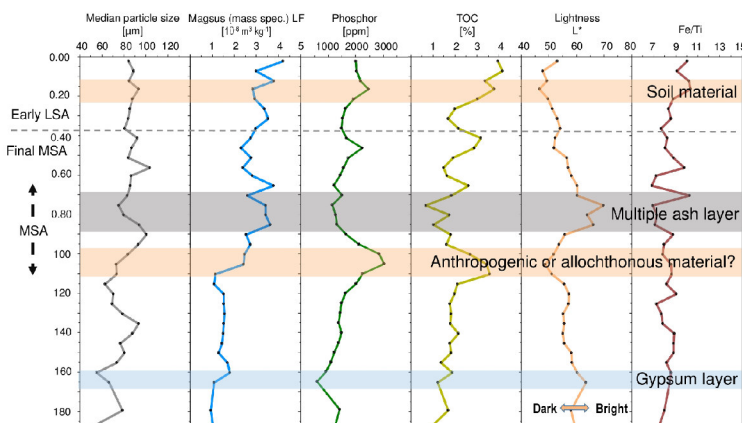


Fig. 5 Selection of sedimentological and geochemical results pointing out striking features in the sediment sequence (figure: E.H.).

### Micromorphology

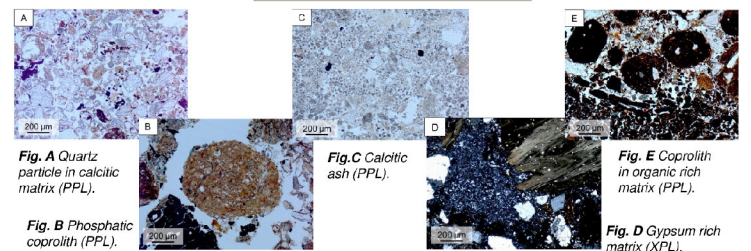
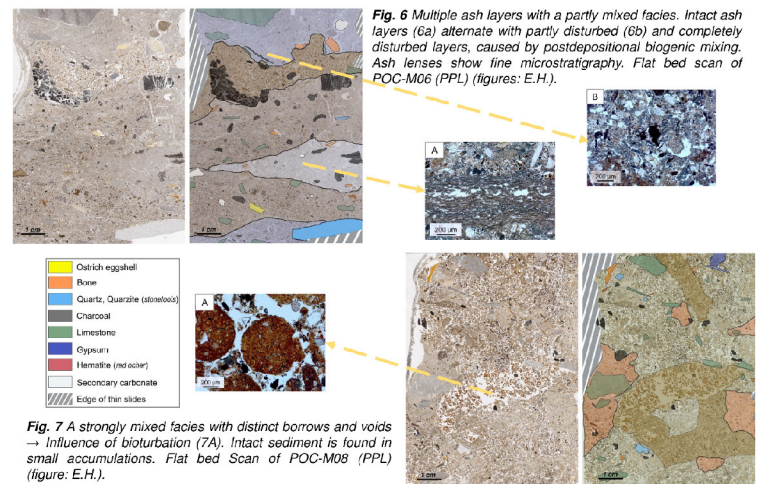


Fig. 4 Digital images of micromorphological features, identified in several thin sections (figures: E.H.).



### Major results and discussion

- Sequence consists mostly of siliceous coarse silt and fine sand indicating aeolian transport;
- Macroscopic differentiation of ash layers, charcoal and gypsum layers is possible;
- Carbonates present in rock fragments, calcitic ash and bone;
- Geochemical proxies do not suggest a variation of sediment source (Fe/Ti);
- Mineral composition consists of quartz, calcite & muscovite;
- Local gypsum enrichment in groundmass and pedofeatures signalize predominant aridity and low degree of water percolation;
- Disturbed layers of intensive bioturbation, as indicated by passage features and frequent excrements alternate with intact deposits (see Fig. 6 and 7);
- Layers of human activity are numerous (e.g. sweeping out of fire residues) (MENTZER 2012)
- Layering is reflected in magnetic susceptibility, phosphor and TOC content (see Fig. 5);
- Archaeological artifacts, imported materials and distinct polyphase ash lenses (see Fig. 6) are signs of human occupation;
- Woody charcoal and ash as main features → palaeo-environment with shrubby flora.

### Conclusion

- Humans were the most important agents for sediment accumulation at the site;
- Natural processes such as aeolian transport and roof fall were less significant;
- Multiple hearth burning, trampling & sweeping out of the area are indicated and reflect repetitive human modifications of the sediment record;
- Expected climatic signals (e.g. for alternating arid and humid conditions) are altered by human induced accumulation and post-depositional mixing;
- Pockenbank Rock Shelter provides a detailed record of Middle Stone Age and Early Later Stone Age occupations in a dry area.

### References

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### Maps:

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