

# ***Interactive comment on “A standardized database of MIS 5e sea-level proxies in southern Africa (Angola, Namibia and South Africa)” by J. Andrew G. Cooper and Andrew N. Green***

**Barbara Mauz**

mauz@liverpool.ac.uk

Received and published: 29 September 2020

This paper is part of an organised data-collection effort which is as much needed as it is appreciated. Part of the organised effort should be to make sure that we all follow the nomenclature of sea-level science. I believe this is important not only to stop current confusion on a number of shoreline-related facies terms, but also to standardise model-independent approaches and to identify non-uniqueness of proxy data. Here, I am commenting on the term ‘beachrock’. Beachrock (one word) is a coastal deposit that is lithified almost instantaneously when chemical characteristics (e.g. pH, CO<sub>2</sub> partial pressure, dissolved mineral content) of the fluids percolating the sediment are

Printer-friendly version

Discussion paper



appropriate. Such fluids typically occur in the intertidal zone where meteoric water mix with marine water (see Plummer 1975, Geol. Soc. Am. Mem. vol 142 for details). Beachrock is different to a coastal sedimentary rock that was lithified through diagenetic processes. The diagnostic feature of a beachrock is microcrystalline high-Mg calcite and fibrous or bladed aragonite, both minerals are meta- stable in nature. During subaerial exposure subsequent to the highstand, the minerals are subject to ordinary diagenetic processes with the end-point being chemical stability through formation of low-Mg calcite cement. Thus, two sets of controlling factors can plausibly explain the formation of the rock. I think it is important to discriminate between an intertidal beachrock and a sedimentary rock of shoreface, foreshore or beach facies, each forming in different water depth and being associated with different indicative ranges.

---

Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-166>, 2020.

[Printer-friendly version](#)

[Discussion paper](#)

