

Interactive comment on “Holocene sea level and environmental change at the southern Cape – an 8.5 kyr multi-proxy paleoclimate record from lake Voëlvlei, South Africa” by Paul Strobel et al.

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Paul Strobel and colleagues have presented a paper that documents the results of a study in the southern Cape of South Africa. That these authors are well experienced in working on Holocene records from this region shows in their carefully-compiled dataset and detailed interpretations that cover the state of knowledge on this coast and its hinterland. They present a multi-proxy investigation on a sediment core, and as well as radiocarbon dating, apply OSL to the record to provide two methods of geochronology.

This site is well positioned to compare a coastal plain to an offshore core record from the adjacent shelf, linked to the same Gourits River catchment.

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Overall, I suggest only minor revisions to this well-constructed paper. One broad comment I have, however, is concerning modern-day drought and discussions of past drought events. By the end of the paper, there is a clear history of the relative changes in moisture during the period under consideration, but is it possible to say more explicitly in the text just ‘how’ dry or how moist the climate may have been, compared to a benchmark of today for example?

Specific suggestions for in-text edits:

Line 18: sea-level changes

Lines 19, 23, 78: I am not happy with this term ‘intermittent’ as it is not clear what you mean. Please define exactly what this refers to in the introduction.

Line 29: what is a climatic spike?

Line 30: major, not mayor

Line 31-32: the last sentence of the abstract promises evidence of changing moisture, but the results highlighted in the abstract talk to shifts between easterlies and westerlies. Readers who are not familiar with the area and its climate regime will not be able to infer what that means, so please be more clear with giving a brief summary of moisture fluctuation in the abstract.

Lines 34-35: this correlation to modern needs for studying past climate needs to be better integrated by the end of the study, as this was the only specific reference I noted to the present conditions. A short section in the discussion, even if only a few lines, to tie back to this ‘why we learn about the past’ is necessary to loop back to the departure point of the paper.

Line 39: currents

Line 79: delete ‘therefore’

Line 87: the reference for the SRTM dataset is Jarvis, A., H.I. Reuter, A. Nelson, E.

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Guevara, 2008, Hole-filled SRTM for the globe Version 4, available from the CGIAR-CSI SRTM 90m Database (<http://srtm.csi.cgiar.org>)

Line 90: what is the name of the ephemeral river? Is it the Buffels River?

Line 119: write out 'Twelve' to start the sentence

Line 269: you write that the different sediment units were differentiated on colour, but it appears that grain size was considered too?

Line 314: 'strongly reduction' needs rephrasing

Line 317: pattern to TIC

Line 335: 'Remarkable are three strongly' needs rephrasing. I suggest saying 'Notably, ...'

Line 401: marine water

Line 405: delete 'very'

Line 464: sea-level curves

Line 467: sea-level evolution

Line 577: sea-level changes

A few linguistic peculiarities to address:

Line 23: rephrase to: silting up has resulted in an intermittent freshwater lake

Line 37: hitherto is not correct in this context

Line 310: rather use 'mentioned previously' instead of 'aforementioned'

There are a few references missing from the list:

Line 344: Conolly, 1939

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Line 346: d'Orbigny, 1839

Line 347: Montagu, 1808

Line 351: Costa, 1847

Line 379: Chambers et al., 2014

Line 462: Rautenbach et al., 2019

All figures are good quality and all contribute meaningful data and information.

I look forward to seeing this manuscript published.

Kind regards

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2020-130>, 2020.

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