Discussion paper
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# Interactive comment on "Late Pleistocene to Holocene climate and limnological changes at Lake Karakul (Pamir Mountains, Tajikistan)" by Liv Heinecke et al.

**Sebastian Luening**
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Dear Dr. Lüning,
Thank you for your interest in our study and your comment.
As you already noted, the study focuses on a much longer timescale. Therefore the timely resolution is not as high as it maybe should be to be able to give detailed information about the MCA and the LIA in the study site region.
We will have another look at the data in the last millennia and if possible add a comment or short discussion on the subject when revising the manuscript.

**Dr. Lünings Comment:**
This is an important dataset from an interesting region. When zooming into the data displayed in figure 3, I was positively surprised about the high resolution nature of the study. My personal interest is on the climate history of the past 1000 years which seem to be nicely resolved by the dataset. Nevertheless I was somehow disappointed that the Medieval Climate Anomaly (MCA) and Little Ice Age (LIA) were not even mentioned in the text. Of course it will always be a challenge to pay sufficient attention to every climate phase, given the long coverage of 29,000 years of the study. Nevertheless I would find it very useful if MCA and LIA could be briefly discussed in the revised manuscript.
Looking at the curves in fig. 3 a possible wet phase may be interpreted for the MCA at 900-1300 AD as indicated by strong peak in EM3 grain size which is used as proxy for monsoon rain. Notably, this phase furthermore generally seems to coincide with high TOC and high lake productivity (PCA 1) which may reflect warm climate.
This seems to fit with other studies in the region, e.g. Treydte et al. 2006 & 2009 in the Karakorum. See preliminary results of an ongoing MCA mapping project here: http://t1p.de/mwp

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