

Clim. Past Discuss., referee comment RC2
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Comment on cp-2021-137

Anonymous Referee #2

Referee comment on "Humidity changes and possible forcing mechanisms over the last millennium in arid Central Asia" by Shengnan Feng et al., Clim. Past Discuss.,
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I believe high-resolution hydroclimatic records during the last millennium in Tianshan Mts will be welcomed by both paleoclimatologists and archeologists. This study made a good attempt. In general, the manuscript is properly organized and well written. The scientific topic is significant and main conclusions are convincing. It is suitable for the scope of this journal. Therefore, I recommend acceptance of the manuscript for publication after some minor revisions.

1. There are still some records suggesting a humid MWP around Tianshan Mts (e.g., Zhang et al., 2009[doi: 10.1029/2009gl037375]). Could you please provide some discussions?
2. Previous studies have already proposed "an unstable hydroclimate during the LIA over the ACA" (e.g., Chen et al., 2009 [doi: 10.1007/s11434-009-0201-8], 2019[doi: 10.1007/s00382-019-04685-5]) on multi-decadal to centennial timescales, which should not be neglected in the relevant discussion part.
3. In "5.3 Linkage to ENSO", the significance of ENSO variance for hydroclimate in ACA, or Asia, should be firstly pointed out. It is also notable that the referred work (Huang et al., 2017) could not be used as evidence for the influence of ENSO variance on extreme rainfall events in this region - It focuses on ENSO itself rather than ENSO variance.

Technical comments:

1. The contour lines should be further smoothed in Figure 1c.
2. In Figure 3b, I know what you mean, but where are the "black dots"?
3. It would be better to use "centennial" timescale when "multi-decadal" timescale was used.
4. P5L140, "Positive and negative Z-scores indicate dry and wet climatic conditions". It seems to me that positive Z-scores indicate dry conditions, and vice versa. Please revise it.