

Clim. Past Discuss., author comment AC1
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Reply on CC1

Maierdang Keyimu et al.

Author comment on "A 406-year non-growing-season precipitation reconstruction in the southeastern Tibetan Plateau" by Maierdang Keyimu et al., Clim. Past Discuss., <https://doi.org/10.5194/cp-2021-13-AC1>, 2021

Dear editor, Dear Dr. Yuhe Ji,

We would like to thank you for your interest in our work, and also for your evaluation, and most importantly, providing some constructive comments and suggestions, which are indeed very valuable to improve our work. Below is our one-by-one reply to the concerns and suggestion. The author replies were illustrated in *ITALIC*. Some of our replies included updated figures, and they were attached as supplementary file to our response.

Thanks again.

Best regards

on behalf of all the authors

Zongshan Li and Maierdang Keyimu

The precipitation during non-growth season (coincide with non-monsoon season) in the monsoonal areas are extremely important for the forest ecosystems, because they are the critical moisture source in the early growth season when the monsoon has not arrived. This manuscript provided with opportunity to observe the long-time variability of the NGS precipitation in the southeastern Tibetan Plateau, where historical NGS precipitation was not reconstructed before, and such work provides with important knowledge to evaluate the future of regional forest development. The background of the study and importance of the current investigation were introduced well. The methodology was sound and provided in detail. The results and discussions were convincing and were presented logically in order. However, there are some minor points which needs to be addressed, as well as some suggestions which can be considered to refine the work.

- It was used as "non-growth season precipitation" on the title of the manuscript, however, it was used as "winter precipitation" in the keywords, such mixed usage also existed at some other places within the main text, please synchronize.

Author reply:

Thanks for the comment. We will use as "non-growth season precipitation" throughout the revised manuscript.

- Please separate the ombrothermic diagram of the climate variables from Fig. 1, because an important term "saddle shaped rainfall pattern" was mentioned in the discussion, and it was not clear to observe such rainfall pattern in the current status of Fig. 1.

Author reply:

Thanks. We will separate the ombrothermic map in the revised manuscript (it will be appeared as Fig. 2 in the revised manuscript). Please refer to the attached supplement for the separated and refined ombrothermic diagram.

- Please alternate a higher resolution map of the study area because a lot of information were hard to obtain from the current map. In addition, please provide an image showing the landscape of the tree-ring sampling site.

Author reply:

Thanks for the suggestion. We will replace a re-created map of the investigation area (updated Fig. 1) which included more information about the geographical conditions of the study area (combing the comments by referee 1). Fig. 1 also included the landscape image of tree ring sampling site. Please refer to the attachment for the updated Fig. 1.

- What is the sample depth In Fig. 2? Is it number of tree-ring cores or number of trees?

Author reply:

The sample depth in Fig. 2 is the number of tree-ring cores. We have sampled one tree-ring core per tree. We will replace the updated Fig. 2 (it will be Fig. 3 in the revised manuscript). Please refer to the attachment for the updated Fig. 2.

- It is important in dendrochronology (of course not limited to) science to present the complex and abstract results in a clear and easy to understand way for the readers. Please place the Rbar, EPS, and Sample depth on the right side of the Fig. 2, and use similar tick position for them, in this way, it would be easier for readers to have a sense that, which sample depth corresponded with which EPS and Rbar.

Author reply:

Thanks for the careful attitude and the suggestion. We will replace the updated Fig. 2 according to the comment. Please refer to the attachment for the updated Fig. 2.

- It is suggested to re-check the running EPS value, because it seems that sample depth was already quite high when the EPS reached threshold value.

Author reply:

Thanks. We have re-calculated the EPS value carefully, and the result was the same with the original one. Combining the suggestion of referee 1, we have used EPS criteria of 0.85 to truncate the reliable length of the chronology (updated Fig. 2, please see attachment).

- Please mention the meaning of Durban Watson test (Table2) in the results section, what does it imply.

Author reply:

We will remove the Durban Watson test (which represents the autocorrelation) from the Table 2, because what we used is the residual chronology (without autocorrelation), and presenting DW does not make sense.

- Please add the unit of NGS precipitation in the transfer function.

Author reply:

We will add the unit of NGS precipitation in the transfer function.

- Too much area was involved in the Fig. 7 to show the spatial representativeness of the reconstruction and actual NGS precipitation.

Author reply:

Thanks for the suggestion. We have re-conducted the spatial correlation analysis, and updated the Fig. 7 (it will be Fig. 8 in the revised manuscript). We will replace the updated figure in the revised manuscript. Please refer to the attachment for the updated Fig. 7.

- Some references were not inserted in the main text, while some citations were not provided in the reference list. Besides, the references should be re-organized according to the journal template. For instance, it was used as "D'Arrigo, R. D" at one place, while it was used as "D'Arrigo, R" at another place. "Clim. Dynam." in one place, while "Clim. Dyn." in other place, and so on, please rectify.

Author reply:

Thanks for the careful attitude of Dr. Yuhe Ji. We will check through the main text of the manuscript and also the reference list, and rectify the existing problems within citations and references.

Please also note the supplement to this comment:

<https://cp.copernicus.org/preprints/cp-2021-13/cp-2021-13-AC1-supplement.pdf>