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Reply on CC1

Linan Guo et al.

Author comment on "An integrated dataset of daily lake surface water temperature over the Tibetan Plateau" by Linan Guo et al., Earth Syst. Sci. Data Discuss., https://doi.org/10.5194/essd-2021-151-AC2, 2021

1☐Thank you for the suggestions. We are happy to share our codes among the research community. We will wrap our model codes and share them at GitHub, the link to which will be added to the final revision of the manuscript.

2☐Thank you for the good question. We deeply agree that the spread of the meteorological stations in the Tibetan Plateau is a big constraint for earth system researches in the region. We also tried the current reliable reanalysis climate datasets (e.g., China meteorological forcing dataset, DOI: https://doi.org/10.11888/AtmosphericPhysics.tpe.249369.file), but it were found not necessarily suitable for the LSWT simulation when we compared them against the observations from the meteorological stations. The validation of the modelling results against the in-situ lake surface temperature observation in the Tibetan Plateau is valuable. The in-situ observation data however are not widely available for lakes in the Tibetan Plateau to conduct an overall validation of the modelling results. Nevertheless, as our reply to RC1, we have compared the modelling results against the currently publicly available in-situ surface water temperature for lakes in the Tibetan Plateau, which include sequential observation of 4 lakes (i.e., the Ngoring Lake, Serling Co, Dogze Co, Bangong Co) and sporadic observation of 41 lakes (Table S1). As shown in Figure S1 in the supplementary, the simulated lake surface temperature is in good agreement temporally with the sequential observations (R2=0.97, 0.92, 0.90, 0.97 for Ngoring Lake, Serling Co, Dogze Co, Bangong Co respectively) and spatially with the sporadic observation (R2=0.94). For the validation against the sporadic observation, simulated lake surface water temperature of day same to the observation is used.

Please also note the supplement to this comment:
https://essd.copernicus.org/preprints/essd-2021-151/essd-2021-151-AC2-supplement.pdf