Additional Reply
Guoxiong Zheng et al.

Author comment on "The 2020 glacial lake outburst flood at Jinwuco, Tibet: causes, impacts, and implications for hazard and risk assessment" by Guoxiong Zheng et al., The Cryosphere Discuss., https://doi.org/10.5194/tc-2020-379-AC6, 2021

Dear Editor and Referees,

In order to better understand the mechanisms of the landslide-GLOF cascade, we have performed a re-analysis of the pre-event and post event imagery in combination with new simulations with improved settings. In particular, we have deactivated the diffusion control, which - in this specific case - has led to some unplausible patterns with regard to the impact wave. Our new analyses and simulations reveal that there was most likely no extremely rapid landslide impact into the lake, but that the landslide was occurring more slowly or progressively. The improved simulations for Scenario A have predicted some substantial run-up of the impact wave on the inner side of the moraine dam, and in some scenarios overtopping of the entire dam - which, in case of the sudden impact of a landslide of more than 1 million m$^3$, would probably be quite a realistic scenario. However, looking at the imagery, it seems that there was no run-up of the impact wave at all (vegetation seems undisturbed on the moraine dam, trimline corresponds to the pre-event lake level), only the retrogressive erosion. This, in our opinion, is a strong indicator against a very rapid landslide. We have updated the text (abstract, results, discussion, conclusions) as well as Figs. 10 and 11 accordingly.

Kind regards,

Guoxiong Zheng