Dear Dr. Guo, Dear Authors,

Your manuscript essd-2022-238 entitled "A new inventory of High Mountain Asia surge-type glaciers derived from multiple elevation datasets since the 1970s" has now been reviewed by two reviewers and we close the open discussion phase accordingly. We appreciate their constructive comments and recommendations for further improvement of the manuscript. In light of their advice, we have decided that we cannot offer the manuscript for publication in its current form. Instead, we ask that you submit a detailed response to the reviewers’ comments explaining how you would address their concerns. Please refrain from submitting a revised version of your manuscript at this stage. The editors will decide whether we will proceed with a revised manuscript based on this response letter.

In particular, we appreciate that the two reviewers find aspects of your work of interest to a broader glaciological audience. Editorially, we find the approach of using DEM differencing to capture glacier surges promising, particularly because of the large spatial and long temporal scale. However, the reviewers’ comments also lead us to conclude that there are potentially serious problems with the dataset you present, and in particular with its validation. One of the main criticisms is that your dataset relies on the change in surface elevation as the sole diagnostic for a possible glacier surge. This could simplify your detection given the many possible types of rapid glacier change in this region. A second important observation is that the location of the glacier surge is difficult to identify in the current dataset because the entire glacier is labeled as a surge, even if only tributary glacier surged. This contributes to similar concerns in the editorial board before the work was sent for review. Third, the paper could benefit from a systematic comparison of the present study with previous reviews in terms of previous and updated numbers of glacial outburst floods identified.

We believe that these major caveats and a number of minor terminological, technical, and statistical problems require careful revision that may take some time, both for correcting the dataset and the manuscript. Should you aim for further consideration of your work in ESSD, please make explicit reference in your response letter to whether and how you will implement the reviewers’ suggestions, or propose alternative approaches instead. Should you convincingly demonstrate in your response letter that you can accommodate all of these changes, we would be happy to consider a revised manuscript. However, we understand if you prefer to publish the paper elsewhere.
Yours sincerely

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