

Earth Syst. Sci. Data Discuss., referee comment RC1
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Comment on essd-2022-265

Anonymous Referee #1

Referee comment on "Interdecadal glacier inventories in the Karakoram since the 1990s" by Fuming Xie et al., Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2022-265-RC1>, 2022

The manuscript deals with the compilation of a glacier inventory in the Karakoram region. The topic is of high interest to the scientific community, and not only.

The manuscript is well written (there are a few typos to check, e.g. line 248), but there are some issues to be solved before its publication. First of all, authors need to describe all the, employed, data at the beginning of Section2; currently, ancillary data, which constitute an important part of the processed ones, are progressively introduced during the description of the various elaboration.

Concerning subsection 2.6, to improve readers' comprehension, a figure, like Fig. 4, should be added. Moreover, if applied to debris-covered glaciers, the discrepancies between the two methods highlight their proneness to errors in their mapping.

In Section 4, the authors should immediately state that due to the different approaches, data sources and methods cannot be compared without a high level of uncertainty and maybe, only qualitatively. Subsection 4.3 should be shortened and merged with the previous one.

Conclusions should mention that the processing is carried out by semiautomatically processing Landsat images and ancillary data.

Additionally, some parts need rephrasing as they are unclear to the reader:

- Lines 174-181;
- Lines 292-307.

In the data repository, the uncertainty statement is different from the one cited in the paper [$\pm 5.03\% \neq \pm 3.68\%$], please clarify.

There are also minor comments as follows:

- Subsection 2.5 is written in the wrong format;
- Line 485, please mention rockfalls in addition to avalanches;
- when regression or correlation analyses are cited statistical significance (p value) and the correct parameter should be cited;
- Maps should be improved by removing the north arrow and scale (the coordinates in the outline give the same information) or by placing them in the same area of the legend (i.e. unique white background).