The Cryosphere Discussions

The Cryosphere Discuss., referee comment RC2
https://doi.org/10.5194/tc-2022-48-RC2, 2022


# Comment on tc-2022-48

Anonymous Referee #2

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Referee comment on "Homogeneity assessment of Swiss snow depth series: comparison of break detection capabilities of (semi-)automatic homogenization methods" by Moritz Buchmann et al., The Cryosphere Discuss., https://doi.org/10.5194/tc-2022-48-RC2, 2022

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The authors have performed homogeneity testing on snow series using three different methods on two different snow variables. The paper is well written with good structure and nicely presented results. It is a good addition to the scientific literature on homogenisation of snow depth series. However, I do think it would benefit the paper to include some results that shows the impacts of the homogenisation (difference between raw and homogenised series, trends…).

I agree with reviewer 1 about it not being clear why break detection depends on elevation. I suggest adding a version of what you answered reviewer 1 to ch. 4.1.3 or another suiting place in the paper to explain your motivation for looking into this.

Fig. 8 could use some refinement:

- What I understand from the figure text is that valid breakpoints detected by two methods are shown in grey but breaks only detected by one method are also shown in grey. This is confusing. And are breaks detected by only one method shown in the figure?
- In the legend I suggest using a color other than grey for the circle, square and rectangle (for acmant, climatol and homer) or another color than grey for dHS1, whichever is easiest.
- In addition, there is a “NA” in the legend that looks out of place.

Please see the attached pdf for the rest of my mostly technical and minor comments.

Please also note the supplement to this comment:
https://tc.copernicus.org/preprints/tc-2022-48/tc-2022-48-RC2-supplement.pdf