

The Cryosphere Discuss., referee comment RC3
<https://doi.org/10.5194/tc-2022-48-RC3>, 2022
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Comment on tc-2022-48

Anonymous Referee #3

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-RC3>, 2022

The paper is well written. The presentation is clear and well structured. It has been a pleasure to read it.

The paper presents a study assessing the performance of three different applications for identifying homogeneity breaks in snow depth time series. The analysis and results are well described and discussed. My main concern, which is not very large, is related to the comparison of the applications. There are obviously several subjective choices to take in applying both Homer and Climatol, and less in Acmant. One issue the authors mention, and which I recommend to pursue more, is the role of the reference network and how they are established, and how that influences the results. I have a feeling that this is as well an important issue as the break detection algorithm itself. In order to have a fair, consistent comparison of the break detection capabilities I would therefore challenge the authors to apply the three methods with the same reference networks. Would it be possible to apply them on all three combinations of networks?

Minor comments:

Line 27: Typo: contemporay □ contemporary.

Figure 7: Difficult to read. Use a lighter shade for the terrain, and make the black dots smaller. Consider dark-grey contour lines (rivers, borders).

