The Cryosphere Discussions

The Cryosphere Discuss., referee comment RC1
https://doi.org/10.5194/tc-2022-48-RC1, 2022

Comment on tc-2022-48

Ross Brown (Referee)

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-RC1, 2022

Dear Authors, a timely and practical piece of work that will help guide folk who wish to examine the homogeneity of in situ snow cover series. My comments are manly minor and editorical in nature, and are included in the attached annotated pdf file. My only criticism of the paper is the lack of independent testing of the three break point methods with synthetic series. Without this, one of the main conclusions to use multiple break point detection methods seems a little weak given that one method was shown to greatly over-identify break points. The authors make a point to avoid going very far in the correction side of the homogenization process, but this diminishes the interest factor. For example, it would be interesting to show some preliminary metric of the impact of correcting series e.g. on trends in regionally-averaged snow cover series. The paper was well-written, easy to follow and a pleasure to review. Best regards, Ross D Brown, Canada.

Please also note the supplement to this comment:
https://tc.copernicus.org/preprints/tc-2022-48/tc-2022-48-RC1-supplement.pdf