

Interactive comment on “What glaciers are telling us about Earth’s changing climate” by W. Tangborn and M. Mosteller

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First, regarding your concerns that the title is too bold. I don't want to start how many papers are published with a title that don't give what you might look for in the paper. This doesn't seem right here. If you read the title you can expect a lot. It might need to be a bit more precise, but that's it.

Regarding the topic "old papers and not using recent ones" I might say that old papers are as important as recent ones. I used both, old and new publications in terms of comparison of mass balance changes, also following methods from Winkler, etc. and it was absolutely fine. Some measurement techniques haven't changed (or just a little) since they have been published.

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I've read through the document and have not found a poor structure. Everything was understandable. You might be right, that in some cases, there will be more explanations needed, but overall it's clear.

What I think might be interesting is, how much influence the selected observation stations have in this project. This is a highly discussed topic (as you might know). For example, for the Vernagtferner in the Oetztal in Switzerland I would take the Pegelstation Vernagt because it's located next to the glacier body and is updated daily. Or the station "Vent" for all of the Oetztal glaciers, but I know that there are not as good correlations with mass balance as with the station Vernagt or Innsbruck. For other glaciers for example Nigardsbreen or Storbreen in Norway I would select the station Bergen, because they have a better correlation with glacier mass balance than closer stations.

Focussing on the glacier mass balance and global climate, it's reasonable. For example for European glaciers studies have been carried out in terms of mass balance and the NAO, which clearly influences the weather in Europe and there is statistical evidence (correlations) that it also influences the glacier mass balance of maritime Norwegian glaciers.

Summarising my comments, I'm saying that the paper is understandable and structured. Maybe some more research on the individual locations of the glaciers and the observation stations might be very interesting and good. In the calibration section, it might also be good to add some information because it might be unknown to some people.

All the best!

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