

## ***Interactive comment on “Permafrost distribution and conditions at the headwalls of two receding glaciers (Schladminger and Hallstadt glaciers) in the Dachstein Massif, Northern Calcareous Alps, Austria” by Matthias Rode et al.***

**Wojciech Dobiński**

wojciech.dobinski@us.edu.pl

Received and published: 22 February 2019

Dear Authors,

the relationship between glaciers and permafrost is one of the most interesting cryospheric issues, especially in the context of global warming. For this reason, the subject taken by the authors is very inspiring and valuable. However, the question of the presence of permafrost in high mountains goes back to the last glaciation. There are publications that show that the maximum thickness of permafrost in this period

Printer-friendly version

Discussion paper



could reach in the Alps several hundred, even 1000 m (Haeberli and Funk)). Holocene warming has, on the other hand, never been so strong as to degrade permafrost of this thickness. It can be assumed that in the area studied by the authors, also throughout the entire Holocene, the MAAT did not rise above 0 ° C. Also under the glaciers the temperature can not rise above 0 ° C. It follows that the permafrost studied by them even refers to the Pleistocene and is probably still very thick, but its temperature changes in time. It is known for quite a long time that in high mountains, where MAAT is <-1oC, there are conditions for the persistence of permafrost even when the glaciers are undergoing a recession. The area left by the glacier is embraced by permafrost (ie Storglaciaren, Tarfala, see C. Kneisel, W. Dobinski, L. King; et al), Spitsbergen. The same is certainly the case in Dachstein, where MAAT is -2.4oC. That would be an important finding to get to know new information about that. The issue under discussion, although actually presented a bit vaguely presents interesting research results. After significant changes suggested here, and by the reviewer, it would be suitable for publication. What's more, I suggest the authors more courage in formulating the conclusions.

---

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-281>, 2019.

Printer-friendly version

Discussion paper

