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.

Matthias Rode et al.

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Anonymous Referee #1

(1) Comments from Referee

a) The intention of the paper is entirely unclear. What is your scientific focus? What is the research gap you are going to fill?

b) You limit the study on describing the permafrost distribution in the Dachstein Mas-

sive. In this case, I am in doubt that the relevance of your study is high enough for an international journal as The Cryosphere

c) The quality of the manuscript is rather poor.

(2) Author's response

a) We clarified our scientific focus in all chapters and focused on the aims of this study: Detection, delimitation and characterization of permafrost in the rockwalls surrounding the retreating Schladminger and Hallstatt glaciers in the Dachstein area.

b) We have now pointed out much clearer that the abovementioned aims contribute to an overarching question which is of relevance for an international readership: how widespread glacier retreat will affect permafrost degradation and/or aggradation in alpine rock walls.

c) As mentioned above we reworked the content, checked language and removed irrelevant information (despite adding more desired information, the paper is now 600 words shorter).

(3) Author's changes in manuscript

We are grateful for the many valuable comments in the text. Due to the reviewer's suggestions, the paper has been thoroughly revised. Many passages were completely rewritten and considerably shortened in this process. Due to the extensive changes, it was no longer possible to track the individual changes. - The Introduction chapter was thoroughly revised.

- One of the most important changes in the structure of the paper was to shift the information on glacier retreat from the results section to the Study Region chapter (even though own results contribute to this information). This means that glacier retreat is now treated as the basic prerequisite for the permafrost change.

- The Discussion section has been entirely restructured and rewritten. It now follows

the structure (1) General distribution of permafrost; (2) Significance of the ERT results; (3) Aggradation or degradation of permafrost.

- The Conclusions were focused and shortened. This allowed us to reach much more concrete conclusions.

The new full manuscript is added as supplement file.

Please also note the supplement to this comment:
https://www.the-cryosphere-discuss.net/tc-2018-281/tc-2018-281-AC1-supplement.pdf

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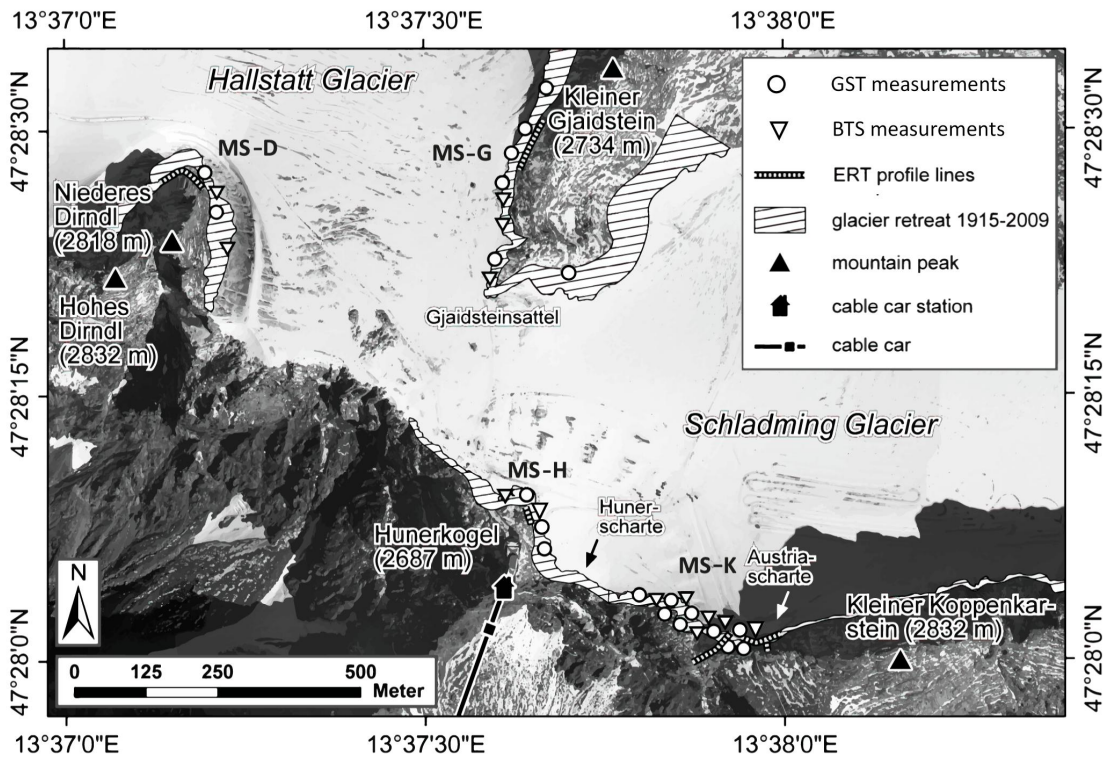
Fig. 1. Figure 3: Measurement locations of the different techniques (BTS, GST, ERT) at the studied rockwalls. Data source: Orthophoto by Province of Upper Austria 2013
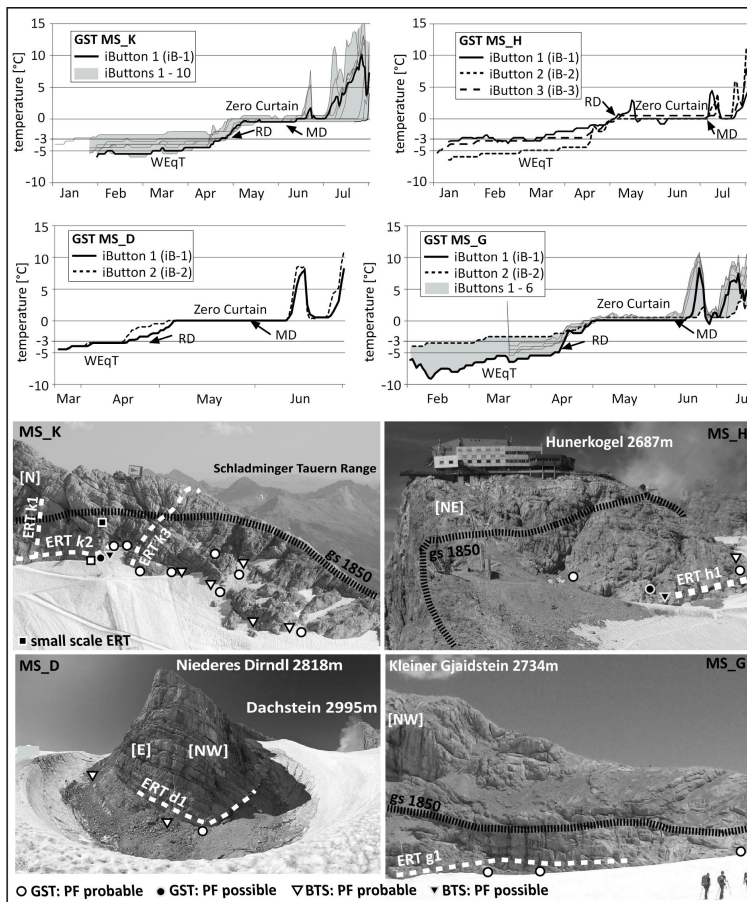
Fig. 2. Figure 5: GST measurements from January 2013 to July 2013 and measurement locations of the different techniques at the studied rockwalls including interpretation of results of the GST and BTS measurem