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Interactive comment on "Mountain permafrost degradation documented through a network of permanent electrical resistivity tomography sites" *by* Coline Mollaret et al.

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Review of "Long-term monitoring of mountain permafrost degradation using an electrical resistivity tomography network" by Mollaret et al.

This manuscript reports results of 2D ERT monitoring surveys at six sites in the western Alps. The authors draw conclusions on the state and the degradation of permafrost likely related to climate changes, which deserves publication in The Cryosphere.

This paper is very well written and the figures are well presented. The abstract is concise and the introduction gives a good overview and presents the motivation. This

long-term dataset is extremely valuable. The data quality is variable and the data selection is well explained. The data inversion seems well done. The way to illustrate the seasonal effect in Figures 4 and 8 is very nice. Figure 10 is a very clever and innovative way to illustrate the long-term variation.

The amount of work to compute these tomographic images is probably enormous and the results are impressive. The analysis is thorough and the interpretation is very interesting. Thus, I recommend publication and I have very few comments to improve this manuscript.

The only requests/suggestions would be: - Add the reciprocal measurements in the supplement. It is a bit useless to talk about them, without showing figures. - Check the format for referencing several publication in the text. I understand that the rule is chronologically before alphabetically. - Add a more general paragraph on ERTM time series. I feel that some references on resistivity monitoring are missing.

Comments: Page 2 Line 2: Change "may" by "will" Page 4 – line 4: ALT is already explained earlier Page 4 line 18: explain the short and long-wave radiations for those who are not familiar with meteorological stations. Page 6, line 28: I would remove "Here, . . ." Page 9, line 22. Please add the user-defined site-specific thresholds for the inversions in table 1. Page 9: I would rephrase or expand the sentence in line 25. Page 10: I would also rephrase or expand the sentence in lines 9-12.

Figure 2: I would not use blue for ALT1 and ALT2. It is confusing with the 2 other blues (LAGT10m 1 and 2). In the caption, add "Where available, data are given for two boreholes (1 and 2). Figure 10: I really like these 2 figures. The right one is however a bit difficult to understand/follow. The yellow background is not a good choice. Maybe you could use thicker and coloured lines in this area.

Sara Bazin Oslo, 27/05/2019

Interactive comment on The Cryosphere Discuss., https://doi.org/10.5194/tc-2018-272, 2018.