

Response to Reviewer1's comments

Some minor revisions to the manuscript from Pace et al. are listed here.

Dear Rachele Lodi,

Thank you very much for the time you spent on our manuscript and for the useful comments. Below, we provide responses to your comments/suggestions and point to the made changes in the revised manuscript.

Regards,

The authors

1. *Line #43 Reformulate the sentence: From a geophysical point of view, the Svalbard archipelago is interesting because of the presence of permafrost with seasonal active layer, springs, etc.*

Thank you. The sentence has been reformulated.

2. *Line #50 They can be easily distinguished by the different resistivity values.*

Thank you, corrected.

3. *Line #53 is based.*

Thank you, corrected.

4. *Line #54 it can (the whole sentence could be rephrased).*

Thank you. The sentence has been reformulated: “Moreover, ~~the GPR signal, whose traveling time and impedance are based on the dielectric permittivity of the material,~~ given that the traveling time and impedance of the GPR signal are based on the dielectric permittivity of the material, the GPR method can clearly distinguish ...”.

5. *Line #56 "the permafrost has mainly been studied", I guess it means in the area? Or in general? Probably the "mainly" is confusing.*

Thank you, “mainly” was deleted.

6. Line #75 Review: *“from its glacial and periglacial systems”*.

Thank you, corrected.

7. Line #90 *Because of the importance of the sentence, I suggest changing it to "The aim of the geophysical survey is to investigate the presence and role of groundwater flow across the active layer and through and beneath the permafrost"*.

Thank you. The suggested sentence has been added.

8. Line #109 Delete "-".

Thank you, corrected.

9. Line #180 *Several scientific instruments in Ny-Ålesund take advantage of the radio silence in Ny-Ålesund. An overview of both transmitting and receiving RF equipment used in Ny-Ålesund can be found in the NySMAC frequency list. It may be mentioned in the text.*

Thank you. This section was revised also following comment #7 by Reviewer2. The sentence was corrected: “~~This restriction is probably duly working for very high frequency signals (in the order of giga Hz). Even though any equipment emitting radio signals is avoided and several scientific instruments take advantage of the radio silence, a few exceptions are permitted for safety, operational and scientific reasons. The equipment transmitting and receiving radio frequency in Ny-Ålesund is supposed to be authorized and listed in the “NySMAC frequency list” (<https://nyalesundresearch.no>). The most corrupted MT signals ...~~”

10. Line #450 delete "the" before Ny-Ålesund

Thank you, corrected.