

***Interactive comment on* “Brief Communication: Evaluation and comparisons of permafrost map over Qinghai-Tibet Plateau based on inventory of in-situ evidence” by Bin Cao et al.**

Anonymous Referee #2

Received and published: 18 October 2018

The manuscript presents a useful contribution for understanding performance of different permafrost maps at QTP. The aim of the study, methods and presented results are relatively clear, however, several parts of the text need to be clarified and part of the methods needs to be slightly extended. The manuscript has to be proofread for language and use of several terms in the manuscript can be improved. I have listed a number of specific comments below, which should improve the clarity of the text. Authors should find the comments straightforward to implement.

Specific comments:

Page 1, line 4: change “overall accuracy of about” to “overall accuracy between”

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Page 1, line 5: omit “extremely large”. The areas are matter of scale and don’t need to be evaluated in this case. It is also not clear how this part of the sentence relates to the beginning where comparison to in-situ measurements is discussed.

Page 1, line 6: How do you define “fragile landscapes”?

Page 2, lines 4-5: What is a large enough dataset? I assume that the evaluation datasets were large enough for the publications to be published. In the next sentence, “This would weaken their applications” sounds as the datasets were inappropriate. I would change the formulations of the both sentence to more positive. For instance: “The new larger dataset can be used to improve evaluations of the existing datasets, which would further improve their applications . . .”

Page 2, line 16: The word evidence is used at many places in the manuscript. I’m not sure that its use is correct. It could be replaced by “information” in this case and maybe just a “validation site” elsewhere in the manuscript.

Page 2, line 18: The use of word “confidence” shall be used instead of “certainty” also further in the manuscript.

Page2, line 25: What are your criteria to define confidence (certainty) classes medium and low? How are these classes used further in the manuscript?

Page 3, lines 4-5: How do you define a clear permafrost reflection? The exact criteria for selection of GPR sites should be presented.

Page 3, line 9: The IPA map shows extent of four permafrost zones and is therefore not a binary map. Present here how did you convert it in to binary map showing permafrost presence and absence.

Page 3, line 16: Please explain here how PZlcold, PZlwarm and PZlnorm were derived by Gruber (2012) and what is difference between them.

Page 3, consider moving 2.3 section before 2.2 because it is in my opinion logical

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continuation of the inventory of permafrost validation sites. Also consider changing the section title to “Topographical and climatological properties of the inventory (or permafrost validation) sites”

Page 3, line 32: What are you referring to with “(about 500m)”?

Page 4, line 9: Please consider extending the explanation about the difference between permafrost area and permafrost region. This concept is difficult to understand by broader permafrost community. Maybe introduce the concept of scale and ground coverage by permafrost.

Page 4, lines 26-27: Restructure the sentences. It sounds as because of your permafrost absence/absence classification, you have 1475 sites. I assume that this is because of your site selection criteria.

Page 5, line 3: “were aggregated based on their major value”. Maybe replace with “the majority value was assigned to aggregated sites.

Page 5, line 15: More appropriate term for “band” would be “range”. What exactly does the word “sensitive” refer to?

Page 5, line 31: Did you mean QTPTTOP instead of PZITTOP?

Page6, line 10: Again, how exactly is fragile landscape defined?

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-190>, 2018.

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