

Earth Syst. Sci. Data Discuss., referee comment RC1
<https://doi.org/10.5194/essd-2022-347-RC1>, 2022
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Comment on essd-2022-347

Anonymous Referee #1

Referee comment on "A Comprehensive Dataset for Earth System Models in a Permafrost Region: Meteorological, Permafrost, and Carbon Observations (2011–2020) in Heihe River Basin" by Cuicui Mu et al., Earth Syst. Sci. Data Discuss.,
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The paper submitted by Mu et al. describes a permafrost dataset compiled from measurements in NE Qinghai-Tibet Plateau. The dataset includes Meteorological, Permafrost, and Carbon data. Such datasets and associated analysis are valuable because they can be utilized for model calibration and validation and also to the ecohydrological process study. For these reasons, this database should be of interest to many aspects, e.g. environmental impact assessment, mechanism study etc. However the manuscript does require a number of revisions before it can be accepted for publication.

Since the paper is about the dataset description, it should be more focus on the dataset, not others. For example, the introduction and the Location description of this study seems so detail. It could show the significant of this study, and simple the introduction and the location.

For the field core sample, it seems that the soil samples are mostly used for the organic analysis. But it does not see a more detail description in the laboratory test.

In the Section 3, it provides a more description on each datasets. Meanwhile, it gives a more detail about the analysis. Because the paper is a datasets study, it should simple the analysis. So, the authors can relative simple the analysis in this section.

A number of specific comments are provided below. I hope the authors find the comments helpful in preparing an improved manuscript that should be acceptable for publication.

Specific Comments

L1, the title can be simpler, e.g. A Comprehensive Dataset in a Heihe River Basin Permafrost Region (2011–2020)

L40, it should give the specify study area, not the whole Qilian Mountain.

L135, This study focus on the Heihe River Basin, it should give the permafrost area in this study area.

L156-157, The vegetation types are not used in this study, it seems not useful here.

L189, in table 2, the monitoring depth seems not the same. The reasons are for what?

L191, delete the Comprehensive.

L208, about the figure 3, it should be give the detail information. E.g. who and where the photo is from?

L237, delete the - before cm in this sentence "30–40-cm-long drilled core".

L238, delete the name of the laboratory.

L251 Figure 4 can be more detail for this photo.

L305 (PP systems, Amesbury, MA, USA), give the full name for the first time.

L461 seasonally frozen ground, permafrost, both could be as the frozen ground in this sentence.