

## ***Interactive comment on “Status of the Tibetan Plateau observatory (Tibet-Obs) and a 10-year (2009–2019) surface soil moisture dataset” by Pei Zhang et al.***

**Pei Zhang et al.**

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Dear Editor and Reviewers,

Thank you very much for carefully reviewing our manuscript and providing detailed and constructive comments. This has helped us to improve our manuscript significantly. The manuscript has been thoroughly revised and strengthened based on all the comments and suggestions made by both reviewers.

Major changes made to the manuscript are summarized as follows:

1. Additional information and detailed descriptions of the Tibet-Obs have been provided

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in Section 2.1 and Appendix A. In addition, several figures and tables related to the comparison between four upscaling methods have been moved to Appendix B to make the manuscript more focused on the description of generated 10-year dataset itself.

2. The descriptions of Mann Kendall trend test and Sen's slope estimate in Section 3.2 have been rewritten, and the 10-year trend analysis in Sections 4.2 and 4.3 have also been thoroughly revised.

3. Section 5 has been thoroughly revised to make it more readable.

4. Detailed descriptions of the ATI (Apparent Thermal Inertia) upscaling method have been provided in the Appendix B.4.

Supplementary data and document have been added to the dataset in the 4TU.ResearchData repository as summarized below:

1. The precipitation data (2009-2019) from two weather stations, i.e. Maqu (34°00'N, 102°05'E) and Shiquanhe (32°30'N, 80°50'E), has been included.

2. The upscaled soil moisture data produced by the four upscaling methods for a single year have been included.

3. The soil moisture data from three model-based products (i.e. ERA5-land, GLDAS Noah, and MERRA2) at the Maqu and Shiquanhe network areas for a 10-year period have been included.

4. Document of user information has been revised to include descriptions of monitoring sites and summary of previous applications using the Tibet-Obs data.

Please find the supplement document about our detailed response to each comment made by both reviewers.

We think that the revised manuscript has appropriately addressed all the reviewers' concerns and we hope that you can consider it for publication in Earth System Science Data.

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Sincerely,

Pei Zhang

On behalf of all co-authors

Please also note the supplement to this comment:

<https://essd.copernicus.org/preprints/essd-2020-209/essd-2020-209-AC1-supplement.pdf>

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2020-209>, 2020.

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