

Interactive comment on “Depth scaling of soil moisture content from surface to profile: multistation testing of observation operators” by Xiaodong Gao et al.

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The authors developed a CDF matching-based approach to estimate the profile soil moisture. The preliminary application of the approach over different climate zones (e.g. with a certain number of in situ stations) shows the promising results. I have only two main concern as follows:

Major concern: 1. The author indicated the validation and calibration periods specifically for the current scaling approach. On the other hand, it is not clear why the certain year was selected for validation, why the certain year was selected for calibration. Please, the author clarifies, for example, why 2012, 2013 selected for validation,

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instead of 2014, 2015? I'm also curious how the selection of different cal/val periods will affect the results.

2. For figure 5, you can find negative NSC. There is no further discussion in the paper to explain why. Does it imply a limitation for applying the current developed CDF matching-based approach?

Minor comments: See supplement.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2017-292/hess-2017-292-RC2-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2017-292>, 2017.