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Comment on hess-2021-2

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Community comment on "The International Soil Moisture Network: serving Earth system science for over a decade" by Wouter Dorigo et al., Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2021-2-CC1>, 2021

Here is my review for "The International Soil Moisture Network: serving Earth system science for over a decade" by Wouter Dorigo et al. This manuscript provides a comprehensive review of ISMN. ISMN is an important dataset for a range of research topics, and this manuscript is an excellent tutorial of the dataset. Therefore, I would suggest accepting the manuscript after some minor revisions:

- Figure 2: It is kind of difficult to quickly figure out which part of the word is still having active sensors. Therefore, I would suggest the author to visualizing the information on a global map.
- Section 2.2: It is unclear if the sampling volume differences of different sensors are considered in ISMN.
- Figure 6: Please clarify if the calculated representativeness error includes the multiplicative and additive biases due to scale mismatch.
- Line 325: a reference is missing
- Section 5.1.2: Dong et al., 2020 shows that, when sampled across a range of (sparse) sites representativeness error is random in nature. Therefore, when averaging across multiple sites, sparse sites can still accurately capture the *relative* accuracy of different soil moisture products.
- Line 510: Please also include Active and Passive Distributed Temperature Sensing (DTS) works here, which is also aimed to measure soil moisture with high spatial resolutions at low costs and perform soil moisture scaling analysis.