Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2020-407-RC3, 2020

Hydrology and Earth System Sciences
Discussions

Interactive comment on "The added value of brightness temperature assimilation for the SMAP Level-4 surface and root-zone soil moisture analysis over mainland China" *by* Jianxiu Qiu et al.

Clément Albergel (Referee)

clement.albergel@esa.int

Received and published: 22 October 2020

In this study, Qiu et al assess the performance of SMAP L4 DA system using 2 years of in-situ soil moisture profile observations at 2474 sites across mainland China. They then apply a random forest (RF) regression to identify the dominant factors (pre-selected by the authors) that control the spatial distribution of the data assimilation efficiency. This is an interesting study that could potentially lead to improvement in the SMAP L4 data assimilation system. I have annotated a pdf document with some suggestions as an attempt to help. In particular it would be interesting to try to justify more the choice of the studied dominant factors and then to discuss perspectives,

what can be built upon this study? Without such proper discussion I have the feeling that the conclusion of the study is a bit weak (but you may want to prove me wrong!) with outcomes we could have guessed before hand (e.g. precipitation is the dominant factor for explaining the skill of the OL results). Sincerely Clément Albergel

Please also note the supplement to this comment:
https://hess.copernicus.org/preprints/hess-2020-407/hess-2020-407-RC3-supplement.pdf

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2020-407, 2020.