Hydrol. Earth Syst. Sci. Discuss.,
https://doi.org/10.5194/hess-2017-705-RC4, 2018

Hydrology and Earth System Sciences
Discussions

Interactive comment on "Using satellite observations of precipitation and soil moisture to constrain the water budget of a land surface model" *by* Ewan Pinnington et al.

W. Dorigo (Referee)

wouter.dorigo@tuwien.ac.at

Received and published: 4 February 2018

This study is an interesting contribution of how satellite soil moisture an precipitation products can be used to improve land surface model estimates in data-poor regions. However, I have a few major concerns regarding the use of the ESA CCI Soil Moisture data. These have been adequately expressed by the reviews of Imraz Dharssi and Christian Massari, so I will not repeat them here. All these issues stem from the fact that absolute soil moisture values of the ESA CCI Soil moisture COMBINED product are strongly influenced by the climatology of GLDAS1-Noah soil moisture. A starting point for improving your study could therefore be to first look at metrics reflecting the

similarity in the temporal domain (e.g., correlation).

In your discussion about the differences in product skill between the South and the North (Figures 2 and 3) you mention that these products have lower skill in the south. How then can you explain the larger improvement and lower overall errors shown for the South in Figure 5?

Could you please indicate the version of ESA CCI Soil Moisture you have used?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., https://doi.org/10.5194/hess-2017-705, 2017.