

Interactive comment on “The impact of near-surface soil moisture assimilation at subseasonal, seasonal, and inter-annual time scales” by C. Draper and R. Reichle

I. Dharssi

I.Dharssi@bom.gov.au

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This is an interesting paper which demonstrates that assimilation of satellite derived surface soil moisture (SSM) measurements improves the soil moisture analysis compared to an open-loop control that has no data assimilation. I humbly ask the following questions:

1) A discussion of the practical applications of the research described by the manuscript would be very useful. Do meteorological reanalysis systems such as the Modern Era Retrospective-analysis for Research and Applications (MERRA) assimilate

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satellite derived surface SSM measurements? If not, what is the reason? Similarly, do Numerical Weather Prediction (NWP) centres operationally assimilate satellite derived soil moisture?

2) How does the skill of the open-loop simulation in this research compare to soil moisture analyses from the ECMWF ERA Interim? Would it be possible to provide values of temporal and anomaly correlation between model open-loop and ARS in-situ soil moisture? From figure 6, it appears that the model open-loop poorly captures the seasonal and inter-annual variations in soil moisture at the Little River site and I wonder if this is a common problem. L24P7986 says the site is Little Washita which I presume is a typo.

My comments should not be interpreted, in any way, as a criticism of the manuscript.

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