

Interactive comment on “Hourly soil moisture mapping over West Africa using AMSR-E observations and a satellite-based rainfall product” by T. Pellarin et al.

Anonymous Referee #1

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Reviewer's comments to “Hourly soil moisture mapping over West Africa using AMSR-E observations and a satellite-based rainfall product” by Pellarin et al.

Satellite microwave remote sensing observation is one of the most important technologies for regional soil moisture mapping, but the most current onboard satellite sensors for soil moisture research had designed 1-3 days local revisit period, this is challengeable for monitoring soil moisture dynamical range. The objective of this research is to provide an original and simple methodology for mapping surface soil moisture with a fine temporal and spatial resolution over large areas based on the rainfall accumu-

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lation product and soil microwave emission at C-band. This is a first research I read on temporal scale conversion issues of soil moisture mapping, it is also successfully applied in deriving high temporal resolution soil moisture product. Therefore, I recommend accept it for publishing after making a minor technical corrections. The specific comments

- 1)in API model, only an simple relationship between API and soil moisture has been deployed, the detail discussions about this relationship and error analyses are necessary;
- 2)in P4039-4040,the introductions on how to estimate the delta parameter are not enough;
- 3)the references on soil moisture retrieval from microwave remote sensing are not sufficient, please add more such as the one in “Journal of Geophysics Research, 108(D2), 4038, doi: 10.1029/2002JD002176, 2003” et al.;
- 4)the format of the reference list is not standard, capital letters and lowercase letters are missed somewhere, such as the ones in P4051L32-33, P4052L2-3, P4052L23-25;
- 5)The digit number in Figure4, Figure7, Figure8, Figure9 and Figure10 are not clear, the are not readable.

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