

Interactive comment on “On the use of AMSU-based products for the description of soil water content at basin scale” by S. Manfreda et al.

Anonymous Referee #2

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1) GENERAL COMMENTS

The authors of the manuscript are investigating the use of AMSU satellite datasets for characterising soil water contents for a basin in southern Italy. The manuscript is of overall substantial scientific significance and quality. However, some minor comments shall be addressed. Most of the comments are very similar to the ones of referee #1 (correcting mathematical formulation, usage of units, clarification of soil depth, adding spatial resolution, increasing readability of figures). Therefore, only additional comments are reported in the following.

2) SPECIFIC COMMENTS

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- Abstract, line 8-11: the year of the campaign should be reported somewhere around here.
- Section 4, page 5330, lines 22-24: you use the term SMVmod for an index derived analogously to SWVI. Why not name it SWVImod then?
- Tables 1 and 2: you present the “Spatial mean” in the tables. Is this the same variable as described in section 3.1, lines 19-20 (“mean SM”)? If so, I would name it the same way in the text and in the table.
- Table 4: why is the variable “p” given in brackets?
- Figure 7: you could advance the plot by providing dates instead of days of year or add precipitation to the plot. This would help interpreting effects of winter/summer seasons or the influence of vegetation.

3) TECHNICAL CORRECTIONS

- Abstract, line 7: should read “, lasting about three months”.
- Abstract, line 16 (and several times in the manuscript): “yr” should be replaced with “year”.
- Introduction, page 5321, line 2: should read “numerical weather prediction”.
- Introduction, page 5322, lines 10-14: change the word order to improve readability: “The launch of [...] in November [...], clearly indicates [...]”.
- Introduction, page 5322, line 28: explain the acronym “GEWEX”.
- Introduction, page 5323, lines 3-6: remove some articles of nouns: “The data hosting center “International [...]” with the financial support of ESA and it is operated by Vienna University [...]”.
- Introduction, page 5324, line 6: should read “analyses”.
- Section 2.1, page 5325, line 14: should read “constant within a 1-month”.

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- Section 2.2, page 5326, line 6: should read “also referred to as exponential”.
- Section 2.3, page 5327, line 13: should read “paid particular attention to the”.
- Section 3.1, page 5329, line 2: “12 a.m.” is midnight and “12 p.m.” is noon, check consistence with page 5330, line 8.
- Section 3.2, page 5330, line 6: use “mentioned reference fields”.
- Section 3.2, page 5330, line 10: use term “rain clouds”.
- Section 4, page 5330, line 19: should read “discussed in detail”.
- Section 4, page 5332, lines 5-6: simplify and correct sentence: “Maps clearly show that in the considered period the relative saturation patterns reflect the main [...]”.
- Section 4, page 5332, line 18: should read “thicker soils”.
- Section 4, page 5334, line 13: should read “Such results, [...], seem to indicate”.
- Section 4, page 5334, line 18: consider something like “EUMETSAT’s METOP-A” because the first term is the organisation, the second term is the satellite.
- Section 4, page 5334, lines 19-23: re-order phrases for easier reading: “This high temporal resolution is a fundamental requirement for [...], where the flood dynamics are very quick.”
- Section 5, page 5335, lines 1-2: decide between “sites of a river” or “sites of the river”.
- Section 5, page 5335, line 7: I guess you mean “raw data”.
- Section 5, page 5335, line 18: should read “as well as to less vegetated areas”.
- Figures 2 and 4: position the correlation annotation nearer to the edge of the box to increase readability.
- Figure 3: Annotation should read “by the DREAM model”.

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- Figure 6: The axis annotation of panel a) should read “AMSU SWVI”.

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