

Interactive comment on “

Potential of high-resolution detection and retrieval of precipitation fields from X-band spaceborne Synthetic Aperture Radar over land” by F. S. Marzano et al.

Anonymous Referee #2

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The paper is interesting and brings about new results in estimating rainfall fields from XSAR sensors. The authors succeed in demonstrating the value of their proposed method. However, a number of points need clarification before the paper be considered for final publication.

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Major comments

The applicability of high-resolution rainfall analyses with SAR imagery to improve over passive microwave estimates is far from being duly demonstrated. While the reviewer recognizes that new insights are provided by using any kind of sensor, the discussion in the Introduction on the problems of passive microwave estimates in view of SAR-based estimates is debatable and not exactly demonstrated by the work discussed in the paper. I would thus avoid expanding on this subject.

Moreover, the "incipit" on the assimilation at high resolution makes the reader think that SAR is going to improve over existing retrieval systems and methods. Well, this isn't true at present, given the development stage of the algorithms and also the orbit repetition time. So, please lower the expectations as it is only proper at this early immature stage.

The two cases are discussed at two different levels of detail. The second one over Italy is more or less completely described with figures and all the appropriate evidence. On the contrary, the first one is more or less sketched and needs reworking. For example, I might miss something, but Fig. 2, 3, 4 and 5 are never cited in the text. Why are they included?

The English of the manuscript needs reworking and is sometimes difficult to understand. The reviewer has tried to fix some of the problems (see minor comments below), but a complete fine combing of the text is absolutely needed.

Minor comments

- pag. 7454, row 14. "projected" is probably "planned". - pag. 7456, row 6-7. The two references need to be enclosed in the same bracket. - pag. 7456, row 19. GMT needs to be UTC. Same on all other occasions. - pag. 7456, row 22. "supports" needs to be "support". - pag. 7457, row 26. Instead of "the whole USA" write "Conterminous United States (CONUS)". - pag. 7461, row 17 and 19. "Eq.(3)" should be "Eq.(2)". -

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pag. 7462, row 1, 2 and 6. "Eq.(4)" should be "Eq.(3)". - pag. 7461, row 13. "accessing to the archive" should be "accessing the archive". - pag. 7461, row 24. "contributes" should be "contributions". - pag. 7464, row 2. "close to l'Aquila city" should be "city of L'Aquila". - pag 7473-7474. Iguchi et al. after Kummerow et al. Please fix. - pag. 7473, row 22. Space after "Propagation".

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 7, 7451, 2010.

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