

## ***Interactive comment on “Soil moisture retrieval through a merging of multi-temporal L-band SAR data and hydrologic modelling” by F. Mattia et al.***

**Anonymous Referee #1**

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General Comments: This manuscript provides a new technique on soil moisture retrieval with the combined L-band SAR measurements and the Hydrological models. The results demonstrated the significant improvement on soil moisture estimation and the advantage over the either single technique (SAR retrieval and model prediction). It is a new and the most promised technique and concept. The manuscript is well written and should be published. Specific Comments: 1) For study site, they were the cereal fields. On SAR retrieval part, the surface backscattering model IEM was used. How significant of vegetation effects was not described. It is important to demonstrate the vegetation impact is minimal. 2) It is not clear in the manuscript what grid scale were the TOPLATS and PROMET performed. It is important to understand the scale issue

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here since the soil moisture information from the filed measurements, SAR retrieval, and model performance are great different.

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Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 5, 3479, 2008.

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5, S2391–S2392, 2009

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