

Interactive comment on “Soil Moisture Estimation Based on Probabilistic Inversion over Heterogeneous Vegetated Fields Using Airborne PLMR Brightness Temperature” by Chunfeng Ma et al.

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Dear Referee,

Thank you for your valuable comments and suggestions for our manuscript. Your comments and suggestions are very helpful for improving our manuscript. We revised the manuscript item by item according to your suggestions. 1. We added new a subsection (3.1) to introduce the Bayesian PI. 2. The dependences of roughness on polarizations and incidence angles are really a challenge issue. We are considering removing the 2P strategy or revising after testing. This issue is undergoing revision. 3. The empirical

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parameters from Martens et al (2015) are directly used in our research site. This may result in errors. Although we made some measurements, it is not enough to fitting a robust relation between VWC and TB. So are considering removing the 2P strategy. 4. As you mentioned the impact of roughness on soil moisture estimation uncertainties, we reviewed the literature you suggested and revised the manuscript carefully. 5. The citation formats and figures of the whole manuscript have been revised carefully. 6. We are deeply touched by your so careful revision on the grammatical errors in the whole context. Your carefulness and spirit on scientific research is worth our study. We carefully revised the grammatical and editing mistakes point-by-point.

Overall, we thank your comments very much. We have finished revising the major part of the manuscript. The suggestion 2 is undergoing revision, we are afraid that we cannot upload the fully revised manuscript this time. But we will do our best to revise is as quickly as possible.

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