Geoscientific

Model Development
Discussions

GMDD

Interactive
comment

Interactive comment on "SMRT: An active / passive microwave radiative transfer model for snow with multiple microstructure and scattering formulations (v1.0)" *by* Ghislain Picard et al.

Anonymous Referee #1

Received and published: 9 March 2018

The work described in the paper, and the model made freely available, represents an important effort for the community because it will be possible to analyze and compare the behavior of different e.m. models for the snow. The paper is well written with exaustive credit given to the authors of the original theories and methodologies. I have few minor observations:

- The paper claims that SMRT work for the active and passive case, however nothing is said about the former one. Just something in the introduction and in section 4 "Limitations..." I think the active case should be expanded as for the passive case

- Several papers have been published by Tsang about DMRT with a scatter size dis-

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[Discussion paper]

tribution. For instance https://doi.org/10.1163/156939392X01156 . In my opinion they should be included in the discussion for completeness

- Liang et al. 2008 deals with passive remote sensing, not active as stated on page 2.

- Table 1 should be better arranged showing which components can be freely chosen and which one must be used with a given formulation

- Diagram in figure 2 is not clear. It seems a mix between a functional description and a flowchart, however cannot be followed as a flowchart and neither it is clear the relationship between the blocks. It should be rearranged.

Provided these minor changes I think the paper is worth to be published.

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Interactive comment on Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2017-314, 2018.