Response to Anonymous reviewer

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

The formulations in the paper are valid for both passive and active. In the results section, Fig 4 already included a computation for the active mode. We have added the calculation for Fig 5.

- Several papers have been published by Tsang about DMRT with a scatter size distribution. For instance https://doi.org/10.1163/156939392X01156. In my opinion they should be included in the discussion for completeness

We have included this reference in the section "On the equivalence of microstructure models" as follows:
"Though the approach of using a stickiness close to 0.1 seems more physical compared to an empirical scaling factor, it also has weaknesses. Natural snow is composed of grains with variable size, which more resembles a collection of spheres with a distribution of radii (i.e. poly-dispersed spheres). Such dispersion is important and generally leads to increased scattering compared to the medium with mono-disperse spheres having the mean radius of the poly-disperse spheres (Tsang and Kong, 1992). However, the analytical treatment of the ACF for poly-dispersed sticky hard spheres is tedious"

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

It is removed

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

We have added the information in Table 1 in parenthesis for each microstructure. We have also added separator between the different components which makes the Table easier to read.

- 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.

We have removed the flowchart aspect and kept the components aspect.

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