Referee comment on “Persistent, Extensive Channelized Drainage Modeled Beneath Thwaites Glacier, West Antarctica”

I appreciate the detail response of the authors. They have adequately addressed my questions. The addition of the Appendix further enhances the strength of the manuscript, especially the addition of Fig, B1 adds further clarity to the analysis. I must say the authors did good job to improve the readability of the manuscript, but I am sorry to say that it is not sufficient yet. Therefore, I still have some concerns and all of my concerns are basically around the comments that I made last time. Although, I am still not sure how robust this analysis is, but it seems convincing considering the limitations.

1. Flux-steady state: Where from the assumption comes that "For flux steady-state runs, meltwater production above each transect must equal the total discharge across the transect within 0.5%." Do you take it from some other paper or it's your assumption? Please provide detail justification.

2. The authors have taken an unconventional way to support the channelization beneath Thwaites glacier by comparing specularity content with model derived Rwt to. The approach is commendable, but simultaneously, being it bit unconventional (and ad hoc, as also author mentioned), a step-by-step clarification and discussion is required. I understand the authors have taken very conservative approach to match specularity with model, but the approach is still bit ad hoc and not easy to understand. The comparison conducted between Specularity and Rwt is extensive, and I appreciate it, but it is not clearly reflecting in text. I would strongly recommend the authors to extend this section. Also, include the cdf figure in the appendix (provided in response letter). Explain, what possible Rwt values you may get from the model run and then justify your choice of threshold. Without this progression, it is very confusing. If required, split section 2.4 into subsections and add more figures in appendix.

3. Another confusing part of the manuscript is absolute values of specularity and relative specularity. This is not clear what do you mean by these two specularity term. In addition, in the response letter, figure RC1, you showed a figure with specularity value up to 1. Is this absolute or relative specularity. In either way, this needs to be clarified. This is one of the important parts of the paper, but this severely lacks clarity.

4. The discussion part of the manuscript is very rich with various geophysical aspect, but except the discussion about Specularity and Rwt. I think there is ample opportunity to discuss about Rwt values, what can be its possible physical meaning, what they infer, whether this can be compared with other data, etc. The reason I am emphasizing on this is because this is a new approach and that's why it needs detail analysis and discussion. So far, it is vaguely convincing and incomprehensible.

5. One technical question: What do you change in the model to disable channelization? Can you provide a distributed Rwt figure for distributed only run, like Fig. 3c? Do

you use same threshold of Rwt of 0.95-1 for distributed only run for comparison with specularity content? It is not clear there what threshold is used (Figure 7).

I do not have any further comments on the rest of the manuscript. The paper has all the things to get it published, but only after the above concerns are adequately addressed and incorporated in the manuscript.