

The manuscript offers a compelling blend of electromagnetic modelling and radar data analysis in the context of Thwaites Glacier's subglacial drainage pathway. While the results hold promise for enhancing our knowledge of glacier subglacial hydrology, however it needs to be improved considering the suggestions below.

Some of the Major issues to be addressed, they are.

- If the manuscript aims to identify the subglacial water arrangement by eliminating alternative hypotheses, it is imperative that the comprehensive permittivity values for both water and the glacier bed cover the entire spectrum found in existing literature, thus reproducing the full range of reflectivity associated with these parameters.
- The paper primarily focused on the regional scale of Thwaites' downstream water system. However, it is imperative to acknowledge the broader applicability of the model for a more extensive catchment when considering its practical utility.

Minor comments:

- Line 25: Better to add more recent citations.
- Line 32: Missing citations
- In the introduction section where the objectives are outlined, it is important to include the potential applications of the model to other catchments, thereby emphasising its versatility beyond the specific case of Thwaites Glacier.
- Providing a dedicated "Study Area" section, rather than including it in the introduction, would offer a more comprehensive understanding of the research area.
- Additionally, separating the "Results" and "Discussion" sections would enhance the clarity and structure of the paper. It would improve the presentation if all figures and tables were enclosed by borders for a more organized and visually clear layout.
- In the conclusion section, it would be beneficial to provide an overview of future work, offering the potential research directions and developments to be pursued.