

Interactive comment on “The transferability of adjoint inversion products between different ice flow models” by Jowan M. Barnes et al.

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We thank Cyrille Mosbeux for the detailed and constructive review, which will help us to improve our manuscript. Responses to specific and technical comments are included in the supplement.

To address the general comments in the review, and those of Referee #1, changes are being made to the manuscript as follows:

- Addition of more references to relevant sections of the appendix, along with summaries of the information contained within where appropriate, to increase clarity in the main body of the text.
- Addition of a new section to the appendix, giving more detail on the choice of regu-

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larisation and displaying relevant L-curves.

- Addition of experiments in which all inversion products are used in ISSM and STREAMICE for time-dependent simulations. These experiments have already been run, and the results are available to be added to the manuscript.
- Expansion of the discussion to give more detail on comparisons being made to other studies, and the limitations of these comparisons, leading to a tempering of conclusions regarding the success of transferability.
- Editing of the abstract and introduction to reflect the revised tone of the conclusions, and temper the expectations of the reader.
- Merge section 5.1 into Appendix B, and summarise in the main text with clear reference to the appendix. We conclude that the diagnostic results are not a good indicator of time-dependent performance, which is worthy of note thus should be kept in an appendix, but this section in its current form seems to confuse the narrative and take some attention away from the main results (particularly based on the comments of Referee #1).

Please also note the supplement to this comment:

<https://tc.copernicus.org/preprints/tc-2020-235/tc-2020-235-AC2-supplement.pdf>

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2020-235>, 2020.