

Interactive comment on “Significant submarine ice loss from the Getz Ice Shelf, Antarctica” by David M. Rippin

Anonymous Referee #1

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In the manuscript, the author examines two repeat radar sounding profiles over the Getz Ice Shelf in order to estimate ice shelf thinning rates and patterns across one of the most rapidly changing portion of the Amundsen Sea Embayment. Although the pattern and amount of melting experienced by this ice shelf is of great interest to the glaciological community, the analysis in the manuscript suffers from two major issue which make its results insufficient to interpret or assess.

The first issue is that the author does not use an ice sheet model or even simple calculations to separate the relative contributions of dynamic thinning and basal melting to the observed change in ice shelf thickness. Without this kind of supporting analysis it is not possible to interpret the cause, context, or nature of the observed change.

The second major issue is that the author does not place sufficiently place his results

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in the context of ice-shelf melt-rates derived from satellite altimetry data. This is critical for validation of the thinning values, for identifying what is novel in the radar-based observations, and for interpreting what the observations add to current understanding of the Getz Ice Shelf.

Until these two fundamental issues are addressed, it is not possible to provide a more complete assessment of the author’s writing and results.

Interactive comment on The Cryosphere Discuss., <https://doi.org/10.5194/tc-2018-163>, 2018.