

Responses to editor's comments

We thank the editor for careful review and the following comments.

L31: I find the acronym AIS for Amery Ice Shelf quite inconvenient given that it is the same one used for Antarctic Ice Sheet. I suggest considering something like "AmIS" or "AMIS" to disambiguate.

To the best of our knowledge, "AIS" has been used for Amery Ice Shelf within almost all Amery papers for a long time (e.g., Craven et al., 2009; Galton-Fenzi et al., 2012; Herraiz-Borreguero et al., 2013). We thought it was a bit confusing to propose a new acronym in this paper, so we would like to continue using the acronym "AIS" from the previous Amery papers.

L510: dynamical simulations => dynamic simulations

We thought dynamic is used to describe something is changing (i.e., non-static), while "dynamical" refers to something involving dynamics. We thought "dynamical simulations" (as distinct from thermal simulations) would be a slightly better expression for "simulations of ice dynamics" here.

L696: dynamical regime => dynamic regime

Thanks for this suggestion. We thought "dynamics" would be a more direct expression in this case. We would modify to:

"In general, the thermal structure of ice shelves influences ice rheology and therefore also the ~~dynamical regime~~ dynamics (Humbert, 2010; Budd & Jacka, 1989)."

Correspondingly, we also modified the wording at L788,

"It is close to zero over the ice shelf, and thus has very little impact on the ~~dynamical regime~~ dynamics within the ice shelf."

We also noticed in passing that we have some inconsistency in using "dynamic" or "dynamical" when referring to the boundary conditions. For consistency, we used "dynamic boundary condition" throughout the manuscript.