

Interactive comment on “Getting around Antarctica: new high-resolution mappings of the grounded and freely-floating boundaries of the Antarctic ice sheet created for the International Polar Year” by R. Bindshadler et al.

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Received and published: 11 May 2011

Ian,

The comments made on our submitted paper have spurred a major revision that addresses all the posted concerns and results in a much stronger presentation of these two ASAIL products. The major changes are: • A new Introduction that avoids confusing some of the readers that this paper was about the penultimate ASAIL goal of quantifying Antarctic discharge (it is not!), but also explains the value of the grounded

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ice boundary and hydrostatic line to the broader glaciological community. This is done by saying less about ASAIL and its motivation and more about the grounding zone; • The discussion of the grounding zone acknowledges the different boundaries that have been mapped by different methods (nobody really maps the grounding line, in part because it is constantly moving), defines our “grounded Ice boundary” as one tied to the presence of grounded ice features, and defends the value of this boundary as an expressed feature of the ice dynamics, that separates ice that feels the bed enough to change the shape of the ice sheet in response to basal stresses from ice that doesn’t; • Complete new sections presenting quantitative analyses of accuracy for the position, elevation and thickness. The largest part of this new analysis is the inclusion of BEDMAP-compiled data. We found hundreds of intersections between BEDMAP and ASAIL and used them extensively. You will see many new figures that present the comparisons and tables that give the quantitative results.

Regards, Bob

Interactive comment on The Cryosphere Discuss., 5, 183, 2011.

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