

Interactive comment on “Future Antarctic bed topography and its implications for ice sheet dynamics” by S. Adhikari et al.

Anonymous Referee #1

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This manuscript reports important results of an analysis undertaken to understand the importance of viscoelastic rebound effects on the well-known problem of predicting the Antarctic Ice Sheet's response to future climate change. The study comes up with two important conclusions which the community will want to know:

1. Opposite to the prevailing prejudice, the future (simultaneous) short-term crustal rebound behaviors will have a far more important impact on the ice-sheet's future behavior than the accumulated long-term rebound that is underway from past changes.
2. Rebound effects tend to interact with ice-sheet driving stress and grounding line controls in a way that tends to stabilize the ice sheet. The magnitudes are not large in the current estimates, but even small changes in grounding line position can have large, amplifying consequences.

C13

I have no major comments other than to say that the paper is well written (modulo a need to have a good copy edit), the concepts are clearly explained and the figures expressive.

Things that I would suggest correcting:

page 202 lines 7-8 "ad nauseam" –probably shouldn't say this in reference to a description in another paper

page 209 line 3 "propertional"

page 214 line 1 "pervasive"

Interactive comment on Solid Earth Discuss., 6, 191, 2014.

C14