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The Cryosphere Discussions

Interactive comment on "Longitudinal surface structures (flowstripes) on Antarctic glaciers" *by* N. F. Glasser and G. H. Gudmundsson

Anonymous Referee #1

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1. Around line 21, where the sentence begins with Ng and Conway, I really lost track of what was being discussed. i.e., what do internal layers in radar profiles have to do with surface stripes? I also couldn't visualize what "folding" was being referred to in line 26 (and in the following paragraph.. I guess this is on page 3087 and 3088... I note that the line numbers restart at each page (makes it hard for the referee...)

2. "Top" of an ice stream (last line on 3088) does this mean surface or the "confluence" where an ice stream first begins...

3. It would help (in the introduction) if a cartoon or schematic could be shown that would help the reader more easily visualize the difference between mechanisms 1., 2., and 3. (on page 3089)

– I'm not sure if this is a meaningful comment, but I'll add it..: Is it possible (as I look at Table 1) that there are also examples of "flow stripes" being seen on the bottom of ice shelves (e.g., I think that one of the early BAS studies of the Ross Ice Shelf identified "marine ice" stripes that existed on the Ross Ice Shelf radar data... I don't remember the reference, but it was displayed in the 1978 or 1979 issue of J. Glaciol. on the "dynanics of large ice sheets"...) The point is that only ice shelves have this additional "free surface" and thus one could ask whether such stripes or other longitudinal features are witnessed there in addition to the many observations of them on the upper air surface of glaciers and ice sheets...

4. The figures are very beautiful!

5. Would it help (in maybe one case) if a surface velocity field were also shown (e.g., from the recently published Rignot et al. IPY "reference surface velocity" data that is just now being released...)?

I thoroughly enjoyed this paper and was fascinated by the meticulously drawn flowline features that were shown in the figures...

Interactive comment on The Cryosphere Discuss., 5, 3085, 2011.