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Interactive comment on "A complete glacier inventory of the Antarctic Peninsula based on Landsat7 images from 2000–2002 and other pre-existing datasets" *by* Jacqueline Huber et al.

Anonymous Referee #2

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General

In this manuscript the authors present and describe a very nice dataset as the so far most complete glacier inventory of the Antarctic Peninsula. This is very useful and will be used as baseline data in coming assessments of the sensitivity and responses of AP glaciers to climate changes, based on monitoring, modelling and remote sensing. The paper is in general very well written, clear and easy to follow. I am not able to suggest any improvements of the language. It is nice to see that the inventory is easy accessible at the GLIMS website. The paper can be published nearly as it is but the authors should go through the paper and clear up the more specific comments I have below.

Specific comments.

It is nice that they have a fairly large section 6 on Uncertainties, but still I think they could have done more on that. Especially the volume estimates should have been given with error bars or +-. There must be fairly large uncertainties in ice thickness estimates and thus also in the volume estimates. In Table 3 they give exact numbers on volumes in each sector, but these estimates must have a fairly large uncertainty. Also in Table 2 were they give an example of a glacier in the inventory they give very exact numbers. How is the position of the point where coordinates are taken selected ? They give the position with six decimals. Thus it is a point derived from a GIS tool, but still the location selected must follow a definition. In the same Table 2, and I suppose thus for all glaciers in the inventory, they give area with three decimals (68.911 km2) and the same with elevations given on mm scale. This does not make sense to me. Mean thickness is given as 191.427 m so again on mm scale. Thus error bars/intervals would be informative together With s short comment on the uncertainties.

In line 123 they write 1590 glacier catchments while in line 209 it says 1589 In line 292 it says that the volume of AP glaciers is 33 770 km3, but in Table 4 it says 34 590 km3. The total glacier area is given as different numbers: in line 123 it says 96 982 km2, in line 238 it says 95 273.2 This number 95 273 is also listed in Table 3 and given as the total area in the conclusions in line 481, in line 323 it says 93 767 km2, in line 358 it says 94 743 km2. They should go through the numbers so it is consistent throughout.

In line 387 they refer to Supplement 5. But there is no Supplement 5 in the file I can find. The figures with map plots, Figs.1, 2, 3 and also Supplement 4 are all nice and give some good information, but in a printed version they will be almost impossible to read. I had to zoom in my pdf-file to 300 %. Then it is fine. Most users of the inventory will work on digital versions so maybe this is fine.

The other figures present data from statistics and are to some extent informative but give few surprises. It is fairly obvious and as expected that in general larger areas give

larger thickness, steep glaciers are thinner than less steep glaciers, and thus also that large glaciers in general has a lower slope than small.

Fig. 8. a. This figure is reproduced in grey-scale. It is almost impossible to separate out the information between the three categories; 1) outlines excluding rock outcrops, 2) outlines including rock outcrops and 3) marine terminating and ice shelf tributary glaciers. It is only in the elevation range 200-500 meter that there is any notable difference. Otherwise they overlap. I suggest that they only show one curve for outlines excluding rock outcrops in addition to the bedrock curve.

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