

Interactive comment on “Quantifying mass balance processes on the Southern Patagonia Icefield” by M. Schaefer et al.

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Dear Professor Pelto,

thank you for your suggestions for additionally evaluations of our surface mass balance simulations on the Southern Patagonia Icefield. Some of your suggestions seem to be more meaningful to us than others. For example we do not believe that the comparison to a purely empirical model like the degree day model will give us new insights into the performance of our model.

Concerning the precipitation trend verification: as you already mention, the problem of a comparison with the two cited studies is the different time span. The significant trend in average accumulation in our data of 0.043 ± 0.009 m/year in 1975-2011 for example

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changes to 0.033 ± 0.028 m/year for 1975-2000 which is not significant anymore at the 5% level.

Regarding the smaller land-terminating glaciers: a bit of care has been taking when interpreting this percentage area losses. Since the area of the land-terminating is much lower than the area of the calving glaciers, the overall losses from the land-terminating glaciers are still much lower. The glaciers discussed in our paper sum up to 9163 km^2 which is 75% of the area of SPI.

Once having received the comments of the reviewers, we will make the final decisions on which of the suggested modifications we are thinking are really improving the quality of our analysis.

Best regards, Marius Schaefer

Interactive comment on The Cryosphere Discuss., 8, 3117, 2014.

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