

Interactive comment on “Petermann Glacier, North Greenland: massive calving in 2010 and the past half century” by O. M. Johannessen et al.

Anonymous Referee #3

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General comments:

This paper presents a valuable data set of Petermann Glacier terminus position since 1950s. The documented results are very interesting, but not enough. The paper lacks some scientific analysis of the glacier behavior or a comparison study with other similar outlet glaciers in North of Greenland.

Specific comments:

They mention that perhaps the absence of sea ice and warmer fjord temperature or strong wind might have triggered the calving event, but they don't provide any data to support this statement. How was the sea ice coverage in previous years? Has the basal melt increased during the last decades? To make any conclusion they need to

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show additional available climate and oceanic data. Furthermore, to put the changes of Petermann Glacier into perspective in respect to other outlet glaciers in Greenland, it is necessarily to present some data on glacier velocity, shelf thickness and ice discharge from the grounding line.

Calving front position in figure 3 represents the furthest point of the glacier front. I found it a bit confusing since in figure 3, it looks like that the glacier has been advancing between 2007 and 2008 but in reality the shelf is getting smaller (figure 2). It is better to show the average shelf length at each year instead of the furthest shelf front.

I agree with the comments made by the two other reviewers (RC C39, RC C83) and M. Pelto and will not repeat them here again.

Interactive comment on The Cryosphere Discuss., 5, 169, 2011.