

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

**T. Scambos (Referee)**

teds@nsidc.org

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The paper is an appropriate topic and potentially interesting. The several reviews already submitted offer many ideas to build upon.

M. Pelto lays out an approach to expanding and improving the paper that focuses on a mass-balance perspective. This is completely valid, but another approach that would lead to a worthwhile study would be one that aims to understand the timing and cause of the calvings. What this primarily requires are more images, and a homing in on the timing and process of the major calvings.

As to finding more images: using the EarthExplorer search tool at USGS, I was able to see 3 or 4 clear-sky MSS images spanning the period 1976–1977, and I believe they

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showed an advanced ice front (Path 49, Row 1, 18 April 1976, 6 May 1976, 1 May 1977). <http://edcsns17.cr.usgs.gov/NewEarthExplorer/>

SPOT Sirius search tool also provided several images, on the order of 10 or 12, spanning 1991-1997 <http://www.spot.com/web/SICORP/1249-sicorp-sirius-spot-image-online-catalogue.php>

What I recommend is to isolate a few of the calving events and see if you can bracket the dates of calving better. Also examine climate/weather characteristics of the period surrounding the calving events. Are they always late summer (as the 2010 calving was?) Are they always following some particular climate pattern, e.g. negative AO, or unusual sea-ice-free conditions?

It is possible to do a lot more, and at least rounding up more images appears to be easy; you now have several ideas of how to proceed. I would say that a climate cause of calving approach would be fruitful, but Mauri's ideas outlined earlier should also be incorporated.

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

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5, C109–C110, 2011

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