Petermann Glacier, North Greenland: massive calving in 2010 and the past half century
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General comments:
This paper presents some interesting results from calving records spanning 1959-2010. While the results are intriguing, the paper lacks any real analysis and reads more like a report of observations than a scientific paper.

Specific Comments:
The abstract concludes by posing an interesting line of study: "...this event supports the contention that the ice shelf recently has become vulnerable due to extensive fracturing and channelized basal melt." I was interested in reading more about this result, but didn't really see it mentioned again.
Can the authors look at the distribution of rifts and flow speed estimates to see if advection and/or growth of rifts matches the quasi-regular calving chronology?

The introduction states that the "glacier velocity and terminus position have been considered to be relatively stable", but then you outline a pretty cyclic behavior of calving (punctuated by the 2010 event). It's likely that the cyclic nature of calving is 'stable'.

Typological comments:
Abstract:
I'm not sure the results presented here are entirely new, since others have written about Petermann calving variability
line 3: glacier (not glacial) ice
line 4: longest (not long)
ice tongue (not shelf)
lines 6-7: delete retrospective – it's redundant
line 8: write >100 km^2 instead of 100+ km^2.
line 9: Give the months during which the calving event occurred. Surely you know it retreated by comparing a few image pairs, so let the reader know too.
line 11: delete "has" (the terminus position in 2010 retreated...)
line 11: This sentence is a bit confusing. How about: "The terminus position in 2010 retreat ~15 km behind the extent of previous observations."
line 12: "massive" is a bit subjective. How about: "Whether the large calving event in 2010..."
line 13: is "global" really different from "ocean" warming? I think you mean atmospheric vs. ocean warming.
line 14: Has "fracturing" increased, or are these events just episodic?

Introduction
lines 16-17: The first sentence is indirect and hard to follow.
line 19: This sentence is a bit muddled. We usually consider the extent of the glacier (and its 'mass') as ending at the grounding line. Saying that mass loss of outlet glaciers occurs primarily from basal melting of floating glacier ice is confusing.
line 23: delete the "+" after century (if you want to say that the timescales are often longer than a century, just write it out).
Line 1 (page 2): delete "in the melting" (redundant)
line 4 (page 2): what does "previously" refer to?
Line 10: missing period after references

Data and methodology
line 22: the first sentence is awkward. Consider deleting “repetitive”
line 24: “intermittent” might be a more suitable word than “sporadic”
line 14 (page 3): the images were consistently “co-registered” not geo-referenced

Results
line 24: no value listed “~km”????
line 25: extent (not envelope)
line 26: Again, if referring to a number greater than 100, write >100 km2, not 100+ km2
lines 1-6 (page 4): combine these two paragraphs and reword one of the sentences so that they are not so similar.
line 15: incorporate the plot results in to the text, don't just insert something that looks like a figure caption (“in order to visualize...here we plot...”)

Discussion
line 3 (page 5): This sentence (especially “business as usual”) is a bit too informal/casual
line 4: “gigantic” is subjective
The discussion needs a lot more analysis!

References
Add Rignot (Jglac, 1998): Hinge-line migration of Petermann Gletscher, north Greenland, detected using satellite-radar interferometry.