

## ***Interactive comment on “Persistent Tracers of Historic Ice Flow in Glacial Stratigraphy near Kamb Ice Stream, West Antarctica” by Nicholas Holschuh et al.***

### **Anonymous Referee #2**

Received and published: 6 July 2018

This paper is concerned with observations of an unconformity in englacial layers in the onset region of Siple Coast Ice Streams and their interpretation in the context of the ice flow history of that region. To my understanding the analysis is sound, and the interpretation provided by the authors is supported by the observations presented.

My two main points (detailed below) are relatively minor, and concern primarily the organization of the paper and the writing style. Overall, I find that the manuscript is solid, and I support publication provided my comments are addressed.

Main points:

- 1) It seems to me that the conclusion that the tributaries of the Siple Coast Ice Streams

C1

have remained stable in direction during periods of sustained grounding line migration is an important result, which is overlooked throughout the paper and very briefly discussed at the end of the Conclusions sections. Given that very little is known about the dynamics of ice streams and their tributaries, I would encourage the authors to stress this conclusion and to make it front and centre of the Results and Conclusions sections.

2) The text is very succinct, at times to the point that it is hard to follow (a few instances are indicated in the minor points). I would recommend that the authors revise the text in this light. Further, I find that the figures are somewhat disconnected from the text, while they could be used to support it and clarify the writing in a much more effective way.

Minor points:

- page 5, line 29: what do the authors mean with "static flow fields"? Steady (no change in time), perhaps?
- page 6, line 12: Figure 3C is not the right figure
- page 6, line 27-30: here you use the present-day configuration of the blue ice region to reject one formation mechanism, but it's unclear to me how/ under what assumptions this applies to the past. Can you expand on this?
- page 7, lines 1-7: in my opinion, this paragraph is barely understandable. I recommend that the same description is rewritten with closer reference to the supporting figure, and disentangling interpretation from observations. Also, the notation " 3x, 5x, .. " is highly confusing
- page 7, line 17: " Steep slopes .. " it might be obvious, but I would briefly explain why steep slopes over blue ice enhance the winds
- figure 1d: what is the colour scale?

C2

