

Interactive comment on “Younger Dryas ice-margin retreat in Greenland, new evidence from Southwest Greenland” by Svend Funder et al.

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Response to referee Davis Ullman. We are grateful for these comments and will address them below – and in a revised manuscript. Response to specific points:

Inheritance: In our response to Nicolas Young we have addressed some of the issues raised here. In short, we still feel that a cluster of ages, also in bedrock, should give a good estimate of the age for deglaciation at a site, but will discuss multiple interpretations in the text.

Ice retreat during YD: Our data suggest that the ice margin had retreated to the coastal sites by mid-YD (Buksefjord, Avigaat, Paamiut) or late-YD (Ravns Storø). The Fiskebæset trough was largely deglaciated during the Allerød, whereas the age un-

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certainty in Sermiligaarsuk is too large to be meaningful. In the revised version we will make sure not to overstate these conclusions.

Lack of YD readvance: We acknowledge that we need to be more clear that lack of evidence is not evidence for absence. The features previously interpreted as evidence for YD re-advance/long-lasting stillstand, such as moraines and grounding zone wedges on the shelf, are dated mainly by reference to the ice core temperature record, as noted in the reply to Richard Alley. We cannot exclude the possibility that the Fiskebanke moraine in our area could date to the early-YD. However, in the northern end of this moraine belt, the older Hellefisk moraine is considered to be deglacial and dated to mid-YD times (Hogan et al. 2016), implying that neither the Hellefisk nor the younger Fiskebanke moraine would reflect initial YD cooling.

Bedrock surface: We will add more information about the nature of the bedrock surface at our sample sites in the revised manuscript to underline that the area was subject to glacial erosion. See also response to Nicolas Young. However, it should be noted that the bedrock surfaces are affected by postglacial weathering. We have not accounted for that in the calculations as we cannot estimate the amount of erosion. If we could account for the postglacial weathering the ^{10}Be ages would be slightly older.

Technical Comments: Site averages: Given the small number of data points from each site we have calculated the straight mean and standard deviation on the clusters from each site.

Specific comments to passages in the text: Thank you for reminding us. We agree with these suggestions and will reformulate and clarify these passages

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