

Response to Associate Editor Arjen Stroeven

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### General comment

Dear Dr. Cartelle,

I am happy to recommend publication of your manuscript in Earth Surface Dynamics pending minor editorial revisions (mostly to your figures). Please consult the annotated manuscript that I appended.

Best wishes,

Arjen Stroeven

We thank the associate editor for the detailed revision of the manuscript. We have modified the figures accordingly and made the appropriate corrections to the text. We have addressed all of the specific comments below and we have included the line numbers of the tracked changes version of the revised manuscript.

### Specific comments

In figures: Km = km

This correction has been made in the scale bars of maps from figures 1, 3, 4, 5, 6, 7, 8 and 9.

Fig. 1: the unit is "m a.s.l.", add zero

Units (m above sea level) and zero value added to the topography scale bar.

L97: ~~Previous research~~ (Joon et al., 1990) suggests...

Correction made (Line 97).

Table 2: The scales are hard to read on some of these. Put an opaque or semi-transparent box behind them.

A semi-transparent white box has been added behind the scale bars.

Figure 2: explain "bpsbelow", add s to map in caption

The word "bpsbelow" was a mistake, it should read m below LAT. It has been corrected and added to the caption. The caption has also been corrected.

L177: I'm not sure where Table 2 is?

That is a mistake, it should be Table 1. It has been corrected. (Line 177).

Figure 4 caption (L186), lines = seismic profiles

We have changed "lines" for "seismic profiles" in the caption of figures 4 and 7.

L221: indicates, also following occurrences- reserve the use of "suggest" for authors, but not for evidence. Use indicate or some other verb.

Thank you for the suggestion, we have changed "suggest" for "indicate" through the text when the verb is referring to evidence (Lines 221, 325, 327, 338, 358, and 487).

Figure 5: ...in panels in other figures, you've done away with a scale in the interpretative map?

That was an error when exporting the figures to PNG. It has been corrected in figures 2, 4, and 6.

Figure 6: lamiane = laminae

Change done.

Figure 7: HKZ4-BH04

Correction done.

L363 and 560: 5- Discussion and 6- Conclusions.

Changes done.

Figure 8A: Explain the questionmark in the caption. Also why is the Sandur unit much more extensive than the outwash fan in the profile?

The extension of the sandur unit has been corrected to match that of the outwash fan. The question mark has been removed, as it is not needed.

Figure 8A: correct with sea level at -10 LAT?

Yes, we are illustrating a phase of the transgression given that the exact position of the sea-level during the highstand is under discussion. To clarify this, we have modified the caption, now it reads: "Conceptual model of the infill (following transgression from MIS 6 to MIS 5e, but before the highstand)" (Line 338).

Figure 8B: Explain the reasons for the question marks in the caption.

Question marks indicate areas of uncertainty, it has been added to the caption (Line 440).

Figure 8B: the "prime" in X' is hard to see. Move slightly lower.

Correction done.

Figure 8B: reference which of the Fig 1 interpretations of the ice margin is shown here.

References added to the caption: "(B) Comparison between the previously inferred maximum Saalian ice sheet extent (dashed line, Hijma et al, 2012, Batchelor et al., 2019)" (Line 439).

Figure 8 legends: I'm not sure the black works for glacial till? Is everything that is not "basin" or "ridge" or "channel" glacial till??

Yes, the grey/black colour is difficult to discern. We have changed the colour of the glacial till in this map (Fig. 8B) but also in the previous figures (Figs. 1 and 3), to keep it consistent.

Figure 9: Ice=ice, braid=braided-river?, Water-flow direction. why has the ridge decreased in size between panels B and C?

Changes done. The change in the size of the ridge was a drawing error, it has been corrected.

Figure 9C: (ca. xxx ka)?

We cannot add a timing for this stage as the chronology for the Eemian transgression and highstand in the North Sea is under discussion and, therefore, adding a time would require extensive discussion.