

Authors response

We are thankful for the suggestions and implemented them all.

*line numbers with respect to track-changes version of manuscript

L7: add 'the' and 'core' here: '...throughout the 2663-m core, ...'; consider removing 'setting' for clarity; add comma after 'stream' (or 'setting' if you choose to keep it)

L16-17: The second half of this sentence is too vague to understand its meaning. What about the 'even older ice from the Eemian' agrees with the microstructural data?

L80: the choice of 'erect' as the verb here sounds odd; consider using something like 'construct' or 'build' here instead

L93: It's uncommon to use 'lower' as an adjective for 'width'. Consider using 'smaller' or 'narrower' for the upstream width here.

Figure 1 caption: Should be 'derived from' here; add comma after May 17

L136: either remove 'so far' or change 'were' to 'have been' to keep the same tense

L146: I don't think 'e.g.' is correct here because you are giving a further example of a noun just before 'e.g.' Either remove it, or add something like 'physical properties' just before it.

L174: It's not clear what you're referring to when you state 'We here extend this to DEP data...'. Extend what?

L188: Use commas instead of parentheses between the authors and publication date for the references within parentheses here.

L194: It would be helpful to restate which records are 'aligned' here to remind the reader after the previous sentences describing the methodology references.

L198-202 (and Figure 2): It would be helpful to define the GI acronym/naming scheme somewhere in here.

L219: 'strengthens' should be singular here

L257: remove extra ')' here

L229: 'Despite a high sampling resolution of measurements up to every metre in this depth regime...' would be a clearer way to state this

L234-235: Wouldn't smaller grain sizes give you more grains and their c-axes to measure?

L239: reword to something like: 'At the depth interval of 2608-2618 m, crystals are several centimetres in length (see section 3.4), and therefore do not have a sufficient number of crystals to measure in the samples. We combined data from these samples with that from six adjacent samples to yield suitable statistics with several hundreds of data points.'

L243: Stay consistent with units here. In the Methods section, you describe the samples at 92 x 70 mm

L244: Within the text, refer to Figures without abbreviation, and abbreviated when in parentheses as a reference.

L251: move ', respectively,' to after the reported eigenvalue values here.

Figure 7 caption: I think you mean 'extend' instead of 'prolong' here.

L343: I think you mean 'for example, non-basal plane deformation is well known for quartz...' here.

L344: add 'is' before 'rarely'

L391: capitalize 'glacial' here

L403: change the semicolon to a comma

L447: 'comparable' should be 'comparably'

L493: either 'In both cores,...' or 'At both core sites,...'

L496: capitalize 'glacial' here to be consistent

L521: change the semicolon here to 'and'

L589: I think you mean 'extend' instead of 'prolong' here too.