The Cryosphere Discuss.,
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The Cryosphere Discussions

Interactive comment on "Improved landscape partitioning and estimates of deep storage of soil organic carbon in the Zackenberg area (NE Greenland) using a geomorphological landform approach" *by* Juri Palmtag et al.

Anonymous Referee #1

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This well-written manuscript depicts a research project studying the carbon and nitrogen stores by applying landform partition in a deglaciated valley in NE Greenland. This study involved well-planned soils sampling scheme, well-defined methodology. The most exciting part of this study is that it was carried out in exactly the same area by other researchers using different approach. Thus, the researchers in this study be able to compare the validity and limitations of the GLC and LCC approaches in assessing the C & N stores in such a high relief area affected by permafrost. The results from this study would contribute to our understanding of the relationships between C & N stores

and landscape dynamics in alpine environments and recently deglaciated areas.

References listed are adequate, all figures and tables well-done.

The quality of the manuscript and the scientific merit of the study warrant its worthiness to be accepted by Cryosphere.

There are some specific comments for the authors to consider.

P 4. L 22. "time or". Isn't time part of the logistical problem?

P 6. L 7-15. Materials in 2 glacial moraines (lateral and end) deeper than 100 was considered as "till". Since soils sampled from 0-100 cm in both landform formed in moraine, the parent material of these soils is moraine. Then, why call the portion below 100 cm till?

P 6. L. 31-32. C stores reported for 0-300 cm in small lakes. Not clear if the whole 300 cm includes both water and sediment?

P 7. L 37. "importance of". Would it be better say "effects of" or "important role of"?

P 8. L 25-27. Consider change "surface wetness" to "drainage" and permafrost table" to "depth of permafrost" or "active layer thickness".

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