

Interactive comment on “Short communication: a new dataset for estimating organic carbon storage to 3 m depth in soils of the northern circumpolar permafrost region” by G. Hugelius et al.

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The paper by Hugelius et al. is an extension to the paper already published in ESSD in 2013 (Vol.5, 3-13) and focuses on the inclusion of the 100 to 300 cm layers into the Northern Circumpolar Soil Carbon Database. The paper already published earlier in 2013 contained much of the information needed to understand the sampling procedure, the analytical process as well as the mapping exercise and the related uncertainties. The authors have chosen the right format in reporting on these new results in a short communication and referring to the already published paper. This short communication is of major importance not only for the permafrost scientific community, but also for the

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whole climate science community, which has been eagerly waiting to be able to use the updated database with the opportunity to use the numbers already outlined in Tarnocai (2009) this time in a spatially distributed manner. The paper is very well written, clear, well organized and echoes to Hugelius et al. (2013) in a consistent manner. In short, the dataset is very significant and I strongly recommend publication. I have only a few minor concerns that are outlined below:

1. I realize that there are few stratigraphic columns with reasonable vertical sampling density in yedoma areas, but the authors could have included it in their update. They are some of the best specialists of yedoma (see Schirrmeister et al. 2013) and often they have collected full cryostratigraphic columns in association with the upper 3 m (e.g. Schirrmeister et al., 2002). The procedure would certainly differ from the 0 to 3 m mapping exercise, but it could have been worthwhile to add it here. I am guessing that the authors might be planning another short communication solely focused on yedoma. This is a reasonable strategy, but if the short communication is focused on the data alone and published in a journal like ESSD, it might be a bit short. I do not think, however, that this is a fundamental flaw of this paper, rather the sense that there was an opportunity to add to it.
2. I would appreciate seeing a map of the 2-3 m pool possibly next to a map of the 0-1 pool. This would not dive into the data, but would simply provide context, as it was done in Hugelius et al. (2013)
3. This comment is relevant to this paper, but also to Hugelius et al. (2013): The authors describe fairly well the heterogeneity of the mapping sources they used, but I have seen little statistics to qualify this. This short communication would be a good opportunity to do it. For instance, it would be useful to understand what the average size of a polygon for each original dataset was, or (even better) to plot the average size of the polygon against the scale of the original map. This would greatly help to characterize the "quality" of the dataset and to highlight the difference between the original datasets.

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