

## ***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.***

**Anonymous Referee #1**

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Hugelius et al. [2013] describe the Northern Circumpolar Soil Carbon Database (NC-SCD), focusing on data for soil depths between 1 and 3 m. The paper is well written and the work will be highly useful for those studying the potential release of carbon dioxide and methane from thawing permafrost. The authors have done an excellent job and the paper will be ready for publication after some modifications. I have two major concerns: 1) The authors did not include anything about the data itself, only the techniques used to compile the data. The results section describes various techniques applied to the data and is essentially an extension of the methods section. There is no estimate of carbon stocks, no analysis of the soil carbon data, and no map showing

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the potential spatial distribution of the soil carbon. The paper serves to document the compilation process, but does not include key information of practical use to a broader audience of scientists studying permafrost carbon dynamics. I suggest the authors at the very least include some statistical analysis of the data and, hopefully, a map of soil carbon below 1 m depth. 2) The authors need to quantify uncertainty, especially if this data is used to estimate global stocks of soil carbon. They only briefly touch on the subject, but do not expand upon the qualitative uncertainty estimates of Tarnocai et al. [2009]. The users of this database need quantified uncertainty.

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