

Interactive comment on “A new dataset of soil Carbon and Nitrogen stocks and profiles from an instrumented Greenlandic fen designed to evaluate land-surface models” by Xavier Morel et al.

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Thank you very much for your review and your comments on this manuscript. I hope that the explanation given below will provide an adequate response.

Referee comments are indicated as “RC” and author responses as “AR”.

RC : I think this is a valuable dataset, as it complements previous studies of gas fluxes with new data on soil carbon content.

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AR : Thank you.

RC : However, despite valuable, the data doesn't comply with being a highly useful data product as expected for ESSD.

AR : We believe this dataset is very useful, if not highly useful "in the benefit of Earth system sciences" as mentioned in ESSD's Aims and scope. We, the 1st, 3rd and last authors are Earth System modelers and we needed these data to be able to develop and test our biogeochemical model that will be used in IPCC type simulations. We believe it will be used by similar modeling groups around the world. Of course we let the editor decide whether this paper fits ESSD's scope.

RC : This is mainly for two reasons: the first is that despite few, there are other studies that complement greenhouse data fluxes with soil carbon content, and in this sense those studies are also valuable to model the dynamics of soil carbon and gas fluxes.

AR : We know there are other sites and we acknowledge them in the paper (see Table 1). As modellers we will also use these data. However, as mentioned in the table, our site is the only one where the carbon measurements were taken at the exact location of the automatic chambers flux measurements. But more importantly, the Arctic and sub-Arctic is vast and a handful of sites is obviously insufficient.

RR : Second, the amount or oddity of data doesn't make it as extraordinary as claimed by the authors.

AC : We don't understand what the reviewer is trying to say. Why is the amount of data not satisfactory ? And what is odd about this data ? Never do we claim in the paper that our data is extraordinary. We just say it was necessary, at least for the modeler's community.

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