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Interactive comment on "Greenhouse gas production in degrading ice-rich permafrost deposits in northeast Siberia" *by* Josefine Walz et al.

Anonymous Referee #2

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Authors using the word "glacial" very often do not specify that they mean age but not the origin of the deposits they studied. It might confuse the readers who are not familiar with the paleoenvironmental conditions of the area of investigation. I suggest to use marine isotopic stages or regional stratigra[hic units. Lines 64 and 65. I would recommend to authors include in the review of the assessments of the carbon pools in different stratigraphic horizons research published by Shmelev et al (Shmelev, D., Veremeeva, A., Kraev, G., Kholodov, A., Spencer, R. G., Walker, W. S., & Rivkina, E. (2017). Estimation and Sensitivity of Carbon Storage in Permafrost of NorthâĂŘEastern Yakutia. Permafrost and Periglacial Processes, 28(2), 379-390.). Line 95. It is not so important for this study, but permafrost temperature in this region varies with the to-

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pographic forms and consist of -9 within the thermokarst depressions and -10.5 at the yedoma hills (Kholodov, A., Gilichinsky, D., Ostroumov, V., Sorokovikov, V., Abramov, A., Davydov, S., & Romanovsky, V. (2012, June). Regional and local variability of modern natural changes in permafrost temperature in the Yakutian coastal lowlands, Northeastern Siberia. In Proceedings of the Tenth International Conference on Permafrost, Salekhard, Yamal-Nenets Autonomous District, Russia (pp. 25-29).) For the Results section, I also recommend authors to insert the graphs of dynamics of the greenhouse gases production during the experiment to give readers a better idea about dynamics of the process of organic matter decay.

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