

Referee comments #2

Niemi et al. present CH₄ and N₂O fluxes from 8 different land forms in two regions of northern Finland. These data are a useful contribution to our understanding of how these climate-affecting gases are generated or consumed in cold-region soils, and the models presented show that both main effects such as pH and interactions are important for understanding the drivers of soil gas flux.

Answer: *Thank you for reviewing our manuscript.*

I found the manuscript to be clearly written and I have no serious concerns. I would like to see better maps in the first Figure, and I found a few minor problems in the References that my experience teaching undergraduate students in Environmental Science suggests may be based on errors created by generative AI; the authors acknowledge the use of ChatGPT-5. I found two errors, there may be others.

Answer: *We will improve the maps in Figure 1. No generative AI-tools have been used for references, only for debugging R-code and generic language and spell checking. However, reference managing tools such as Zotero and EndNote can sometimes make mistakes (which we should have noticed). We will double check all the references to correct any errors.*

The map in the middle-top of Figure 1 appears to show sites in Norway. Perhaps the map could be enlarged and cropped to show mainly northern Scandinavia and Finland to clarify.

Answer: *We will improve the maps to make sure they are clearer. In their current form the country borders can be difficult to visualize.*

In the References, Line 703, the first author's name in Brummell et al. 2012 is spelled correctly, but as cited in the main text on Line 551, the name is missing a letter.

Answer: *We will double-check and fix all errors in references throughout the manuscript.*

Line 809, several words are missing from the title of Livingston and Hutchinson 2009.

Answer: *We will double-check and fix all errors in references throughout the manuscript.*