

**Line 15:** Yedoma samples located in upland **and** slope position

I still don't understand what you mean by 'slope position'. Is the sample located on a slope of a certain slope angle (ex. Slope with N aspect and slope angle of 20°?)

**Line 17:** Are the permafrost layer really *producing* permafrost...change wording.

**Line 23:** CH<sub>4</sub>

**Line 36:** Formatting issue with citation.

**Line 40:** Formatting issue with citation. Check throughout the document, some citations are underlined. Remove "in their study", it is redundant.

**Line 40:** In Treat et al. 2018, they discuss landscape type (upland/wetland), not geomorphology.

**Line 42:** "Landscape position is highly affected by permafrost thaw, low-lying ice-**rich** permafrost areas **can turn out waterlogged environments** following permafrost thaw, while higher areas can be drained by water run-off." I don't understand this sentence. Do you mean perhaps that the effects of permafrost thaw are different based on landscape position? Instead of "turn out", maybe you mean "turn into" or "become"?

**Line 51-52:** "Studies have shown that C decomposition **depends** on several"...

**Line 54:** Treat et al. 2015

**Line 55:** Please define 'landscape categories'.

**Line 56:** Do you mean under anaerobic conditions? ex. Unlike incubation under aerobic conditions, few studies have specifically focused on how ... for estimating CO<sub>2</sub> and CH<sub>4</sub> production under anaerobic conditions.

**Line 57:** Once again, you are using the term "landscape position" frequently in this paper without ever explaining what you mean. Please define this term explicitly and clearly in the beginning of the paper. Do you mean slope angle, slope aspect, elevation, landscape cover? In Treat et al. 2015, they define landscape position as: drained lake basin, active floodplain, wetland, lowland, or upland. Maybe you can use this as an example.

**Line 59:** Consider splitting this sentence into two sentences.

**Lines 63-65:** Please re-read sentences for grammar mistakes and fix.

**Line 70:** Give general geographic precision of Kurungnakh Island.

**Line 96:** Fix grammar (tense) mistake.

**Line 97:** Is a "well-drained upland soil profile" referring to on the upland sample or all three samples? If only the upland sample, this phrase should come directly after the word "upland" or in a separate, clear sentence.

**Line 98:** I don't understand this sentence. Sloping toward which three directions?

**Line 137:** Give exact number of samples which didn't produce CH<sub>4</sub>.

**Line 226:** Give exact numbers.

**Line 230:** Typo. Change to CH<sub>4</sub>

**Line 232:** Typo. °C. This typo appears several times in the rest of the paper. Please double check.

**Line 235:** Over 363 days? So you have continued monitoring CH<sub>4</sub> production and you eventually did see CH<sub>4</sub> production or are you speculating that one day the samples might start producing CH<sub>4</sub>?

**Line 251:** Typo 4 °C.

**Line 256.** Typo

**Line 271:** Statistically significant? If yes give p value, if no, change wording. I believe that the reference is to the incorrect table.

**Line 322:** Do you mean to have several headers under the discussion header? 4.1.1. Different behaviors of what between landscape position.

**Line 361:** What do you mean by “highly constrained”? I believe you mean to say that community size varies highly “between” sites. What do you mean by “narrowness”?

**Line 364:** Typo. 20 °C.

**Line 373:** Citation missing.

**Line 382:** Delete “On the first hand”. Very long sentence with grammar mistakes.

**Line 428:** How much time?

**Line 438:** Dwarf dominated tundra? Dwarf-shrub dominated tundra maybe.

**Line 461:** Typo

**Line 464:** Landscape position is not the trigger of CH<sub>4</sub> production.