

Authors response to the comment raised by referee #1

Rinne et al have done an excellent job of addressing my concerns on their manuscript, which analyzes temporal and spatial patterns of mire methane flux, its ^{13}C signature, and potential drivers. I recommend that this interesting and data-rich manuscript be accepted for publication with minor revision. My remaining suggestion is to add ranges of published delta values for acetoclastic and hydrogenotrophic methane emissions and refer to these ranges in both the intro and discussion as appropriate. This will strength the current conclusion that variability is mostly due to shifts in methanogenic pathway, as well as give context to the mire-level values, which are some of the lowest reported.

We thank for the kind comments and very detailed and constructive comments on the earlier version of this manuscript, which helped improve it considerably.

We have added the ranges of delta values for acetoclastic and hydrogenotrophic methane, as suggested.

Technical edit:

L359 "Following double root transformation...", perhaps square root is meant?

Yes indeed, we have now corrected this.

General comment:

While this reviewer chooses to remain anonymous, she would like to draw brief attention to the assumption about gender identity made in the response to reviewer. Gentle reminder that "the reviewer" and "they" are the safe choices in unknown situations.

Sorry for this mishap, I try always to be inclusive and neutral in such statements. Coming from a fenno-ugric linguistic background, with no gendered pronouns, I have messed the personal pronouns of indo-european languages more than once. (My own preferred personal pronoun would be the Finnish "hän" which means both he and she).