Editor comment:

Thank you for your revised manuscript, which I can now accept for publication. I indicated the need for technical corrections, because I would like to suggest one last modification. On line 417-423, you suggest using forecasting scenarios and proxy variables (e.g. temperature) may be used to inform tuLHs. In this paragraph you discuss this for CO2, while CH4 and N2O are the gases showing the greatest bias. Temperature will not suffice to inform about CH4 or N2O and the complexity and transient nature of CH4 and N2O fluxes would probably make it difficult to use any type of forecasting to inform tuLHs. I therefore suggest that you either remove this suggestion, or include more nuance to capture the complexity.

Response: We appreciate the support for the publication of this manuscript. We agree with the suggestions provided for that section of the discussion.

Action: We have removed the suggestion and edited the paragraph accordingly. It now reads:

"In this case study, the year chosen had typical climatological conditions, and we demonstrated that the statistical properties of the different GHG fluxes differ. Consequently, this study questions the application of the FTS approach to measuring multiple GHGs simultaneously with a limited number of sampling dates (mainly once a month). We recognize that longer time series (e.g., multi-year) could provide more robust optimizations that can be applied to monitoring efforts. We recommend co-locating automated measurements with manual survey efforts to adequately capture the temporal and spatial variability of soil GHG fluxes at study sites."

Additional actions: We have revised the references and formatted them for Biogeosciences (i.e., included DOIs). We edited Figure 5 to improve the quality of the figure.