Anonymous Referee #1

page 3, line 17: for information on feeding guild and termite methane see Zhou, Yong ,A. Carla Staver, and Andrew B. Davies. 2023. Species-Level Termite Methane Production Rates. Ecology 104(2): e3905. https://doi.org/10.1002/ecy.3905

Thank you. We have added this reference to the sentence.

page 4, line 16: how are foraging strategies different here? Is it about what the termites are consuming, and why might different fluxes result?

We have removed this sentence as it's not appropriate point for site description.

page 15: for mean CO2 and CH4 fluxes of mound and soils, are soils significant? It looks like methane in soils is negligible.

The dry season soil CH4 fluxes are positive at 2 m and 4-6 m distance. In contrast, the soil CH4 fluxes far from termite mounds are negative throughout the year in this area (Wachiye et al., 2020). We were directly sampling the CH4 concentrations every second and the soil CH4 concentrations showed a clear linear trend that was higher than the gas analyzer noise.

page 15 figure 7: might be clearer to visualise this with mound and soil fluxes compared instead of just presenting soil fluxes, as this contextualizes both measurements.

Thank you for the suggestion. We have now added the mean mound fluxes to the figure.

page 16, line 8: Fungus-farming termites are thought to have higher rates of methane production: see Rouland et al. 1993, Gomathi et al 2009, Zhou et al 2023.

We edited the sentence and included the suggested information that most studied fungus-growing species have relatively high CH4 production rates.

page 18, line 26: Sentence doesn't quite make sense - "In addition to the daily cycles of CO2 and CH4 fluxes, the relationship between CO2 and CH4 showed a clear diurnal pattern"

Thank you. We have rephrased the sentence according to your suggestion.

page 18, line 30: methanotrophs will also influence CH4 concentrations

We think that the methanotrophic activity most likely does not cause diurnal variation in CH4 fluxes, so it may not be relevant to mention here. The effects of methane oxidation have been discussed in section 4.1. where we considered potential reasons for the different CH4/CO2 ratios between dry and wet season.

General notes on formatting: there are some inconsistencies with subscripts on methane (CH4) and carbon dioxide (CO2) abbreviations.

Thank you. We have corrected formatting on the page 17.