

## **Reply to Review #1:**

*We thank reviewer #1 for acknowledging our work and achievements and for his comments that allowed improving our manuscript. Below are our replies to those comments:*

Line 10, "The correlation coefficient R": only a question at this stage of the review, is it really the R or the R<sup>2</sup>?

*We provide the correlation or Pearson coefficients R. We have added "Pearson" at the first instances to make sure the reader knows which coefficient we are using.*

Line 18: What does a.g.l. mean?

*We have corrected at the first appearance in the abstract and in the manuscript "above ground level (a.g.l.)".*

Line 20: do you have some data to illustrate the "almost constant"?

*We do not provide details in the abstract but the data corresponding to this statement are discussed in section 3.4 and displayed in Figure 16 with the vertical profiles of the 4 trace gases.*

Line 57: What is the range of temperature?

*The outside temperature is roughly ranging from -35° to 5°C (see Figure 1) but the EGS are in a thermoregulated box with temperatures between 11 and 28°C (see section 2.4 and Figure 3).*

"Figure 3" (Barret et al., 2024, p. 8) Figure 3: If the period without data is not usefull, I would advice the author to use some cut in the time series, or multiple graphs in order to maximise the visibility instead of leaving a third of the space empty.

*It is true that there are some gaps without data but the figure is readable and consistent with the figures 5, 7, 9 and 11. Showing the whole period also allows to better locate the time with measurements at CTC and is also more consistent with Figure 2 displaying the MICROMEGAS operations.*

Line 227, "the addition of voltages from the NO sensor in equ. 2.5.2": What is equ.2.5.2, do you mean equation (1) at the top of the page ?

*The error is corrected.*

Line 237, "correlation coefficient R.": In relation to the comment in the abstract, it is maybe a good idea to write down the formula.

*See reply to comment Line 10. Adding "Pearson" is similar to providing the equation.*

Figure 5: it is not easy to see the difference in color of the dot in the legend (printed or pdf), I would advice to increse the size of the symbol.

*The caption text gives the details about the correspondence between the colors/symbols and the parameters in case the reader has problems with the small symbols of the legend.*

Figure 6(b): could you give some info about the 2 line (I guess red = linear regression, blu = unity)

*Done for Figure, 4, 6, 8 and 10.*

Figure 7: I think some words are missing, "Same caption as Figure 5 but for NO<sub>2</sub> (MLP100 calibration function)."

*Corrected for Figures 7,9 and 11.*

Figure 9: Same comment as for Figure 7.

*See above.*