Review of manuscript submitted to ESSD

The flask monitoring program for high-precision atmospheric measurements of greenhouse gases, stable isotopes, and radiocarbon in the central Amazon region (Sierra et al.)

This paper presents an update to the flask sampling dataset from the ATTO tower. This is an excellent contribution of data from a data poor region and it is admirable that the authors are making the data available quickly for the great benefit of the scientific community. The metadata is very well represented in the data download. The description of the methods is clear and the brief analysis of the main trends is interesting. I can recommend publication once the following points are addressed, in particular regarding the quality of the figures.

Comments:

- Figure 2 could include additional information. I understand you want to keep it relatively simple but all the same to serve as a useful overview it would be good to add at least:
 - o Brief details of the flask sampling (frequency, time, volume, height)
 - o Clear link to where the data can be found (data repository)
 - o Info about how often "finalized" data is released
 - Brief info about QA/QC procedure
- Also, the formatting is a bit odd, such as the hyphen in ¹³C-CO₂ which is much too long, 14C with no superscript, and other "boxes" which could be much wider for a nice figure. The colours are a bit dark also for MPI-BGC and Jena, making it hard to read the text.
- Section 2.3.2: Are the analyses on flasks always done in this order? Is there indication whether there is any isotopic fractionation in the first two sets of measurements, that could affect the isotopic composition measured in the third step? Has this been investigated?
- Section 2.3.3: What are the quality assurance criteria? How often are these not met?
 - Regarding the flagging based on deviation from spline: Are there any species that are highly variable at this timescale, so that flagged observations could be true variability? Eg. for H2 you have much more flags.
- **Figure 3:** Add more info on the figure panels so that it can be more easily understood, eg. the info that the panels represent air components, trace gases, and IRMS measurements respectively could be on the figure. The text is very small on the axes. The placement of the subplot designator (a,b,c) is very unusual; please move to the top left and perhaps make it bold so it stands out. I think the x axis would be more useful if it was in months, not days.
 - Also regarding this section: Do you have some context regarding whether there are any potential issues with the long storage times?
- **Figure 4**: The axis and tick labels are way too small. The red colour of the outliers is hard to distinguish because the points are so small and the error bars are black not red. Please make the x axis span the full length of the subpanels.
 - Could you add the trendline (where there is a trend) as well as the spline?
 - Same comments for figures 5 and 6.
 - Data: A few small points could be altered to improve usability of the data:
 - Remove spaces in column titles, eg. SD CO2 could be SD_CO2

- Use a standard designation for error, eg. you have SD CO2 and err_O2/N2. If both are measurement uncertainty they should be designated the same way.
- o Remove protected characters like /
- Have the time in a less error-prone format, with no / eg. just "18112021 16:30" or similar

Minor points:

- L9: Represent stable isotopes as delta values, eg. change $^{13}\text{C-CO}_2$ to $\delta^{13}\text{C-CO}_2$ and analogously for other species.
- L208: Of δ 180 not of 180.