We thank the review for their time in reading our paper and offering their thoughts and suggestions. The reviewer's comments/suggestions are in regular black text, and *our replies are in the blue italics.*

This manuscript presents an intercomparison of seven co-located infrared spectrometer observations. The work is very valuable as the relative calibration and random uncertainties between different instruments proved to be very small, thus allowing a network use of these instruments.

General comments:

The manuscript is well written and structured. Also, concise and clear language is used.

Minor comments:

Abstract, line 27: you mean "quantities", not "qualities", I guess?

Yes, that is correct. We have fixed it.

Line 195: check phrase ("observed" is repeated)

We have removed the redundancy.

Line 253, and Fig. 10 (right): Do you have an idea why ASSIST-20 has a larger disagreement in the lower layers? If so, could you give a short explanation in the text?

We do not. We presume that the small difference in the water vapor in the A18 (which makes the differences with the other ASSISTs) is due to some small correlated error in A18, but we have not been able to identify it. Thus, we have not modified the text.

Line 266: PWV uncertainties are 0.1-0.3 mm (not 1-3 mm) according to Fig. 12

Thank you – this is an important catch! We have updated the text accordingly.

Figure 1 (and 3): ASSIST measures up to 3300 cm-1. Why do you show only the range until 1400 (1500) cm-1. If you have a good reason for this, please mention it in the paper why you restrict these plots to this selection of wavelengths. Otherwise, I would suggest to show the whole spectrum.

The original focus of this effort was to confirm that the thermodynamic profiling would be consistent among the units, which only uses observations between 550 to 1000 cm^{-1}. Thus, the careful attention to the laboratory-derived corrections was focused only on the MCT detector (i.e., 520 to 1800 cm^{-1}). (We didn't show the results between 1400-1800 cm^{-1} as that portion of the spectrum is largely opaque from the surface, and thus not very useful from a science perspective). Because the InSb band (1800-3200 cm^{-1} spectral region) is relatively unused, the laboratory calibration activities to refine the finite field-of-view and spectral calibration parameters for the InSb band was performed after this intercomparison activity in September 2023 (we wanted to confirm that the laboratory calibration approach worked for the MCT band first). What is important here is that this study confirmed that the procedures used in the laboratory to derive the needed instrument-specific coefficients are effective, and thus the company has adopted them for all future ASSISTs (including their use in both the MCT and InSb bands). We have added a new paragraph in the summary of the paper that captures this information.

Figure 4: Why is the upper axes range set to 150? It seems that there are also data above this value. Do you have a reason for that? I would suggest showing the whole range.

The axis range has been changed to 160 RU, which now encompasses all of the points. The interpretation of the results is unchanged.

Technical comments:

Please check the list of references. It seems that many references in the introduction are not listed.

The missing references have been fixed (thank you to reviewer #2 for their help).