

The paper by Herman and Mao is a study comparing Total Column HCHO, NO<sub>2</sub>, and O<sub>3</sub> from Pandora Spectrometers to OMI and DSCOVER-EPIC. They included multiple pandora stations located at various locations around the globe and during different seasons. They found that agreement is overall good, however OMI does not always capture the seasonal variation as seen in the pandoras and may not be sensitive to changes in surface concentrations. DSCOVER-EPIC agrees quite well with the diurnal pandora data. This is a much needed comparison study as there are few publications on the validity of pandora spectrometers which are to be used in future satellite validation plans. The authors have addressed some of the previous comments, but not all. Below I note additional questions or comments based on this revised version.

Larger suggestions include a more in depth discussion on the Pandora's data quality. The authors use numerous Pandoras around the globe in different figures without providing a reason for the change. Keeping the study limited to a couple would provide a clearer conclusion. The authors also emphasize that there are disagreements between OMI and Pandora without much explanation as to the cause.

Line 22: switch 'OMI' and 'Ozone Monitoring Instrument'. OMI is the abbreviation.

Line 24: put 'TCHCHO' and 'TCNO<sub>2</sub>' in parenthesis

Line 98: I still don't understand why you're not using TROPOMI at all but if you're not using it, remove the mention of it here. Not relevant.

Line 100: I still would like to see more explanation of the data filtering in the text. There is only a brief mention on line 145 of the rms. Are you not considering the independent uncertainty, negative values, 'unusable' data, L2 DQ flags, etc.?

Lines 132-126: I still don't think this level of detail is necessary for this publication. This info is needed for a user manual, not an intercomparison paper.

Line 139: 50 km is quite far for these Pandoras. Especially in an area such as NYC where NO<sub>2</sub> changes.

Figure 1: Note the uncertainties for HCHO and NO<sub>2</sub>.

Figure 1: I still don't see the need for both Figure 1 and 2. They both are saying that there is a seasonal dependence at the Bronx. If you want to remove the noise from figure 1, that's fine but then I don't feel figure 1 is necessary. Other than one sentence in line 145, the weekly data in the second and third columns from figure 1 are not discussed.

Line 155: Is the HCHO seasonal dependence due direct emissions from a park in the Bronx? Not isoprene emissions that break down into HCHO?

Figure 7. Upper panels: Better label for legend. Should have 'Pandora' somewhere. Why is 'NO<sub>2</sub> OMI' in magenta?

Line 222: I still have an issue with this sentence. You are only able to compare Pandora at the OMI overpass time. There is no point in comparing OMI to the entire diurnal data of Pandora.

Line 245: Why only restrict the cases to the 3 days shown? Why not find the agreement for the entire record?

Figure 12: The chosen Pandoras jump around too much. I would like each figure to be more consistent, so we are talking about the same location/environment for the entire paper. We can look at different areas but be more consistent. For example, figure 9 we are discussing NYC, South Korea and PA. Figure 10/11 we jump to Toronto, and figure 12 we go to Rome, PA, and CO. I would prefer to see the Lowess lines in Figure 12 of the previously discussed pandoras instead.

Line 327: What influences the agreement? Clouds? Different pandoras? Seasonal dependence. Where was this discussion in the rest of the text?