

This manuscript utilized two satellite observations of PANs over Mexico City and analyzed the temporal and spatial variation of PANs. The measurements of other species (O₃, CO, NO₂ column, HCHO column) and fire activities are also included to interpret the seasonal trends of PANs. The paper is well-written, and the context is within the scope of a measurement report. I recommend minor revision before publication.

My major comment is the relationship between satellite observed PANs and local pollution in urban regions. The introduction section tells us how PANs concentration is elevated given the abundance of precursors. For cities, as the emissions are near the surface and the most pollution is within the mixing layer, we expect increased PANs within the mixing layer as well. However, both TES and CrIS PAN retrievals provide the free-tropospheric averages of PAN. Please justify in the context that these retrievals reflect PAN signals due to pollution in cities.

I also ask for clarification on few questions listed below:

1. Figure 3: As TES measures PAN only and CrIS measures all PANs, why TES PAN retrieval is higher than CrIS PANs retrievals in Figure 3 b) and d)?

2. Line 295 and Figure 4: The authors attribute the lowest PANs in NW region to infrequent outflow to the northwest. However, distances between the city center and selected outflow regions are different. The lowest PANs in NW can be the result of chemical/physical loss due to longer transport. Please clarify that.

3. Figure 5: The nearby background PANs are equally high between March and Aug. As the authors attribute the high PANs to local fire activity in March-April-May, the high PANs between June and August are not explained.

4: Line 349: Please specify that multiple NO_x sources include anthropogenic, soil, biomass burning and lightning. It is also worth quantifying the relative contribution of each NO_x source in the main context.

5. Figure 7: it is very hard to tell the difference of spatial patterns of CrIS PANs among years and how it correlates with the occurrence of fires. For instance, Line 367 says PAN enhancement in May 2017 located south of the urban enhancement is collocated with fires. However, the most fire occurs southwest of the domain, but no PANs enhancement is observed.