

## Community comment #1 response

*We thank the Dr. Solomon for sharing their questions on our paper. Please see our responses below in blue.*

- 1) ENSO: while the results for 2016 are interesting, is anything seen in the last year's data? To be convincing regarding ENSO signals, it would be helpful to discuss additional information about the year 2023 through the end of this very hot year

*This paper only presents analysis from CrIS onboard the Suomi-NPP satellite; that instrument lost its longwave channels in August 2023, so our record for that year does not extend past July, unfortunately. Our understanding is that the Indonesian fire season peaks in October, so we are unable to see signals of ENSO-induced drought in that last year. We have seen a number of news stories pointing to 2023 as a big fire year in Indonesia, and we look forward to analyzing those events further with the NOAA-20 and NOAA-21 CrIS instruments.*

- 2) I am very surprised not to see enhanced HCN or other wildfire markers over Australia during the remarkable 2020 wildfire season in Figure 8. Can the authors please explain what they think about the data in that year in more detail?

*While the 2020 fire season does exhibit the largest peak in methanol over Australia, because these plots are monthly means averaged over the whole continent, we don't see large signals associated with that event in these timeseries. The impact of those fires would likely be more apparent had we included downwind ocean regions in these timeseries, since we do see strong signals in the lofted 2020 Australian fire plumes as discussed in Section 2.2.*

- 3) It would also be helpful to see time series plots similar to figures 7 and 8 for Siberia, where certain years displayed high frequency of fires, and for Canada. One would imagine that this instrument would have seen a strong wildfire signal in 2023 over Canada. Does it?

*Because of the Suomi-NPP CrIS record ends in summer 2023, as mentioned above, the full 2023 Canadian fire season is not represented in our dataset. However, we look forward to investigating this further with the NOAA-20 and NOAA-21 instruments.*