General Comments

This revision addresses many of the previous comments but the manuscript would still benefit from further distinguishing between results within the GOCI domain and the full AHI domain, simplifying several of the figures to improve legibility, making use of additional tables to summarize statistics rather than relying on reading very small print in figures, and drawing additional conclusions. Specific suggestions are offered as follows.

Specific Comments

The addition of Table 2 greatly helps in distinguishing the sensitivity to the domain size, and a similar approach should be used throughout the manuscript to ensure apples-to-apples comparisons are being made. For example, as currently written, the analysis associated with figures 7 and 9 essentially says to ignore F3 and FM3 because they are for the larger domain. But instead, the authors could do the analysis in two groups: one in which data only within the GOCI domain are presented for all cases, and one which compares the large and small domain results for AMR, AES, F3, FM3 (which is already done now, in section 5.3 and Table 2). Consistent analysis of all results within the GOCI domain should allow the conclusions to be more easily shown. The effect of domain is a separate important facet, and again I really like Table 2 and its discussion.

Related, please clarify whether the results and analysis related to Figures 11 and 12 is conducted only within the GOCI domain or if it is mixing results with GOCI and AHI domains. I strongly feel it should be within the GOCI domain.

The postage-stamp graphics and small text in figures 7 and 9 make them nearly illegible. These figures could easily be replaced with simple tables that summarize all the statistics for all the cases (similar to Table 2) within the GOCI domain. I think the key points would clearly emerge, at least for the KORUS-AQ period: within the GOCI domain, all individual satellite products have similar statistics, the ensembles improve the statistics, and the ensemble-mean and MLE techniques appear to produce very similar results. With these new tables, I feel figures 7 and 9 could be omitted. Though if the authors feel there is some value in the figures, a representative subset could be shown, similar to how figures 4 and 5 have been recast to show AOD for only one example. I would suggest no more than 4 panels, to keep the figures legible (e.g., an AHI example, a GOCI example, F1, FM1). With these new tables, I also feel that Figure 13 can be omitted, as the tables would present the same information in a much more compact and easy to read form.

Similarly, figures 8 and 10 could be simplified by only showing representative examples. If the authors prefer to show all cases, I suggest that the 11-panel figures show only the GOCI domain in panels a, b, g, and k, and that a separate figure be used to show the AHI domain (perhaps with an outline of the GOCI domain) to elaborate on the low values in the extended domain.

I feel that Figure 6 and its discussion are out of place. I think it would make more sense for this analysis to come after the error analysis sections, because the estimated uncertainties of the geostationary satellite products have not been provided in the paper. (Maybe this uncertainty

information belongs in Section 2.) It is relevant here; it is not clear how meaningful it is to consider satellite AOD values in the 0.01 to 0.1 range.

Also on figure 6, the solid lines (left axis, dAOD) are not useful because the axis range is so large. dAOD rarely exceeds plus/minus 0.5 but the axis range is from -4 to 1. You probably need a separate plot, with appropriate axis range, to meaningfully show dAOD differences. Otherwise, the following statements about reduction of errors are not clearly demonstrated by the figure.

Section 6 should state high-level conclusions regarding the Remarks in Table 1. What can be said about the NRT vs all-available products, about the wider area of AHI, about the missing effect of GV1?

Technical Corrections

Line 168: Can you specify, what kind of data from JAXA?

Near line 232: Either here or in the Table 1 caption, add a statement that the 4 entries F1-F4 denote the ensemble-mean fusion technique and the 3 entries FM1-FM3 denote the MLE fusion technique.

Near line 256: Need to comment on the scatter apparent in Fig 1 for the squares (AOD>0.5). It is especially obvious at 2 and 5 UTC for NDVI>0.5, but also apparent as inconsistent temporal patterns between the NDVI bins. Also, there is a typo in the red label of Fig 1, it should be 0.5<NDVI.

Line 270 and following: Need to state the purpose of Figure 2, I don't understand what its significance is. Is it just a graphical illustration of how the bias is determined, or a means of assessing the degree to which the distributions are Gaussian? Also, the text isn't clear. The curves don't appear linear between plus/minus 1 to me. Though, what is the significance if they are not linear? Also, the multiple statements of excluding data beyond 2 SD seem repetitive.

Discussion of Figure 4: An additional statement should be made about Fig 4. The very small values shown everywhere in 4(f) show there is really very little difference between the two ensemble methods. There is only a fairly uniform small offset (bias) apparent.

Line 443: I think the word “smaller” should be “larger”