Reply to reviewers:

The authors would like to extend their gratefulness to editor and reviewers for their time and gracious comments. It has been a pleasure to interact with you. Our last modifications to the manuscript are summarized here.

Page 29, lines 7-9: Add references to the figures ("These plots...").

Done. Added “Figures 15-33”.

Page 29, lines 13: Subscript the 2 in NO2.

Done.

Page 32, line 29: Skip "model".

Done.

Summary/conclusions: Add a short paragraph on the seasonal analysis.

Done. We added: “On a seasonal basis, both the OMI and TM4 model pseudoprofiles show seasonal features that are consistent with the available lightning flash and fire count climatologies, and complementary to the results obtained for the annual means. On a finer scale, we observe some significant differences – on lightning distribution (at upper levels over Africa and South America, or over the Agulhas and Brazil-Malvinas confluence zones), and the intensity and reach of convective transport over strong biomass or industrial sources - whose detailed examination deserves future work. For example, we note that the penetration of seasonal biomass burning signatures into 280-500 hPa over Africa is stronger in OMI than in TM4. Also, the penetration of industrial emissions into 500-620 hPa over Europe, China and the US reaches a maximum in MAM and JJA according to TM4, whereas OMI registers a more uniform distribution of mid-tropospheric signatures across the year with maxima in DJF and SON, which is suggestive of problems with the model convective scheme, possibly related to frontal uplift by conveyor belts in the wintertime.”

Figures: Several figures use a logarithmic scale. Please state this in the respective figure captions. What does "alog" mean?
I propose to replace
"VMR alog10(pptv)"
by
"log10(VMR/pptv)"

Done. Thank you!