

Authors' Response to RC1: '[Comment on egusphere-2024-3761](#)', Anonymous Referee #1, 15 Apr 2025

Very good paper. It should be accepted with minor revisions as presented below: *Thank you for the compliment. In Response to RC 2 we modified the paper for more focus, clarity of messages and, we hope, more insight and impact in understanding tropospheric ozone trends near the Equator over the past ~25 years. We hope these clear up some of your questions (e.g., around Ll 290). The manuscript changes were also instigated by a number of TOAR II articles published or posted as preprints since our original submittal and that also analyze ozone observations from ground-based (GB) and satellite data. The two principal modifications in our revised paper are (1) a more thorough background in the Introduction, illustrating the necessity and motivation for a study that turns out to solidify the advantages of rigorously reprocessed GB data for trends analysis over shorter, less certain satellite products that diverge from GB measurements and from one another; (2) more details on the sensitivity studies we conducted (a) varying profile Sample Numbers in the free troposphere (FT); (b) evaluating of QR and MLR statistical approaches to trends; (c) varying start and end times of the GB time-series. A significant new result in the latter calculations is that trends determined from 12 years in either GB or satellite trends are so uncertain compared to 20-25-year trends that they are not reliable for the needs of TOAR II.*

Our Summary is longer and better links our study to other TOAR II papers. We modified the title and added several references.

Line 55: missing reference *Reference has been added. Thank you.*

Line 200/201: How is the tropopause defined? It would be interesting to address how the tropopause is found in the paper. *We specify that the WMO lapse rate convention is followed. This can be found at WMO, 1957: Definition of the tropopause. WMO Bull., 6, 136*

Line 207: Gaudel et al., 2024 the reference does not open with the link provided. Please provide the correct link. <https://acp.copernicus.org/articles/24/9975/2024/>

Line 292-295: Explain further how you arrived at this analysis. *See above. More details on the climatology appear in T21 (see their Figure 2)*

References: I suggest reviewing the references according to the format proposed by the journal. *All references entered as per journal format*