

There is still a missing piece between 2.2.1 (wavelet decomposition) and 3.3.2. How can the authors be so sure those are solar and QBO signals? To me, they just use visual inspection of the frequency spectrum. Many previous studies used the wavelets that do not imply it is always appropriate. The authors should have provided some quantifications, e.g., XX% [plus uncertainty] of variability can be attributed to solar cycle, QBO and ENSO, etc.

The authors are thankful to the Referee for this relevant comment that helps to improve the manuscript. We appreciate his/her view that the wavelet analysis method may not be appropriate to quantify the contributions of modes like QBO or ENSO to ozone variability. To this end, and following the Referee's recommendations, a multilinear regression model is used to calculate variability and trend (Trend-Run model). A presentation of the model has been added at the end of the **2.2.1 subsection** (see line 230 in the revised manuscript). The Trend-Run model was applied to the stratospheric OMR time-series obtained over the two study sites (Natal and Santa Maria) from SABER observations at 24km. The percentage contributions of the QBO, ENSO and Solar forcings are presented and discussed at the end of the **3.3.1 subsection** (see line 445 in the revised manuscript).

Second Review of “Multi-instrumental analysis of ozone vertical profile and total column in South America: comparison between subtropical and equatorial latitudes”

Gabriela Dornelles Bittencourt et al.

This is my second review of this manuscript, and I thank the authors for carefully responding to my first set of comments and for substantially improving the writing in the paper. I support the publication of this paper once my following additional minor and technical comments are addressed.

The authors appreciate all the suggestions provided by the reviewer and value the support in enhancing and refining this manuscript.

Minor/Technical Comments:

Line 78: The latitude of SM listed here is different from the abstract. Please check.

Accordingly, the latitude reported in the abstract is incorrect. It is amended in the revised manuscript.

Line 81: Suggest deleting the sentence that begins with “It has been operating...”. This is already mentioned previously on this page.

Amended in the revised manuscript.

Line 84: Confusion on dates. Ground-based monitoring at NT began in 1979, not 1994, correct?

Correct. In 1979, measurements began in NT with the Dobson spectrophotometer, and it was only in 1994 that the Brewer spectrophotometer began operating in the region. Amended in the revised manuscript.

Line 126: Change “southern tropics” to “tropics to sub-tropics”

Amended in the revised manuscript.

Line 148: Change to “SABER measurements significantly overestimate ozone compared to the LiDAR or RS.”

Amended in the revised manuscript.

Line 184: OMI is written as “IMO”

Amended in the revised manuscript.

Line 331: Change to “Figure 8 shows the daily (SM) and monthly (NT) TCO values from ground-based and satellite instruments.” I am still a bit confused why only monthly values are shown for Natal.

Amended in the revised manuscript. The NT TCO database used in the analyzes corresponds to the monthly average. Hence the difference between the sampling in figure 8 between SM and NT.

Line 353: OMI again written as “IMO”

Amended in the revised manuscript.

Lines 363 and 364: Please make clear that these are percent values (if I am correct)

Amended in the revised manuscript.

Table 1: This table seems to have disappeared in my copy of the paper. Please check.

For some reason that I don't know, the table wasn't there in the version I sent. In the new version of the manuscript, it was added.

Lines 377-380: I strongly disagree that the annual cycle in TCO from Natal is dominated by the stratosphere. The annual cycle of tropospheric ozone alone from the April-May minimum to the biomass burning enhanced September-October-November season is 20 DU (25 DU minimum to 45 DU maximum). See figure below:

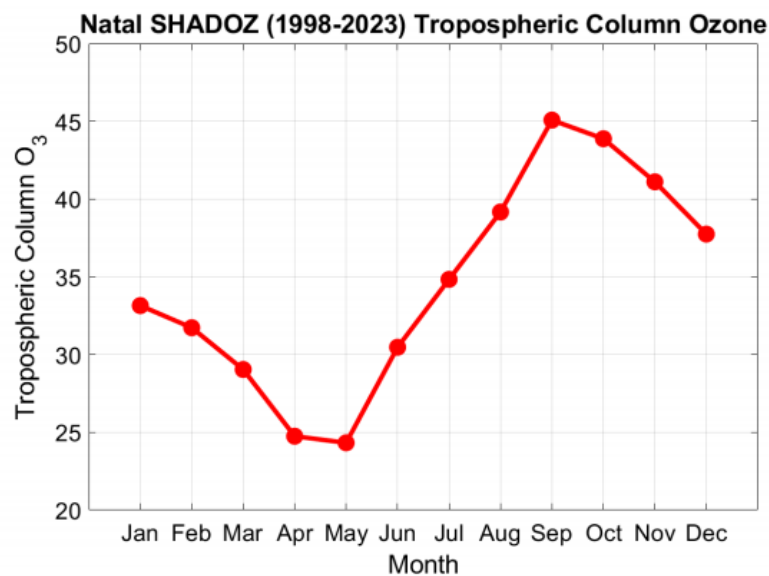


Figure 5 Caption: Typo – “OMI vertical profiles are given in ppmv”

Agreed. The sentence has been rewritten for better understanding.