

Interactive comment on “TOAST 1.0: Tropospheric Ozone Attribution of Sources with Tagging for CESM 1.2.2” by Tim Butler et al.

Anonymous Referee #1

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The tagging introduction was particularly well-done and, by itself, is a nice contribution. The automated tagging system is also significant, but it is not totally clear what fraction of the work is automated versus manual in the text. The CH₄ contribution and stratospheric N₂O results are particularly valuable.

Overall, I had very few questions or comments, which is rare. My one concern is the level of detail provided about the manual updates for a new set of tags.

Line-by-line:

pg3,18-19 : The Sillman paper has an appendix where they derive the ratio of 0.5 (not 0.35). The 0.35 was an approximation when using a chemical mechanism that did not include some loss pathways (e.g., ROOH). It would be nice to be more clear about this.

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pg4,5 : This reviewers understanding is that NO and RO2 are not tagged, but NO and RO2 reactions are apportioned proportional to NOy and NMHC.

pg4,17-21; pg5,1-4 : Interesting thing to note. Does your NO2_X_TAG ever react with RO2s? If so, could it make PAN and thus suffer a similar problem?

pg6,7 : and should be an?

pg9,1-2 : Given that NO3 has two odd-oxygens, why not attribute 1/2 to each?

pg12,21 :win?

Interactive comment on Geosci. Model Dev. Discuss., <https://doi.org/10.5194/gmd-2018-59>, 2018.

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