

acp-2021-310, Kulju et al.

Thank you to the editor for their review and the opportunity to make the corrections noted below. Our response is provided in blue.

Comments to the author:

The authors have done a good job responding to the comments and suggestions in the original round of reviews. The box model analysis provides solid indirect evidence of the importance of scavenging processes in that omitting them causes large biases. This approach is an improvement over the scavenging analysis in the original manuscript and addresses reviewers' concerns about that section.

I find the paper to now be ready for final publication in ACP

Two small technical issues to address:

Lines 65 and 510-511 – suggest slight rewording to clarify that higher N₂O₅ abundance or net production is favoured at low temperature (i.e., the production rate may not actually be faster since NO₂ + O₃ has a high energy barrier)

As recommended, Lines 65-66 now state: “The net formation of N₂O₅ from NO₂ and NO₃ is a temperature-dependent equilibrium, with net N₂O₅ production favoured at lower temperatures...”

Lines 510-511 now state “Since net N₂O₅ production (**R3**) is favoured at lower temperatures...”, as recommended.

Line 482 – add a comma after “clear”

This was fixed.