

Interactive comment on “The changing role of organic nitrates in the removal and transport of NO_x” by P. S. Romer Present et al.

Anonymous Referee #3

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This paper makes use of the available data from field campaign both on the ground and on aircrafts in the USA to explore how the general decrease of anthropogenic emissions (both NO_x and VOCs) is affecting the ozone production by increasing the importance of RONO₂ chemistry compared to the NO_x loss. The study is well presented and makes a clever use of past available data obtaining what looks like a relatively robust tool to make future predictions.

This referee agrees with what already suggested by the other reviewers. In particular the point regarding the calculation of the OH, HO₂ and RO₂ and radicals should be better discussed. As pointed out a better analysis of the uncertainties for the calculation should be done together with the inclusion, if possible, of HONO photolysis and ozonolysis of unsaturated compounds. The calculation, as is at the moment, is

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very simplified (for example, why not including reaction with CO when considering the losses of OH radicals?) and it can well be that it is good enough for this study but a sensitivity check by adding additional sources would help understand their impact. In addition, the comparison, where possible, with the available radical measurements would also help understanding the reliability of the simple calculation used.

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