

## ***Interactive comment on “Impact of uncertainties in inorganic chemical rate constants on tropospheric composition and ozone radiative forcing” by Ben Newsome and Mat Evans***

**Anonymous Referee #1**

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The authors have used their model results to reinforce the point that uncertainties in model input kinetic parameters are sometimes significant and often greater than model spread. Although the results of this study come as no surprise, studies like this remind the community not to ignore the consideration of input uncertainty in comparisons of observation and model results and in directing policy decisions. The authors also point out that improved parameterizations of even extensively studied but critical reactions, such as  $\text{OH} + \text{NO}_2 + \text{M}$ , would help reduce model uncertainty significantly.

This paper is well organized and presented and is suitable for publication in ACP.

\* The authors have used an out of date version of the NASA/JPL data recommenda-  
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tions in their analysis. There does not seem to be any reasonable explanation for this oversight given in the present version of the manuscript. Although, the conclusions from the present work are likely to remain unchanged the authors should highlight any differences with the 2015 NASA/JPL data recommendations in their paper in Table 1.

\* The treatment of the uncertainty in the atmospheric parameters, or lack of, is unsatisfying. A thorough treatment of photolysis uncertainty may be beyond the scope of the present work, but making an across the board percentage uncertainty assumption is surely not correct. It may have been better to not include photolysis uncertainty in the present analysis.

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