

## ***Interactive comment on “A Steady State Continuous Flow Chamber for the Study of Daytime and Night time Chemistry under Atmospherically Relevant NO levels” by Xuan Zhang et al.***

### **Anonymous Referee #1**

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The authors report a systematic investigation of the conditions achieved in a 10 m<sup>3</sup> simulation chamber and discuss this in the context of isoprene oxidation experiments. The manuscript is well written and within the scope of the journal. There are only few minor points which should be clarified before publication.

The authors could add a short comparison of their conditions with conditions in other chambers, which also work at atmospheric conditions, in addition to emphasizing that previous studies worked at either zero or high NO conditions.

C1

P5: Some details about the chamber air supply could be added to justify how the low range of NO<sub>x</sub> is achieved. The authors state that the minimum relative humidity in the chamber is 10%. Is this limited by the purification process?

P7 I204: I assume that the authors mean that MVK and MACR cannot be distinguished by a PTR instrument because of their same mass and not because of the same detection sensitivity.

P7: How was avoided that frozen water in the trap in the inlet of the PTR instrument disturbs measurements?

P8/P11: The authors assume that there are no wall loss effects. Does this also apply to OH, HO<sub>2</sub>, NO<sub>3</sub>, O<sub>3</sub> shown in for example Fig. 1? How does this compare to findings in other chambers?

P10 I332: There is another study investigating the MVK and MACR yields at similar conditions that the authors may want to add (Karl et al., J Atmos Chem 55, 167-185, 2006).

P10 I345: What about photolysis and ozonolysis reactions of product species? Please quantify, if they contributed to the loss of these species.

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