1. In my (anonymous ref #2) original comments I pointed out that there is a considerable amount of text in the introduction regarding the NO-NO_2-O_3 photostationary state equation (Eq. 1), and yet it does not appear later in the text. In their response document they note "This ratio calculated from the NO (in-situ) and NO_2 (miniDOAS remote) measurements during the EMeRGe campaign is considered to have a sufficiently large error for not to be a valuable approach to calculate the [HO_2+RO_2]", and in their revision have only added ""The PSS radical calculation made on the assumption of the NO2 steady state is very sensitive to the accuracy of the NO2 to NO ratio and the O3 measurements." Yet, the considerable amount of text and equation 1 remain in the revision. This is very confusing for the reader. If the authors insist on keeping it then they should be much more explicit that this approach is not used (e.g., at least they could add that same sentence from their response document into the manuscript). Furthermore it would be useful to the reader if they clarified that there are two HOx radical calculation methods discussed here: 1. The NO-NO2 interconversion photostationary state, described by equation 1, discussed from lines 96 – 120, and 2. The pseudo-steady state analysis presented in section 4.3 "**PSS estimation of the RO_{2*} mixing ratios**" , including equation 4: P(RO_2*) = D(RO2*)

2. Another comment of mine that was not adequately addressed:

The original manuscript contains ""The dominant removal processes of RO2* in the airmasses measured up to

2000 m are the loss of OH and RO through the reaction with NOx during the radical". In my original review I noted "reactions of RO with NOx are rare and not discussed at all later in the manuscript". The revision now includes this text: "The dominant terminating processes for RO2* in the pollution plumes measured up to 2000 m are the formation of nitrites and nitrates from radical reactions with NOx."

They have not understood my main point: formation of nitrites is not thought to be a major RO_2* removal process. I am unaware of supporting data from their study or from the literature that indicates that formation of **nitrites** can be a major RO_2* sink. In their *instrument* a large amount of CH3O_2 is lost by the reaction CH3O + NO + M → CH3ONO + M, i.e. formation of methyl nitrite, but these types of reactions are thought to be quite minor in the atmosphere. If the statement that formation of nitrites is a major RO_2* sink is to be kept in the manuscript it needs to be supported (which would be difficult). Moreover, it is not clear if they are including HNO_3 as a nitrate. I suspect the correct course of action is to simply change the sentence to "The dominant terminating processes for RO2* in the pollution plumes measured up to 2000 m are the formation of nitric acid and organic nitrates"

3. Section 4.4.1. In my initial review I objected to the formulation of eq 11 (now eq 9 in revised manuscript). While I understand that the authors are referring to the analysis by Cantrell et al. (2003b), it is still very confusing:

$$P_{RO2*} = k_{RR} [HO_2 + RO_2]_2 + k_{RN} [HO_2 + RO_2] [NO_x] \qquad \text{(Eq. 9)}$$

"The first term on the right hand refers to radical radical reactions and the second term to RO_{2*}-NOx reactions where RO_{2*} is considered to be the sum of HO_2+ RO_2 and K_{RR} and K_{RN} are effective rate coefficients"

The authors (and Cantrell) are calculating P(RO_2*) by equating it to L(RO_2*) (very safe assumption), and then calculating the L(RO_2*) terms. For the last term, the relevant RO_2* loss reactions that need to be be summed in that term are the following:

$OH + NO_2 \rightarrow HNO3$

$RO_2 + NO_2 \rightarrow RO2NO2$

$HO_2 + NO_2 \rightarrow HO2NO_2$

$RO_2 + NO \rightarrow RONO2$

While the 2nd and third reactions can be combined with an effective rate constant, I simply do not see how all four terms can be combined into the single term k_{RN} $[HO_2 + RO_2]$ $[NO_x]$. The OH concentration does not necessarily scale with the $[HO_2 + RO_2]$ concentration.

Wouldn't it be simpler to calculate $P(RO_2*)$ more directly based on RO_2* formation reactions rather than the loss processes? ie, from photolysis of HCHO, O_3/H_2O, etc.

Figure 16 is a nice figure btw: I am not trying to suggest this entire section is bad, but its formulation is still problematic.

Equation 2, last term is $\sum k_{O3+alkenesk}[O_3][alkenes_k]$ – the ROx yield from this reaction should be included (i.e., 2 × the OH yield).