Thanks for considering my suggestions. In particular, thanks for updating your text to more clearly describe the limitations to your conclusions to the real atmosphere from using a simplified modeling approach. This is now much clearer to the reader in all cases and there is less risk of the reader being misled on how to interpret these results. I suggest publication after consideration of the minor suggestions listed below:

Section 3.1: I disagree that comparing the model to observations directly does not add confidence to your model. I think you should include these observations in your paper, but ultimately you can make that call as the authors of the paper. My major concern that the simplified nature of the modeling here limits the conclusions that can be drawn to the real atmosphere does not mean you cannot compare to observations. You can still compare to observations while mentioning that there is expected to be some disagreement due to the simplified nature of the model. However, if there is general agreement, which for most of the species there is except for OH and HO2, then this lends confidence in the model and it shows where there might be limitations for example with HOx.

> The authors appreciate the value that may be added by these plots, however we have taken the decision not to include them to the final paper. The authors maintain that readers should not expect direct agreement between the measurements and models in this way. While the inclusion of the plots may serve to demonstrate some limitations of the modelling approach, the authors believe that these limitations have been stated elsewhere in the paper, particularly in light of the first round of reviews.
>
> For example, the OH measurements do not reproduce the model isopleth. However, this is to be expected as each day of the campaign will involve different atmospheric conditions, such as the amount of sunlight and the concentration of VOCs. The OH plot does show that the models are generally representative of an average OH concentration across each of the days, which is why the paper discusses model-measurement comparisons in terms of campaign averages and ranges.
>
> Regardless, these plots will still be publicly available to those interested in the intricacies of this modelling approach, through the public review process for this paper. We hope that this access to the plots is satisfactory.

Section 3.6: The hydrolysis of tertiary organic nitrates are not only going to impact your particle-phase concentrations, but the dominant isomer of the isoprene hydroxy nitrates is a tertiary organic nitrate and it's loss in the atmosphere in a polluted region like Beijing may be dominantly due to uptake to aerosols and so your organic nitrate gas-phase distribution is also going to be impacted by not including this process.

> A note has been added to Section 3.6 to highlight that these particle-phase hydrolysis processes could have knock-on effects on gas-phase organonitrate concentrations, particularly in the case of IHN.
>
> Line 254: "This particle-phase hydrolysis may then have knock-on effects for the gas-phase organonitrates, particularly where the tertiary nitrate isomer comprises a large fraction of the composition, such as for IHN."

Conclusions: I agree with the editor that since you cite a number of references in the introduction based on work from the CF3O- CIMS that have led to better understanding of isoprene organic

nitrates that this would also be a good tool for validating this work and should be mentioned here too.

The final line of the conclusions section has been made more general, to reference both I^--CIMS and CF_3O^--CIMS. I have also included a reference to Br^--CIMS which has also been used in the isoprene chamber experiments discussed in Carlsson *et al.* 2023.

Line 338: “This makes long-term measurements made with chemical ionisation mass spectrometry (CIMS) a promising dataset as various CIMS techniques using a range of reagent ions (including I^-, Br^-, and CF_3O^-) have been shown to be very sensitive to these multifunctional compounds, but calibration is often difficult. (Mayhew et al., 2022; Lee et al., 2014; Schwantes et al., 2019; Carlsson et al., 2023)”