We thank the editor for the comments. The comments are listed below in black and our responses are the text in blue. New sentences/paragraphs are added to the manuscript and they are the italic fonts in green. Line numbers of new texts are listed according to the manuscript with tracked changes.

"Recent measurements during CAFÉ-Brazil clarify the importance of isoprene in the formation of nucleation particles in the UT. For this reason, quantifying the processes described in the simulations could be biased by considering only the monoterpenes. Hence, I recommend highlighting in the conclusion that this study does not consider isoprene."

Reply: We agree that the missing isoprene chemistry and emission may affect the representation of particle concentration profiles in the results. To specify this, we added the following to the limitations at line 743. The new sentences are as follows:

- *'The oxidation product of isoprene has been found to contribute to around 20 % of the total secondary organic aerosol mass (Schulz et al., 2018). Yee et al. (2020) also stated the importance of isoprene in forming preindustrial aerosol sulfate in the environments with high isoprene emissions. Thus, our results on model-observation comparisons in Sect. 3.1 may not well represent the particle compositions in Amazonian environment because we only considered monoterpenes'*

In addition, the limitation in the 4 km resolution simulation does not allow a precise description of the clouds' macro and microphysical structure. Therefore, the results should be interpreted only qualitatively."

Reply: Yes, 4 km resolution cannot fully represent the cloud properties. We added new texts at line 732 and 735 to the limitations to clarify this fact. The newly added sentences are as follows:

- line 732: *'The relatively coarse 4 km resolution cannot fully resolve all the cloud-related processes and thus, 4 km resolution may not represent the full details of the cloud macro structure and microphysics'*
- line 735: *'Then, our results that showed the number of vertically transported aerosols can only be interpreted qualitatively.'*

In addition to the changes above, we also updated the colours in Fig. 1, 2, 8, 10, 11 and 12 to make the plots easier to observe under Coblis — Color Blindness Simulator.