This paper presents an investigation into the impacts of international airport emissions on local air quality, providing insights into the chemical speciation of ambient aerosols at Madrid-Barajas Airport. The authors have addressed the reviewers' comments comprehensively, including additional data, clarifying methodologies, and enhancing the discussion on urban pollution's influence. Although minor revisions are needed to further refine the grammar and improve the clarity of some sections, the overall quality of the research is high. The findings contribute significantly to the understanding of aviation emissions and their effects on air quality, making this study a valuable addition to the field.

1. I strongly advise the authors to carefully check their manuscript or seek assistance from proofreading services to ensure it does not contain any typos, grammar errors, awkward phrasing, formatting errors, or any other issues that could cause misunderstandings. For example, lines 193-196 need to be rephrased to avoid repeating information. It should also be noted that the nitrate and sulphate species measured by AMS could contain organic nitrogen or organic sulfur. There is a typo in line 197, and the sentence in lines 199-200 is incomplete. While I will not list all the sentences that need correction here, I recommend that the authors carefully read and thoroughly check their manuscript.

2. Please add the AMS ion chemical formula when discussing the ions at certain m/z.

3. Provide a more detailed description of the two different types of lines in Figure 3.

4. Include the standard deviations of concentrations in Figure 5.

5. Lines 305 and 341-345: The authors suggest that AlkOA concentration is associated with aircraft activities because its concentration starts to increase at noon. However, it is evident in Figure S2 that the total number of flights is higher between 8:00 am and 2:00 pm compared to other times of the day, which is not consistent with the AlkOA concentration described in Figure 5. Please provide further details to support the authors' statement and conclusion in this section.

6. Section 3.3: For the correlation analysis of the three PMF factors with other studied pollutants, is the analysis done using the data collected from the whole campaign or the average data from the diurnal variation analysis? If the authors used the one-hour average data from the diurnal variation analysis, I suggest rerunning the analysis using the data from the whole campaign.

7. Lines 332-333: The authors suggest that the concentrations of BC, NOx, SO2, and CO could be influenced by meteorological conditions, which might explain

the moderate correlation observed between AlkOA and these pollutants. However, given that AlkOA is measured as part of AMS sub-micron samples, it is reasonable to assume that AlkOA would also be influenced by meteorological factors. Additionally, since BC is also in the particle phase, the influence of meteorological conditions on both AlkOA and BC should be similar.

8. Figures 5 and 6: The authors did not address the previous question about the significant decrease in AlkOA from hour 23 to hour 0, which could be associated with the large standard deviation when averaging the data to study the diurnal variation. I recommend that the authors consider the standard deviation when discussing the diurnal variation if it is large.