Dear Authors:

Thank you for your careful consideration of the referee's comments. I think that this paper is appropriate for ACP and is of interest to the community. Year-long measurements of aerosol composition at high time resolution are still scare (although the number is growing) and that these types of measurements are necessary for our understanding of the sources and chemistry leading to OA. At this point, however, I concur with Referee #3 that major revisions are still required. Please consider both the comments from Referee #3 and my comments below.

Sincerely,

Ellie Browne

General Comments

The PMF analysis, uncertainty, and sensitivity to different choices needs to be more thoroughly addressed. Although the discussion relating to the PMF analysis has been improved from the initial version, I think that additional information is still needed. For instance, the very different Q/Qexp for the two different sites needs to be addressed. This does not necessarily need to be in the manuscript, but should at least be included in the supplement. In general, it may be useful to move the discussion on the PMF analysis from the captions of the supplement figures to a text section within the supplement. This is the author's choice, but I think it would be easier for the reader to evaluate the results if the discussion was more continuous.

I think that the PMF interpretation would also benefit from a discussion about how the seasonal splits were determined. In this discussion, please address how the seasonal split impacts the derived factors. For instance, the sharp drop in LV-OOA at JST (Fig. 5) between winter and spring and the sensitivity to the seasonal split should be addressed. It would also be worth discussing why SV-OOA at JST is increasing up to the end of winter and then suddenly is no longer present. Likewise the large spike in the IEPOX-OA factor at the beginning of summer should be discussed. For the LRK, 91Fac also shows a similar discontinuity. Currently, these abrupt changes lead the reader to question some of the PMF results (as pointed out by Referee #3); addressing the sensitivity of the PMF results to the seasonal split and/or discussing chemical/meteorological changes that could explain the abrupt shifts would results would increase the reader's confidence in the PMF results.

Page 15 line 5-6: I think that there are numerous other factors (boundary layer dynamics in particular) that could also result in this trend. Please support this statement with chemical information from the measurements and/or add a discussion regarding other possible factors.

Technical Comments

Pg 2 Line 23: Please fix the wording.

Pg 6 lines 2-4: "Moreover, OC at LRK is the primary component of SOA …" I do not understand what this is trying to say. Please fix.

Pg 8 line 10 "…is about 10-20% from density" I believe you are missing the word *different.* Also, where does the 20% come from? These average differences look to be at most 13% different. If you are not referring to differences between the averages, please reword to make this apparent.

Page 10 Lines 2-4: I don't find this particularly surprising since numerous other results have found similar results. Please place your results in context of the literature or explain how this case is different.

Page 21 line 4: This should be m/z 101.

Page 23 line 11: Please point the reader to where they can find the "fair correlations" listed.

Page 24 line 14-15: I find the wording regarding a "consistent seasonal contribution" confusing since it was only observed in two season. Please re-phrase.

Page 24 line 15-17: There is only one number referred to here so I don't know what "with the higher contribution of BBOA at LRK" is referring to.

Conclusions – Be clear about what the % is referring to. There are cases where the discussion is of a percentage of total aerosol and others where it is a percentage of OA. Please clarify.

Table 2: Please include an entry in the table with the residual.

Fig.1: These graphs are very difficult to read. Please reduce the y-axis for concentration (off-scale values can be noted with something like an asterisk) so that the typical variability can be better seen. pH and LWC should be in different panels from the concentrations.

Fig 3&4: Please consider a multiplicative factor for intensities of ions at m/z > 50. Currently, differences between the various factors at m/z > 50 are difficult to distinguish and it is important that the reader be able to do this, particularly for 91fac. This is particularly true in Fig 4 since the 91Fac, IEPOX-OA, and LV-OOA factors are all quite similar at low m/z.

Fig. 8: Please add a title to the panels identifying the seasons.

Supplement: Please proofread the figures and captions. There are several times where the incorrect panel is referenced. Additionally, please ensure that all axis labels are readable.