General comments

I recommend that this manuscript should be published in ACP after the few (minor) technical corrections listed below have been addressed.

Specific comments

1. Previous review, specific comment 2 - Were the IOP1 and IOP2 samples analysed on the same day, or was the detector variation of the UHRMS monitored during the analysis period? The UHRMS will vary in sensitivity. Running samples days or weeks apart may result in a variation in the amount of species observed due to fluctuations in the UHRMS sensitivity (e.g. as the mass spectrometer becomes 'dirty', the detector sensitivity will decrease, affecting the ion intensity and subsequently the amount of species observed). This is particularly important in Figures 2 and 4 where the molecular formulae and ion abundances, respectively, are compared. If the samples were not analysed at the same time or if the detector sensitivity was not monitored, the authors would not be able to compare the ion abundance of the tracer compounds as shown in Figure 4. This is also likely to affect the comparison of the molecular formulae in Figure 2. The work presented here would then be only qualitative (rather than semi-quantitative).Were any attempts made to account for variations in detector sensitivity?

Author response - The instrument was routinely calibrated before the analysis. It must be noted that in the current study we used a nanoESI source where each sample is processed using a separate ESI tip and nozzle, so there is no carryover between samples. All samples were analysed in a random order and within 48-hours after extraction (to minimise possible methylation; therefore, the observed differences could not be attributed to the instrument contamination.

Further review - The specific comment above was in regards to detector variation, not contamination or carryover, whilst both will also affect ion intensities. The authors have not fully addressed the question. It is still unclear if all the samples were analysed at the same time or if the detector variation was monitored. The authors note that the instrument is routinely calibrated, although I suspect (based on the method details) this only for mass accuracy and not for detector variation. The instrument should notify the user during mass calibration if the ion intensities of the calibrants are too low, highlighting sensitivity issues. However I do recommend in future, that the authors run samples at the same time when they plan to compare ion intensities (if not already done so) or use standards to monitor detection variation.

Technical corrections

1. Line 225 (previous review specific comment 23), why are some compounds fragile? Please expand or reference.
Author response - The sentence has been extended to '…(e.g. highly oxygenated compounds)'.
I don't agree that all highly oxygenated compounds are fragile. Please change to '(e.g. thermally labile)'.

2. Line 127, change the fraction '1/2' to the word 'half'.

3. Line 209, Change '10 000 particles' to '10^4 particles'

4. Line 261 and elsewhere; radical on OH not used throughout text. Please change all 'OH' to '˙OH'

5. Line 283, could methyl-nitrophenol $C_7H_7NO_3$ and methyl-nitrocatechol $C_7H_7NO_4$ also come from vehicular emissions (*i.e.* toluene oxidation products), given that the site is also affected by urban air pollution?