Response to reviewer

We thank the reviewer for his/her thorough and careful review of our manuscript. Below we reply to the comments point by point. We list the original comments in black, our replies in blue, major changes or additions to the manuscript in red.

1) Figure 1 of the authors' response shows that the diurnal cycles of 60 and 73 are similar to that of COA. This should be included in the supplementary since it is important to show that the existence of these ions in the COA factor MS is not simply due to inadequate factor separation in PMF.

Thank you for the comment. We have added the diurnal patterns of m/z 60, 73 and COA (Fig. S9) in the supplementary, and expanded the supplementary as detailed below.

Section 5: SV-OOA vs COA, addition for supplementary materials:
"Apart from SV-OOA, m/z 60 and m/z 73 are also present in the mass spectrum of COA. Considering their similar diurnal pattern with COA (Fig. S9), the existence of these ions in the COA mass spectra should be not due to the inadequate factor separation of PMF"

In line 809 the authors state "This indicates that these two ions at Mong Kok were mainly imbedded in cooking emissions and background aerosol due to transport rather than in a distinct source with further details shown in the supplement (Sect. 6)."

One thing that is still not clear to me is why 60 and 73 signals have the same diurnal cycle as COA (a local source) if they are transported. Is it possible that this similarity in trends indicates that at least some of the cooking is done on a wood fire which will result in a co-emission of 60 and 73? It would be useful if the authors addressed this with a sentence.

Thank you for the comment. He et al. (2010) investigated AMS UMR mass spectra of cooking emissions from the preparation of four types of Chinese dishes on a hotplate: hand-ripped cabbage, scrambled eggs with tomatoes, Kung Pao chicken and spareribs braised in brown sauce. Despite the fact that the dishes required quite different preparation methods, they found that m/z 60 and m/z 73 were present in all their acquired mass spectra *(See Figure 1 in He at al., 2010 – mass spectra CC#1 to CC#4).*

Cooking by wood fire is not common in Hong Kong. Thus, the emissions directly from cooking dishes should be the major source of m/z 60 and 73. Combustion of pulverized coal for BBQ or hot pot rice is a potential additional source of these two ions (Wang et al., 2013).

Line 809, *addition and modification for manuscript*:
"The existence of m/z 60 and 73 in the emissions of Chinese cooking has been reported by He et al. (2010). Combustion of pulverized coal for BBQ or hot pot rice is a potential additional source of these two ions (Wang et al., 2013)."

2) Authors should point out in manuscript that there is also another potential source of 60 and 73 that has been identified by Wang et al. in their manuscript ("Characterization of organic aerosol produced during pulverized coal combustion in a drop tube furnace", Atmos. Chem. Phys., 13, 10919–10932, 2013) which has also recently been shown to be a source of m/z 60 and m/z 73.)

Thank you for this comment. We have expanded the experimental section as detailed below.

Line 809, *addition for manuscript*:
"Combustion of pulverized coal for BBQ or hot pot rice is a potential additional source of these two ions (Wang et al., 2013)."

3) At the end of sentence at line 809 it would be useful if the authors explicitly state something like "This indicates that SV-OOA is potentially impacted by transported biomass burning aerosol and/or coal burning.

Thank you for this comment. We have expanded the experimental section as detailed below.

Line 809, *addition for manuscript*:
"Additionally, the existence of transported m/z 60 and 73 indicates that SV-OOA at MK is potentially influenced by transported BBOA and coal combustion aerosol"

Reference

He, L., Y. Lin, X. Huang, S. Guo, L. Xue, Q. Su, M. Hu, S. Luan, and Y. Zhang (2010), Characterization of high-resolution aerosol mass spectra of primary organic aerosol emissions from Chinese cooking and biomass burning, Atmospheric Chemistry and Physics, 10(23), 11535-11543, doi:10.5194/acp-10-11535-2010.