I have three short comments regarding this discussion paper.

1) Regarding the calculation of black carbon fraction and non-black carbon MFR: if the BC measured by the aethalometer is soot, it is likely that these particles will be highly fractal. Thus, this may impact your calculation of non-BC MFR. Does the analysis change if you convert BC to volume and subtract this from the $V_{tot,VDMPS}$? My guess is that the $MFR_{non\text{-}BC}$ is over-estimated as a result. This may also improve the summertime correlation in Figure 6.

2) Regarding the estimation of parameters of a single component organic aerosol which does not evaporate at 280 ^{o}C: why do you select such a low enthalpy of vaporization? The value you have selected will be more similar to that of a compound having saturation concentration on the order of 10^6 μg m^{-3} [*Epstein et al.*, 2010], which is inconsistent with the saturation concentration you provide in the text.

3) Regarding the correlations of data: does BCF correlate with the PAH mass fraction? If so, this may allow for a rough source apportionment of a fraction of the ambient data, potentially complementing Figure 10. For example, if the BCF correlates with a high PAH mass fraction, this may be indicative of motor vehicle emissions while a BCF correlating with a low PAH mass fraction, this may indicate biomass burning [*Schauer et al.*, 1996] .

References:

Epstein, S. A., I. Riipinen, and N. M. Donahue (2010), A Semiempirical Correlation between Enthalpy of Vaporization and Saturation Concentration for Organic Aerosol, *Environ Sci Technol*, *44*(2), 743-748.
Schauer, J. J., W. F. Rogge, L. M. Hildemann, M. A. Mazurek, G. R. Cass, and B. R. T. Simoneit (1996), Source apportionment of airborne particulate matter using organic compounds as tracers, *Atmos Environ*, *30*(22), 3837-3855.