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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Urban organic aerosols measured by single particle mass spectrometry in the megacity of London" *by* M. Dall'Osto and R. M. Harrison

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This is well-written paper and provides an extensive analysis of the particle types observed by ATOFMS, and also a correlation with AMS analysis, which will be valuable for many researchers. I have a couple of questions, not sure if they are valuable

(1)Why the particular four particle types are selected (they together account less than 12% of the total), not other types in this paper?

(2)Introduction: are primary particles from combustion sources only? Sea spay? windblown dust?

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(3)Introduction: 5045, line 13-15. Is there any reference supporting this statement? (perhaps, Zhang et al., GRL, 2007, 34, L13801?)

(4)P5047, Line 13. Is it a HR-ToF-AMS? then the corresponding citation should be "DeCarlo et al, Anal. Chem. 2006, 78, 8281-8289"

(5)5052, Line 10: i wonder why Ca-EC is not called Ca-EC-OC (it has signatures of both OC and EC), or why Na-EC-OC is not called Na-EC?

(6)5054, line 15: Why only 100nm intervals are used, when 10nm resolution is available? does this treatment lose or not lose some information (the size distribution plots seem like lose some details in my opinion)?

(7)5061, Line 5-10: Since i am involving in a project about nucleation studies including effects of amines. I am quite strange about the statement "when the sulphuric acid content is very low, clear organo-nitrogen peaks (likely to be amines) can be seen in less acidic particles". Since amines are basic compounds, and very recent studies (See Ge et al., Atmos. Environ., 2011, 524-546 and 561-577) proves that most of them are stronger than ammonia to react with acids. It seems like that amines are more probably present in more acidic particles, not less acidic ones.

(8)The work aims to raise the combination of AMS and ATOFMS can give more insights into the composition and sources, while for me, the correlation between ATOFMS and AMS shown in table 2 seems like not convincing. Does R2=0.65 and 0.50 really mean a high correlation?

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 5043, 2011.