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Atmospheric Chemistry and Physics Discussions



# *Interactive comment on* "Contributions of local and regional sources to fine PM in the megacity of Paris" *by* K. Skyllakou et al.

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Skyllakou and co-authors present a well-written, detailed description of the relative contributions of local, medium-scale and long range-scale emission contributions to elemental carbon, sulfate, and organic aerosol mass concentrations in Paris. These estimates are discussed in terms of PMCAMx model outputs and the PSAT apportionment approach. The split between local and regional/long range contributions is very similar to that reported recently by Healy et al (2013) for the MEGAPOLI winter campaign using ground-based aerosol mass spectrometry measurements. These latter measurements support the authors' PSAT results and agreement between the two apportionment approaches is encouragingly close. The local contributions of EC, sul-

fate and organic aerosol are estimated to be 57%, 17%, and 38%, respectively using the PSAT approach, compared to 59%, 16% and 24% using the single particle mass spectrometry approach (Healy et al., 2013). A brief discussion of the very good level of agreement between PSAT-based apportionment and the aerosol mass spectrometry measurements thus seems appropriate in the manuscript.

References:

Healy, R. M., Sciare, J., Poulain, L., Crippa, M., Wiedensohler, A., Prévôt, A. S. H., Baltensperger, U., Sarda-Estève, R., McGuire, M. L., Jeong, C.-H., McGillicuddy, E., O'Connor, I. P., Sodeau, J. R., Evans, G. J., and Wenger, J. C.: Quantitative determination of carbonaceous particle mixing state in Paris using single-particle mass spectrometer and aerosol mass spectrometer measurements, Atmos. Chem. Phys., 13, 9479-9496, 2013.

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