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Interactive comment on “In-situ, satellite measurement and model evidence for a dominant regional contribution to fine particulate matter levels in the Paris Megacity” by M. Beekmann et al.

Anonymous Referee #1

Received and published: 28 April 2015

This paper represents a bringing together of various data sources from the MEGAPOLI campaign to generate an assessment of the contributions to aerosol concentrations based on a combination of receptor modelling, satellite data and regional modelling. The results themselves shouldn't be a surprise to anyone who has read any of the previous MEGAPOLI papers, but this represents a solid and authoritative attempt to reconcile the results. It also attempts to place these conclusions in the context of other cities worldwide. I find it within ACP's remit and recommend publication if they following (mostly technical or stylistic) comments are considered.

General: The authors have made use of footnotes on a few occasions, but the use

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of these is discouraged in ACP. Given that the information presented is in the form of additional information rather than technical details, these should be worked into the main text or removed.

P8650, L28: 'Charbroiling' is probably too specific a term for cooking here, as other cooking techniques (e.g. stir frying) are also known to be significant.

P8651, L20: If you are citing a specific population estimate, can you be specific about the number rather than simply saying 'more than 10 million'?

P8653, L1: 'Aethalometer' is a proper noun and should have a capital 'A'. The model number should also be specified.

P8654, L16: By 'error analysis', do you refer to the ambiguity of the PMF outputs? If so, this should be made more specific to avoid confusion with the errors used in the weighting matrix.

P8655, L2: Does automotive fuel in Paris contain ethanol? If so, this could alter the modern percentage, although the effect could be negligible if it is assumed the HOA originates solely from lubricating oils rather than fuel.

P8662, L22: 'The broader picture' is perhaps too informal. Consider revising.

Figure 1: The text on the map is difficult to read against the colours. Consider a different scheme, such as numbered markers with a legend outside of the plot.

Figure 4: Rather than 'left' or 'right', please use 'a' and 'b' to refer to the sub-figures. Also move the text above the plots rather than overlaying, for the sake of clarity.

Figure 5: Again, please use letters to refer to the sub-figures. Also, the text in the rightmost plot is so small as to be unreadable, so please revise.

Figure 10: What is the basis for the ordering of the cities on this plot?

Table S2: This data should perhaps be included in the main article; by placing the

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references in the supplement, the citations will not be included in the main references (which is used by indexing services), however given that their data is used in figure 10, it would seem that they should.

Interactive comment on Atmos. Chem. Phys. Discuss., 15, 8647, 2015.

ACPD

15, C2040–C2042, 2015

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