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Atmospheric Chemistry and Physics Discussions

Interactive comment on "BAERLIN2014 – The influence of land surface types on and the horizontal heterogeneity of air pollutant levels in Berlin" *by* B. Bonn et al.

Anonymous Referee #1

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General comment

The paper discusses the spatial heterogeneity of atmospheric pollutants concentrations in the Berlin area measured in specific campaigns using mobile measuring platforms. Correlation with land surface types is also discussed. Some interpretations about pollution sources and pollutants transformation processes are given even if often discussed qualitatively. The paper is based on a large quantity of data, it is suitable for the journal and treats an important aspect of research. In conclusion, I believe that it could be published after a minor revision that takes into account my specific comments.

Specific comments

âĂć I found a little confused the organization of the paper. It includes 4 appendices and a supplementary material. Given that there is not much difference between appendix and supplementary it would be likely better for the readers to have all this additional material in the supplement.

âĂć Table A1 should mention that bicycles have a position sensor like for the van.

âĂć Page 6 (line 4). It is indicated a temporal resolution of 6s but in Table A1 it is reported 12s.

âĂć In table A1 it should be indicated the presence of a position sensor also for bicycles.

âĂć Page 7 (line 7). Please change air-borne with airborne.

âĂć Page 8 (lines 23-32). The instruments used in the background are the same as those used in mobile monitoring? It is important, especially for number particle concentrations, to have the same size range of the measuring instruments other wise the comparison could have a relevant bias.

âĂć Page 9 (line 30). Table S2 is mentioned before table S1. Probably it should be better to change the order of sections in supplementary material.

âĂć Page 17 (line 19). Table 7 is missing in the manuscript file.

âĂć Page 17 (line 26). "found negligible" is not very quantitative. It would be possible to give a percentage?

âĂć Page 19 (lines 1-12). The aspect regarding the difference in the size range of the instruments used is important in urban areas. References regarding urban size distribution should be included. Further, a more quantitative discussion of the expected differences should be included given that instruments starting to measure at 3 nm and 30 nm are used and this could generate differences larger than measured concentrations.