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Atmospheric Chemistry and Physics Discussions

Interactive comment on "BAERLIN2014 – stationary measurements and source apportionment at an urban background station in Berlin, Germany" *by* Erika von Schneidemesser et al.

Anonymous Referee #1

Received and published: 3 January 2018

This manuscript presents a very elaborate description of a part of the results of a 3-months summer campaign in Berlin 2014. VOC and PM10 data of ground-based stations are analyzed. Data are presented with care and in great detail including supplementary material. Plenty of data were produced, which somewhat justifies that they are presented in 2 companion papers, of which the present one is the second. Data are analyzed using various techniques including statistics, comparison with emission inventories, backward trajectories. The results provide a valuable insight into the chemistry of gas and particulate phases of the Berlin urban agglomeration in summer 2014.

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Discussion paper

Specifically the contribution of biogenic sources to the reactivity of organic material is analyzed. Data are compared with previous, similar studies in other urban areas of the world such as Paris (France) and the Pearl River Delta (China). The style of the presentation is fluid and smooth. For all these reasons, the manuscript should be accepted for publication in ACP. This reviewer has only one remark and some minor editorial comments that the authors should respect when preparing the final version. Unfortunately, the manuscript does not present any novel insight or idea. It follows common lines and techniques. It is more a technical expertise than a scientifically thrilling contribution.

Remark:

There is some mismatch in arguments in that the chemical composition of PM10 is, on the one hand (section 3.5.1), discussed in terms of medium range backward trajectories of air masses and on the other hand (section 3.5.4), discussed in terms of the more local emission inventory of the Berlin area. The authors should emphasize more explicitly the limitations of both of these analyzes.

Editorial comments:

Figs. 4, 8, 9, 10, y-axes units: superscripts (“3”) should be formatted as superscripts

Fig. 5: The grey background color seems somewhat awkward. The color scale has no unit. The figure should not have a headline.

Fig. 7: Why do the axes’ scales start at mixing ratios below zero? This seems like a standard R graph, which should be optimized.

line 37 and many other places in the manuscript: Replace “ca.” by “approx.”

line 133: On first occurrence of AVUS, you may say “the so-called AVUS motorway” or similar

line 259: please subscribe the x in NOx

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