

Interactive comment on “Mobile air monitoring data processing strategies and effects on spatial air pollution trends” by H. L. Brantley et al.

Anonymous Referee #1

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This paper addresses an important issue that not been directly covered in the current literature. While the concept of mobile monitoring has been in regular practice for about a decade, the analysis and interpretation of the data have several challenges which require innovative and novel approaches, given the often high temporal and spatial resolution of such data sets. This paper is a good start to begin to explain and address these issues.

1. While it is likely outside the scope of this manuscript to address data interpretation, some mention of it would be useful. Since some of the data presented represent multiple days, a better discussion of meteorology would be particularly useful. It is mentioned briefly in section 3.3 that met varies on an hourly and daily basis, but this subject deserves a more in depth discussion. Some questions to consider: a. The

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range of SDs is resented in Table 4, but what does this mean for how data can be used?
b. When processing the data how should differences in meteorology be considered?

2. The rolling median algorithm to calculate a “real-time” background, is shown here. This method assumes that the data reach some minimum over a certain time period. However, does calculating the background in this manner introduce bias if near sources? For example, we expect elevated pollutant levels near roadways (especially if downwind) wouldn't this method artificially increase background because the “minimum” would be always affected by the roadside levels? It would also be useful to suggest a method of background correction for longer routes where the assumptions for a rolling median cannot be applied.

3. Something else for the authors to consider-in the applications of mobile data described, removal of emissions events are critical. However, it should be noted that these emissions events are indeed important in terms of personal or localized exposure, which may be better characterized by the mean.

4. Figure 5. There is little discussion of this figure in the manuscript and no mention of the wind rose and its significance.

Editorial Comments: 1. Table 3. Suggest “Sample emission factors. . .” 2. Page 10452 Line20. Few=how many exactly?

Interactive comment on Atmos. Meas. Tech. Discuss., 6, 10443, 2013.