

## ***Interactive comment on “Methodology for High Quality Mobile Measurement with Focus on Black Carbon and Particle Mass Concentrations” by Honey Dawn C. Alas et al.***

**Anonymous Referee #2**

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The manuscript ‘Methodology for High Quality Mobile Measurement with Focus on Black Carbon and Particle Mass Concentrations’ by Alas et al. describe a set of steps to assure the best quality of mobile aerosol measurements. Overall, the study is interesting and I think the information provided is very useful to the aerosol community. I would recommend acceptance of this paper with minor revisions.

GENERAL COMMENTS 1. It would be interesting if an estimate of errors would be provided “simulating” cases in which some of the steps suggested are not followed. This is because it is likely that during future campaigns similar to this all the instrumentation necessary for the detailed comparison might not be available or within the budget of

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a project. For example, what would be the error introduced if one would not have the option of duplicate runs? This could be easily quantified with the data at hand. 2. The paper is mostly well written but there are several instances where verb-subject number agreement should be corrected (some examples in the specific comments section)

SPECIFIC COMMENTS Abstract, Page 1, Line 18: “can provide following” should be “can provide the following” Page 1, line 23: “physical meaningful” probably should be “physically meaningful” Page 1, line 26: “MPSS+APSS” should be “MPSS+OPSS”? Table 1: I wish they had also used photoacoustic or extinction minus scattering techniques to check for accuracy (not just precision) Section 3.1.1: This is good, but on what particles will the aethalometer and MAAP comparison be carried out? Page 8, line 10: It would be good to provide the cause of the underestimation. Page 8, line 13: Again, it would be nice to know the potential reason. Page 8, line 19-20: “The scatter plots on the right of each time series shows...” should be “The scatter plots on the right of each time series show” because the verb refers to plots (plural) Page 8, line 25: “Large differences, on the other hand, were investigated further to determine if it is related...” should read “Large differences, on the other hand, were investigated further to determine if they are related” because the subject is “Large differences” Page 10: I had a little bit of a hard time to follow the section on “Convergence Analysis” Page 11, line 11: “the data points has to be spatially” should be “the data points have to be spatially” Page 11, line 12: “data points that is not part of the route” should be “data points that are not part of the route” Section 3.2.2: I would have liked some more guidelines on criteria to select background sites. Page 13, line 25: “measurements which uses” should be “measurements which use” Page 13, line 28: “shape factor = 1” how good is this assumption? Page 14, line 18: “The agreement for PM10 is lower” please quantify. Page 15, line 12: “AE51 data was” should probably be “AE51 data were” Page 15, line 14: it should be “mass concentration is” or “mass concentrations are” Page 21, line 7: either “unique CFF,vol are applied” or “a unique CFF,vol is applied”