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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Aerosol measurements at the Gual Pahari EUCAARI station: preliminary results from first year in-situ measurements" *by* A.-P. Hyvärinen et al.

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Response to anonymous Referee #2

We would like to thank the referee for the thorough review of the manuscript. The recommendations are now incorporated in the manuscript. Responses to individual comments (see reviewer2 comments for details):

Major comments - The calibration measures were as follows: the instruments were checked for system integrity every week. The flow rates of each instrument and zero checks with HEPA filters were made once a month. The flow rates were allowed to drift by +- 5 %. Automatic zero calibrations (with HEPA filter) for the nephelometer

were made every three hours and full calibrations with CO2-gas every month. The PM monitors were calibrated against reference mass filters every three months. This information is now added in the manuscript.

In these measurement conditions the instrumental uncertainties add little error to the measurement. The highest uncertainties come from the measurement conditions itself: how to deal with the high moisture content of the aerosols, or the high concentration levels of the aerosol. These matters are discussed in answer to reviewer 1. It is difficult to answer these questions without inter-comparison of instruments.

Specific comments

1. Inlets were mounted 1.5 – 2m above the roof. This information is now added in the manuscript.

2. APS was TSI model 3321. This information is now added in the manuscript.

3. All our analysis is based on the time that each individual trajectory spends in different sectors on the whole trajectory path so we are not merely looking at arrival directions. This way, each trajectory does provide statistical input to all the sectors it passes during its arrival, and no information is lost. We try to emphasize this information is now in the manuscript.

4. Given the poor data coverage from both short and long DMA's simultaneously, it is difficult to calculate a meaningful geometric mean diameter. Giving the preliminary nature of the paper, we would like to stick with numbers in different modes. We are planning to look at the nucleation events in more detail in the future, then we will certainly also address the question of the geometric mean diameter.

5. The diurnal pattern of the BC fraction is now shown and anthropogenic activity times are specified (morning cooking and traffic, and evening traffic).

6. Agreed, and the sentence was modified accordingly. We did not address dry deposition schemes as we feel that we do not have enough information (such as flux

measurements) to tackle such a problem.

7. Table 2 was added to the manuscript describing the seasonal variation of the data. Now, as the second year is added to the analysis, there are more grounds to provide data as figures. The full data will eventually be available through the EUCAARI community.

Technical comments

8. Corrected

9. Modified accordingly

10. The original scale in the inset of the manuscript was incorrect (miles instead of km). However, the referee is correct, and the text is now changed to “25 km south of New Delhi”

11. Corrected

12. Corrected

13. All figure legends are now formatted to be consistent; symbols with italic and units in normal font.

14. Corrected

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 9015, 2010.