

## ***Interactive comment on “Quantifying the contribution of long-range transport to Particulate Matter (PM) mass loadings at a suburban site in the North-Western Indo Gangetic Plain (IGP)” by H. Pawar et al.***

### **Anonymous Referee #2**

Received and published: 12 June 2015

This study aims to quantify the contribution of long range transport and local sources to PM loading at a station in IGP using back trajectory model and observational data at receptor site. In general, this paper is well written. The results are informative. The reviewer recommends to accept to publish this study after some modifications and clarifications.

Major comments. -Could you address the uncertainty and limitation of the quantifications derived from this study in order to guide the reader to apply the results later? -

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rewrite the abstract and conclusion parts. The current ones are long and poorly organized, so it is hard for readers to capture the major signal. To synthesize and refine the results are needed.

Specific comments. - figure 2. A. What kind of wind do you plot here? Surface, 2m? B. Have you checked the representativity of this station to NW IGP in terms of wind? In particular during monsoon season, the prevailing wind direction is south easterly instead of south westerly. Do you have any explanation? - page 11481, line 21-22. What is GDAS dataset and which analysis database do you use? - page 11419, line 4. Only 3 out of 27 are consistent with the measurement. Do you mean all seasons? How do you explain the low percentage and the representativity of the results from this study? - page 11421, line 17. In the previous study, you mentioned that the optimum is 6, but you use seven cluster here. Why? - page 11422, line 10. Did you mention figure 7 before figure 8? - page 11426, line 23. Should it be figure 9 instead of table 3? - page 11426, line 26 and page 11427, line 3. Could you specify what is the aqueous phase oxidation of gas phase precursors? Can your study derive it? If not, list reference. - page 11436, line 11. Define the exceedance before section 3.4.1 - page 11437, line 4-6, page 11438, line 2-4, line 21-22, Give references.

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Interactive comment on Atmos. Chem. Phys. Discuss., 15, 11409, 2015.

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