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Atmospheric Chemistry and Physics Discussions

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 #1

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This manuscript describes the measurements of particulate matter over two years at a site on the Indo Gangetic Plain in India, and the interpretation of those measurements using clusters of atmospheric back trajectories. The manuscript contains some important data quantifying the contributions of long range transport to the air quality exceedances observed in this important and understudied part of the world. These are my comments:

page 11412 line 28 This wording used in this sentence is repeated on page 11413 line

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6. Please rephrase. Page 11415 to 11417– the description of the meteorology of the region is very long and hard to follow without an accompanying figure. Please consider shortening this section and replacing the text with a diagram in the supporting information that shows the seasonality of the prevailing winds and pressure gradients. Figure 5 seems to provide an unnecessary level of detail. The paper is very long and details about the clusters might be best left to the supplemental. There are too many figures in general. The number of figures should be less than 10. One suggestion is to add the average trajectory shown in Figure 6 onto the plot of all trajectories in Figure 7. The average trajectory could be shown by a black line amongst all the individual trajectories for each cluster. Figure 11: it is customary to include p values when presenting linear regression statistics. Also, the use of different colors in this figure is not explained. Also two regression equations are given. Why two? Figure caption needs more explanation. Figure 12: Caption includes the phrase: “during the daytime/nighttime low” which “low” is being referred to here? Also, it would be nice to know how many exceedance days there are in each season in addition to the percentages listed for each cluster.

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