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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Source apportionment of the particulate PAHs at Seoul, Korea: impact of long range transport to a megacity" *by* J. Y. Lee and Y. P. Kim

Anonymous Referee #2

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Review of "Source apportionment of the particulate ĚĚ" by Lee and Kim

This paper presents CMB modeling results for particulate associated PAHs in Seoul Korea. This is important work since little source apportionment has been carried out in Asian countries. Overall the work was well carried out and presented. However the following comments should be addressed before publication.

P 4. A discussion of sampling artifacts and how these artifacts may or may not impact the results is needed.

P 5. A discussion about the major assumptions used in CMB is needed - particularly

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the assumption that there is no reaction between the source and receptor. How will this assumption impact the results, particularly for sources that the authors identify as being far away?

P 6&7. The discussion about time trends in emissions is interesting but doesn't really add anything to the paper. All that is really needed is the time period specific information. This discussion and associated figures could be deleted. The results should be related back to this information to help determine the validity of the modeling results.

P 8 and throughout. Use the word "transportation" not "transport" to indicate gasoline + diesel emissions.

Results. A time series of the results should be presented showing contributions throughout the year. Days which are "unusual" should be further investigated by looking at local weather conditions or using back-trajectory analysis. For example did days showing large contributions from coke have trajectories from expected regions?

"Typical" back trajectory plots for a season are not useful. It would be much better to show maps of trajectory endpoints for each season.

Table 1. The top 4 compounds should be removed.

Table 2. The text says degrees of freedom 3-8 which does not agree with the table? Why aren't there values in all of the table cells?

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 1479, 2007.