**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Source apportionment of mercury in dust fallout at urban residential area of Central India" by S. Pervez et al.

S. Pervez et al.

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Major problem of dust pollution in the study area is mostly focused on dust fallout matrix compared to other particulate matrices. The main objective of the present work is to investigate the relative source contribution estimates of dust fallout at classified atmospheric receptors in residential-urban area of central India. The method of source apportionment has been based on chemical mass balance modeling which needs multiple species based chemical profiles of observable sources and individually selected atmospheric receptor. About 24 chemical species recognized as marker species of various types of emissions made by different industrial processes, other anthropogenic and natural activities in the study region have been analyzed in dust fallout. The justification of present method of the study compared to remarks of referee is as follows:

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1.The mathematical solution of CMB is only confined to evaluate relative source contribution and need only relative proportions of concentration and deviation pattern longitudinally (uncertainty) of multiple chemical species.

2.Organic carbon/ Elemental carbon are only parts of chemical species and have shown presence as major portion (about 57-79%) of dust fallout. Such a huge concentration of OC/EC with objective of the study to investigate relative source contribution and special focus on source signatures of mercury in dust fallout needs not require drawing special focus on precision and accuracy of OC/EC content. However, four to five measurements in each dust sample have been conducted using thermo gravimetric method to maintain relative standard deviation within 5%.

3.Details of analytical approach have not been incorporated for managing the length of paper. Method and results have been majorly focused on interpretation of output data of CMB and regression analysis.

4.Most of dust fallout data measured in earlier studies have been reported in mt.km -2.m-1. These data had been measured at various urban centers in India. Earlier measurements in other studies have also shown comparable concentration of dust fallout in these regions of India. To compare the present measurements with earlier data, similar unit has been used. Effect of specific unit on CMB execution and output result has not been reported elsewhere.

In the light of above explanation, the content of the present work can be accepted for publication in the journal.

Interactive comment on Atmos. Chem. Phys. Discuss., 9, 21915, 2009.

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