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Interactive comment on "Source apportionment and the role of meteorological conditions in the assessment of air pollution exposure due to urban emissions" *by* K. Schäfer et al.

Anonymous Referee #2

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The paper presents correlation between sets of data with concentrations of gaseous air pollutants, PM composition (organic & inorganic), PM size distribution and meteorological parameters. This is a topic relevant to ACP. The PM composition data and the source apportionment have been already published by Elssasser et al., 2012. In this paper the data are presented together with concentrations of gaseous air pollutants and the meteorological data which adds a dimension to the data presented by Elssasser et al. (2012). Cross correlations between this extensive set of parameters are presented. Drivers behind the observed concentrations (emissions/meteorology) are identified with help of these correlations. Not much is said about the statistical

methods used in the paper. There is no reference given to the hierarchical clustering analysis with the Ward method. It is therefore difficult to assess if the method is the most suitable. For such a complex dataset with many dependent variables one would expect use of the Multivariate Analysis of Variance to investigate the effects of independent variables on dependent ones as well as the interactions between the dependent variables. Taking the lack of dethodology description into account the conclusions of the paper are not strong and only qualitative. The presentation is well structured, however, the text is in places rather difficult to follow as there are very long sentences and a large number of abbreviations.

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 2235, 2014.