

Interactive comment on “Highly time-resolved measurements of element concentrations in PM₁₀ and PM_{2.5}: Comparison of Delhi, Beijing, London, and Krakow” by Pragati Rai et al.

Anonymous Referee #3

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The authors present highly time-resolved measurements of size-fractionated elements in four cities in Asia and Europe. The high time resolution and size-segregated elemental dataset are indeed a powerful tool to assess aerosol composition, sources, health effects in complex urban environments. However, this kind of studies are not widespread in the literature. The full source apportionment was already presented in other articles, but the authors present an interesting and simple approach for the analysis of the dataset which allows a first characterization of the major sources, site-to-site similarities or differences and the identification of key information required for efficient policy development. Therefore I suggest it for publication after minor revisions: L. 38: add concentration before above L. 77: The sampling period in Krakow is a little different

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respect to the one in the other three sites; it should be taken into account. L. 130-132: Such a low EF for Si in all the sites is quite strange. Differences in the soil composition relative to the assumed values for the continental crust in all the sites does not seem to be a reasonable explanation. XRF is known not to be the best analytical technique to detect low Z-elements like Al or Si; probably Si is under-estimated by the instrument. The authors should add some comments. L. 141: This is not true for Krakow, see comment above. L. 181: "Si is selected as the Group 1 element", please add typical or representative element Conclusions: I think the information reported here are interesting, but the authors should stress the importance of a complete source apportionment to obtain a quantitative apportionment of the different sources.

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