

## ***Interactive comment on “Size-resolved source apportionment of ambient particles by positive matrix factorization” by J. S. Han et al.***

**Anonymous Referee #1**

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This paper shows the application of positive matrix factorization method to surface aerosol sample analysis in Gosan, Korea. It considers not only the element compositions, but also size distributions. This information is useful and meaningful. However, this paper focuses on mathematical method, and it does not clearly explain how the samples show that variation and why. For examples, the paper presents Figure 6 which shows strong temporal variation, but there is little discussion about this figure. It would be better if the paper could include scenario analysis.

P 5231. Biomass burning that includes wild forest fire is NOT an anthropogenic source. You should change this source to be biomass/biofuel combustion because biofuel burning usually has similar signal to biomass burning.

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P 5231. The source classification needs to be defined more clearly. What is Chinese aerosol? Does it include or exclude soil dust, coal combustion, oil-fired boiler et al.? If it includes other sources, this paper should clarify the overlap. If it excludes other sources, it should be “other Chinese aerosol”. I suggest remove this mixed source category.

P 5231-5232. Figure 6 shows many interesting features, like the peak of ferrous metal related source (fine) around 06/05 and the strong temporal variation of soil dust and biomass/biofuel combustion. Unfortunately the authors did not present enough discussion.

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Interactive comment on Atmos. Chem. Phys. Discuss., 5, 5223, 2005.

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