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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Characteristics of atmospheric mercury deposition and size-fractionated particulate mercury in urban Nanjing, China" *by* J. Zhu et al.

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We thank referee for the positive comments and suggestions. In our response, we have addressed all of the concerns of the reviewers and revised the paper accordingly.

Reply to Referee #1:

This paper is very well and clearly written, and presents mercury fluxes for a polluted city in China. This data shows that mercury levels are significantly above the northern hemisphere background, so this city can be considered a mercury source. As such it's careful characterisation in this paper is a useful addition to the data available. The de-

scription of the methods is strong apart from that of the analytical method used. I think more detail is required here, although they used CVAFS, they haven't mentioned if they carried out any prereduction of the samples to ensure a total mercury analysis. The authors should state what standard method they followed, or describe their methodology if they don't follow a standard method. Once the analytical chemistry method is adequately described the paper is fit for publication.

Re: The total mercury concentration in precipitation samples were determined by CVAFS followed US EPA Method 1631 (US EPA 2002). For particulate mercury samples, each filter was conditioned in desiccator for more than 24 hr and weighed by electronic balance three times with a precision of 0.01 mg before and after collection. Prior to analysis, the sampled filters were soaked in 10ml doubling diluted aqua regia solution separately and extracted using ultrasonication for 30 min, followed by digestion with a microwave digestion system for 2 hr to ensure that total mercury was dissolved. Then the extracted samples were analyzed using cold vapor atomic fluorescence spectrometer (CVAFS) followed EPA method 1631E (U.S. EPA, 2002) after cooled aside for 1 hr and added with ultrapure water to constant volume of 25ml. The detail information mentioned above have been added in Section 2.1 of our manuscript.

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 28309, 2013.

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