

Interactive comment on “Spatial and temporal distributions of total and methyl mercury in precipitation in core urban areas, Chongqing, China” by Y. M. Wang et al.

Anonymous Referee #2

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This paper reports the spatial and temporal distribution patterns of mercury in precipitation in some selected areas of Chongqing, China. The authors collected rain samples for a full year and analyzed for both total mercury and methylmercury. This study provides useful information regarding mercury pollution in one of the biggest cities in China. This work is of interest to the readers of the Journal. However, a major revision is required before being accepted for publication in the journal.

General comments:

1. There are too many syntax mistakes throughout the manuscript. A careful revision in English is required.
2. The reviewer noticed that some previous work on a similar

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topic has been done by the same group (Yang, Y. K., Chen, H., and Wang, D.Y., Spatial and temporal distribution of gaseous elemental mercury in Chongqing, China, Environ. Monit. Assess., 156, 479-489, 2009.). The authors did cite this paper, but did not provide details about the differences between that work and current one. This needs to be addressed in the Introduction. 3. The section of Results and Discussion was not well organized. A clear logic flow should be followed so that readers can understand better. For example, presentation of the results could be first carried out using figures or tables and then followed by a thorough discussion. 4. Overall, this study generated a lot of data. It seems, however, lacking a well thought discussion. For example, in section 3.3, only data was presented without any discussion.

Specific comments

It is very difficult to clearly make comments since the manuscript was not numbered. Note only a few were listed below.

1. Abstract, line 3. Delete “selected”
2. Abstract, line 4. Change “form” to “from”
3. Section 2.3 Sample analysis. Provide detection limit for nitrite instead of claiming that most values of nitrite were very low close to 0 mg L⁻¹,
4. Section 2.4 Quality Control and Statistical Analysis. How can you calculate relative standard deviation for duplicate analysis?
5. Section 2.4 Quality Control and Statistical Analysis. What do you mean by equipment blank? Is it the method blank?
6. Section 3.1 Total mercury in precipitation. Define annual volume-weighted (VMW).
7. Use correct significant figures for the numbers present in the manuscript.
8. Section 3.1. Total mercury in precipitation. The authors state that “.....whereas the lower average concentration was discovered in summer months (June, July, August) except in JY site.”. This is not true since concentrations in summer were not the lowest for BB and JY (Figure 2).
9. Section 3.1. Total mercury in precipitation. The statement “The elevated levels of THg in precipitation in main urban areas, Chongqing and in Wujiang River, Guiyang were mainly from the local and regional anthropogenic sources, while the main sources in North America and Great Lakes region may be the natural emissions such as soil

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emissions." is incorrect. Is there any evidence/reference to indicate that the major source of mercury in North America and Great Lakes region is the natural emissions (such as soil emissions), not atmospheric deposition?

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 12, 10243, 2012.

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