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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Speciated Atmospheric Mercury during Haze and Non-haze Days in an Inland City in China" *by* Qianqian Hong et al.

Anonymous Referee #2

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This paper clearly describes differences in the atmospheric concentrations of speciated mercury, during haze and non-haze days, at an inland site in central China. The most notable difference was the higher (2.5 times) PBM concentrations on haze days. This paper also used different approaches to identify potential sources and source regions for the atmospheric mercury compounds. In addition, the authors discussed chemical transformation that may have been responsible for the variation in the concentrations of the atmospheric mercury compounds.

I found this paper to be very well written and organized. The data strongly supports their conclusions. However, there are to many figures and I have only a few minor comments, mostly typos that needed to be resolved. I recommend publication in your journal.

Minor issues Line 40: "and" should be placed between "spring, summer".

Line 55 and all other lines: Several years ago, the atmospheric mercury community stopped using the term "reactive gaseous mercury". This term was replaced with "GOM", gaseous oxidized mercury. I suggest you change all of your RGM to GOM.

In fact, you mention "gaseous oxidized mercury" in line 146.

Line 148: change "limits" to "limit".

Line 187: you mentioned an arbitrarily set criterion of 4 ng m-3. I really don't know much about PSCF, but why do you use arbitrary criteria. How will different arbitrary criteria affect your results?

Line 241: "folds" should be fold or two-fold.

Line 296: change "sources region" to "source region".

Line 333: change "condition" to "conditions".

Line 391: remove (and) from you reference (Sommar et al. 2001).

Line 454: change "may plays" to "may play"

Line 456: change "greatly" to "great"

Table 2 should be updated to include mercury speciation studies conducted in the US over the past few years. There are several studies in the peer-reviewed literature that can be cited in this table, bring it up to date.

Figure 3. Can you eliminate this figure? These data on already in Table 1.

Figures 4 and 5. Can you merge these two figures into a single figure?

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