

Interactive comment on “Atmospheric mercury observations from Antarctica: seasonal variation and source and sink region calculations” by K. Aspmo Pfaffhuber et al.

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Review of “Atmospheric mercury observations from Antarctica: Seasonal variation and source sink calculations” authors: K. Aspmo Pfaffhuber et al. ACP discussions

General comments

The dataset presented is very valuable for the understanding of mercury dynamics in Antarctica. I fully support publication. The values, and very low variations, in gaseous elemental mercury (GEM) during June, July, and August are likely the best current measurements of southern hemisphere ambient background. The group is to be commended for obtaining this dataset, which is unique and increases our understanding of

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mercury dynamics.

I have some suggestion for improvement:

The paper could really benefit from a couple of GEM Vs. Ozone plots. Perhaps a 14 day period in Summer and a 14 day period in Winter.

There is a critical discrepancy between the GEM value of 0.02 to 6.04 in the text, and the values shown in Figure 2. which appear to be truncated at 3.0

Figure 2. appears to indicate diurnal variation or at least periodic GEM enhancements. A plot of the average diurnal GEM in the Summer would be a nice addition. Alternatively, the author could add a few ~10 day GEM only plots for selected time periods.

Also in figure 2, the Zeppelin data is offset a half year, but the caption does not state if the offset is forward or background. While it can be deduced from the date of paper submission that the data is shifted forward. For completion, it should be stated in the caption.

The paper contains excessive misspellings (the worse is “Atmoephric” in the Xia reference). There are also many grammar errors. The paper requires a spell check and a good proofreading.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 29117, 2011.