

## ***Interactive comment on “Comparison of mercury concentrations measured at several sites in the Southern Hemisphere” by F. Slemr et al.***

**Anonymous Referee #1**

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I think the authors could have pushed the data analysis a little further. I agree that the trends are small, but to me there seems to be a few interesting points. I outline these below.

Cape Grim, Amsterdam, and Cape Point are aligned along the same ~latitude (figure 3). Yet there seems to be some interesting differences in the data. Amsterdam and Cape Point the data seem to closely fluctuate around 1 ng m<sup>-3</sup> all year long. However at Cape Grim there is much more fluctuation and lower monthly concentrations occurred. Since Cape Grim has the longest fetch over the ocean, it would appear that there is a net loss of TGM via deposition to the ocean surface. More importantly, it hints that the ocean is not a large source to the atmosphere. These would seem to be important observations.

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Troll shows the lowest TGM in the summer months. It also has higher concentrations than Cape Grim. As a matter of fact, Troll has among the highest concentrations in the Southern Hemisphere (figure 4). Is this release of elemental Hg from the ocean in this case? One can only speculate on the reason(s) for this.

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Interactive comment on Atmos. Chem. Phys. Discuss., 14, 30611, 2014.