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Interactive comment on “Sources of atmospheric mercury in the tropics: continuous observations at a coastal site in Suriname” by D. Müller et al.

Anonymous Referee #2

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The MS by Müller et al, Sources of atmospheric mercury in the tropics: continuous observations at a coastal site in Suriname provides the first measurements of the concentrations of atmospheric mercury in the tropics. Given the current interest in the environmental sources, transport and fate of mercury, notably in the UN led process to develop a legally-binding instrument for the management of impacts of mercury on human and ecosystem health, these measurements are timely and important. The uniqueness of the site with both northern and southern hemisphere, and continental and marine, influences, is unique and enables the authors to test current source estimates and models for global mercury. Measurements of RGM and particulate mercury would enhance this data but the TGM measurements alone warrant publication in ACP.

The observations of differences between mercury concentrations in air of northern

hemisphere compared to southern hemisphere origin, and between mercury concentrations in air originating from South American land masses compared to air of maritime origin are very interesting. The former observation presents unique data for global mercury model validation, and the latter points to the large contribution from biomass burning to atmospheric concentrations and hence to the global mercury budget. In this work both models used result in over prediction of the observed mercury of NH origin.

The MS is well written and the figures effectively communicate the most relevant aspects of the data.

Interactive comment on *Atmos. Chem. Phys. Discuss.*, 12, 10223, 2012.

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