

Interactive comment on “ECHMERIT V1.0 – a new global fully coupled mercury-chemistry and transport model” by G. Jung et al.

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Received and published: 10 August 2009

Response to Reviewer #2:

First I'd like to thank you very much for the valuable comments and feedback. In the following the suggestions are commented.

to SPECIFIC COMMENTS

- 1) An evaluation of OH levels and distributions and the influence on oxidation of mercury compounds will be included.
- 2) Also the evaluation with MDN and EMEP wet deposition data will be included. Anyhow in a global model this is of limited value, most of all due to the large uncertainties

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in precipitation simulation and the comparison of point measurements to the mean over a large grid cell. Hence the evaluation will be extended also to a more precise look at the rainfall amounts at the respective locations/grid cells.

- 3) This part will be reformulated as suggested
- 4) That's right, an increase over a few-year period can also be due to inter-annual and inter-decadal variabilities in transport and meteorological conditions and not necessarily or not only due to changes in emissions. This will be reformulated.
- 5) A short evaluation of precipitation will be added.
- 6) This was right, ECHAM5 is a spectral transform model. As it is a pseudo spectral and not a pure spectral model, which means, some variables (non-linear terms – inclusive parameterizations) are calculated in grid point space, the dynamical part is formulated as truncated series of spherical harmonic functions, a transformation from and to grid point space has to be performed. References for the methodology can be found in Roeckner et al., 2003 (MPI report No. 349).

Interactive comment on Geosci. Model Dev. Discuss., 2, 385, 2009.

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