Atmos. Chem. Phys. Discuss., 12, C7207–C7208, 2012
www.atmos-chem-phys-discuss.net/12/C7207/2012/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Global and regional emissions estimates for HCFC-22" *by* E. Saikawa et al.

Anonymous Referee #2

Received and published: 20 September 2012

Review of Saikawa et al. This manuscript presents work on estimating global and regional emissions of HFC22, a potent greenhouse gas and an ozone depleting substance. The authors use the latest data from 8 NACP tower sites, AGAGE, ESRL/GMD , and NEIS networks, they employ MOZART model and an Bayesian inverse methodology to infer the sources. The manuscript is clearly written and very easy to follow. Both the global and the regional studies are interesting, although the global one seems to just confirm what the earlier studies have found already. In the regional study, the sensitivity of testing smaller and larger division into regions is a nice way to test the aggregation error. All the figures, except as noted below, are very clear and helpful.

I am not very familiar with the manipulation of flask measurements and was surprised to read about the ratio being applied. Is this a standard practice? It would be helpful to

see a reference.

It would be expected to read at least a few sentences of background on STE in MOZART and stratosphere in general in MOZART: do we expect any more uncertainty? It would also be useful to read some more justification of using quite old OH fields. How do they compare to the other OH fields others have used since then?

In Eq. 1, if "y" is the difference between measured and modeled, then shouldn't "x" be the difference between priori and optimized?

P18262, line 22: suggestion to replace "uncertainty reduction increases" with "uncertainty decreases". That sentence is a bit confusing and it's hard to tell what the second "increase" means.

P18265, line 16-19: will higher resolution models help if there is so little data? Figures 6-10: Please increase the fonts in the figures, especially the labels are hard to read

---

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 18243, 2012.