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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Bromine and iodine chemistry in a global chemistry-climate model: description and evaluation of very short-lived oceanic sources" *by* C. Ordóñez et al.

Anonymous Referee #1

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This article presents a major step towards global modelling of VSL halocarbons. Previous model studies suffered from very crude emission estimates. The authors provide new emission estimates and evaluate these and the applied halocarbon chemistry mainly based on air craft and some cruise data. I'd fully approve publication of this article mainly as it is. Only a few minor comments / revisions remain:

Scientific comment(s):

- From your text and tables it is not clear to me which data you used to construct the emission fluxes and which one you used for the evaluation. Could you indicate (esp. in Table 1), which data set is used for what? If you use the same data for

the construction of the emission fluxes and for the evaluation, wouldn't this be a self-fulfilling prophecy? Add a respective discussion to the article.

- p. 27444, second paragraph: a known shortcoming of convection schemes in global models is the vertical extent of the convection. As convection is a major point of your reasoning you should comment on which convection scheme you use and if it reaches high enough (esp. in the tropics).

Typos + friends:

- Bottom page 27430: Please provide the list of the studies which used background concentrations, as you also provide the list for the investigations using top-down methods.
- The begin of Sect. 4.2 would be easier to read if you use a bulleted list instead of enumerating the different sources within the continuous text.
- p. 27442, l. 10: I assume the first "that" should be a "than"?
- p. 27443, l. 16: "in the globe" → "on the globe"
- Figs. 3 + 4: At least in the "printer-friendly" version of the paper, the dots are so small that it is hard to compare the different panels to each other. As there are no data about Africa, Europe and Antarctica, I recomment to enlarge the important parts of the graphics by showing more or less only those areas where data is available.
- Fig. 5, 7-10: These figures should be larger in the final version of the article, as the axis lables are on the edge of being to small.
- caption Fig. 11, line 5: $H_2ICl \rightarrow CH_2ICl$

- caption Fig. 11, line 12: moths → months

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 27421, 2011.