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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Coupling of HO_x, NO_x and halogen chemistry in the Antarctic boundary layer" *by* W. J. Bloss et al.

Anonymous Referee #2

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The paper describes the results of a modeling study of data obtained during the austral summer at the costal Halley Research station. While the model reproduce halogen oxides, BrO, IO and NO_x reasonably well, it overestimates at the same time the measured HO_x concentrations.

Some minor questions:

- if the model underestimates HO_2, but describes IO & BrO quite well, how does the measured NO/NO_2 ratio fit into the picture ?
- how does the HO_x model/obs ratio depend on NO ?
- when the model overestimates OH, is the production of CH_3O_2 overestimated

as well, and how does this affect the NO/NO_2 ratio and the HO_x sink via CH_3O_2+HO_2 ?

- is the temperature of the LIF instrument inlet biased by absorbed radiation or the temperature of the inside instrument towards higher temperatures and does this affect any reaction rates in the model ?
- photolysis frequencies instead of rates ?

Interactive comment on Atmos. Chem. Phys. Discuss., 10, 15109, 2010.