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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Concentrations of OH and HO_2 radicals during NAMBLEX: measurements and steady state analysis" *by* S. C. Smith et al.

Anonymous Referee #1

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The paper gives a very thorough presentation of the HOx data measured during NAMBLEX and an analysis based on steady state model calculations. The paper could be shortened significantly without loosing its scientific impact. This would help the reader to focus on the main scientific results of the paper. I would recommend including either more science into the case studies or perhaps even better to drop them completely as they seem not provide any further information for the scientifc discussion later in the paper.

some further comments :

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EGU

p 12412 l 23/24 Is the distance of 400mm between nozzle and detection zone the same for OH as well as for HO2 ?

p12415 l 20 Surprising that there is not even a 10% effect visible. How much is the theoretical effect of water quenching based on the measured/published quenching coefficient for this setup on the sensitivity ?

p12416 l 24 It is not clear why Sdb (PMT dark counts) is zero during night time. Could it be that Slb (solar background) is meant ? (possible typo ?)

all figures : larger fonts for axis annotations

p12419 l 7 NOx might give a better measure for daily averages.

fig 6 hard to see the modeled lines, possible to plot the measurements as dots ?

p12430 l 14. Was the total OH reactivity measured during NAMBLEX ?

p12430 l 25 How important is the H2 concentration for the steady state model in regard to the overall HO2 production ?

p12435 l 7 The uptake of HO2 on aerosols is certainly a very interesting topic with a lot of potential for scientific studies. Though an uptake coefficent for HO2 of unity is very high, are there any lab experiments that can support this claim ? Does the discrepancy of model vs measurement depend on aerosol properties ?

p12438 Is the OH model discrepancy dependent on NO ?

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 12403, 2005.