

Interactive comment on “Midlatitude ClO during the maximum atmospheric chlorine burden: in situ balloon measurements and model simulations” by B. Vogel et al.

Anonymous Referee #2

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Vogel et al present an interesting analysis of two balloon profiles of ClO made in 1996 and 1999. I think the paper is a worthy contribution and should be published after the following major issues are addressed.

1. The authors neglect to discuss aerosol levels in the model or in the atmosphere at the time of these measurements. The low aerosol surface area is important for understanding ClO as it substantially alters the partitioning of NO_x/NO_y. This discussion impacts the section on NO_x in particular. 2. If I have correctly understood the model setup section, it seems that the ozone profile used in the model used to calculate pho-

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tolysis rates is derived from simulation with a 2-D model? I don't understand why the ozone profile is not setup from the ozone-sonde measurements pieced together with the appropriate HALOE observations above. Error in the ozone column could clearly lead to simulations errors of the type described in the paper. Error in the ozone column can also impact the discussion of the ozone budget (P-L). 3. In general, my read of the figures and results is that they support the general conclusion that our understanding of stratospheric ClO is excellent. Perhaps this point should be better emphasized.

There are a number of minor points of editing that I believe a careful check by the author and co-authors can address.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 875, 2005.

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