

Interactive comment on “A study of polar ozone depletion based on sequential assimilation of satellite data from the ENVISAT/MIPAS and Odin/SMR instruments” by J. D. Rösevall et al.

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The method outlined in Rex et al. (1998) achieves very good accuracy and the spatial and temporal coverage of balloon sondes is certainly sufficient to quantify ozone depletion in the polar vortex. Satellites however supply much more frequent ozone measurements than do sondes even in the best of winters. Our intention has therefore been to use data assimilation as a complementary method for mapping exactly where and when ozone depletion occurs. We will try to express ourselves a bit more diplomatically in the revised manuscript.

The 5% underestimate of ozone loss was derived by observing that the potential temperature in the vortex decreased with 30K on the 475K level. It was therefore assumed

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that the ozone concentrations in the passive field should have increased by 3/5 of the difference between the vortex average ozone concentrations on the 475K and 525K potential temperature levels in the model. An explanation will be given in the revised manuscript.

A comparison to results in the suggested articles will also be made.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 9967, 2006.

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