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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Bias determination and precision validation of ozone profiles from MIPAS-Envisat retrieved with the IMK-IAA processor" *by* T. Steck et al.

T. Steck et al.

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We thank referee 1 for his/her helpful and comprehensive comments. With respect to his/her suggestions we will perform the following changes:

Reply to the specific comments:

1) Validation is limited to high spectral resolution data:
We will mention in the abstract that the validation is done for high spectral resolution data only.
We expect similar data quality for the low spectral resolution period. However, a final

answer on that can only be given after validation of these data.

2) Errors of comparison measurements:
The errors used in the assessment of precision are taken either from the cited publications or from the data itself. The figures in section 5 (precision validation) show mean random errors for each of the comparison instruments.

3) We will add 'generally' in the abstract.

4) This part of the sentence could be misleading and we will remove it.

5) The validation approach described in Rodgers (2000) is based on a profile by profile validation. In contrast to that we perform the validation altitude-wise. For clarification we will add the reference above.

6) What background data is used to convert lidar number density into vmr?
Below 30 km altitude, pressure and density profiles from local radiosondes are used to convert the ozone concentration to ozone mixing ratio. Above 30 km, aerosol scattering is negligible, and the lidar itself provides the density and pressure profile for the conversion. At all altitudes, the conversion can introduce errors, which are typically smaller than 2%.

7) Small difference in MW partial column comparison at Kiruna:
At first sight this very good agreement in partial columns compaired to the larger differences in vmr comparison at 20 km is indeed a little surprising. However, when calculating the partial columns for MIPAS and MW Kiruna, we use different pressures and temperatures for the different instruments. Therefore it is not so easy to conclude

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from vmr differences to partial column differences.

8) We will change the value which is 603 nm.

9) We will correct the sentence as suggested.

10) Will be corrected.

Interactive comment on Atmos. Chem. Phys. Discuss., 7, 4427, 2007.