

Interactive comment on “Geophysical validation of SCIAMACHY Limb Ozone Profiles” by E. J. Brinksma et al.

Anonymous Referee #1

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1. General Comments The paper provides a good evaluation of the products for two current ozone profile retrievals from SCIAMACHY limb scatter measurements. The research identifies areas where the retrievals have problems and attempts to determine likely causes, e.g., pointing uncertainty, latitude and SZA dependence.

2. Specific Comments The removal of OL data with the screening process (and the need to do so) are an initial validation (or invalidation) of these retrievals. This screening will clearly have an effect on the average differences found in the comparisons. The work to determine why this algorithm is producing such poor retrievals is admittedly outside of the scope of this study. The absence of averaging kernels for the OL results also limit the interpretation of the comparisons. Given the results for the OL retrievals,

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it would be more appropriate to term the work "evaluation" rather than "validation".

The use of the phrase "characteristic zig-zag shape with a wavelength of approximately 8 km" is problematic. Figures 3 to 8 do show back and forth changes in the biases with height, but there is not uniformity across the comparisons in the heights or magnitudes of the maxima and minima. In addition, there are likely multiple reasons for these variations, e.g., problems with specific profile products at the top or bottom leading to changes in biases for those levels, remaining height errors or retrieval smoothing affecting comparisons near the peak ozone levels near 25 KM, and "ringing" of profiles about the true profiles for some retrieval systems.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 4893, 2005.

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