Validation of the new operational Limb Ozone product
SCIAMACHY ESA V6

N. Rahpoe¹, K. Weigel¹, M. Weber¹, A. Rozanov¹, H. Bovensmann¹, J.P. Burrows¹

1-IUP Bremen

Abstract

The validation of new limb ozone product from SCIAMACHY measurement onboard the Envisat satellite is presented and the improvements toward the last version (V 5.2) are shown. In addition the comparison will be performed toward 10 different limb ozone measuring instruments which cover the period of SCIAMACHY lifetime, i.e. 2002–2012, with the similar method as for V5.2 The result of the validation indicates, that the issues from the V5.2 have been resolved in the lower stratosphere.

Summary and Conclusion

The overall difference between V6 toward the V5 is small (< 5%). Minor changes are expected for behavior of V6 toward other ozone retrieving sensors. Overall, V6 seems to reduce the bias observed in tropical band in V5 (Fig. 2 left panel) by 3% at 25 km, and by 3% at 45 km (Fig. 8). On the other hand the addition of UV Hartley band in the retrieval scheme of V6 will increase the bias by 2% at 38 km due to non-smooth transition of spectral bands from UV to VIS. The V6 will have a small impact on the order of 2% for the reduction of the bias observed at 30 km by V5 (Fig. 2 left panel).

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