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Validation of SCIAMACHY tropospheric NO₂-columns with AMAXDOAS measurements

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Abstract. Tropospheric NO₂ vertical and slant columns from the new satellite instrument SCIAMACHY on ENVISAT are validated by measurements of the Airborne Multi AXis DOAS (AMAXDOAS) instrument on board the DLR Falcon. The results presented here were obtained in February 2003 on a flight over the Alps, the Po-Valley and the Mediterranean. The tropospheric vertical column measured by AMAXDOAS varied between 16.2 and 35.2*10¹⁵molec/cm² over the Po-Valley where SCIAMACHY data resulted in 19.9 to 37*10¹⁵molec/cm². Over less polluted areas a similarly good agreement was found. The linear correlation between the two datasets results in a slope of 0.93. The slight differences observed can be attributed to the different spatial resolution and the temporal mismatch between the measurements over the Po-Valley.

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