



## **One Decade of GOME and SCIAMACHY Tropospheric Measurements - Results, Applications, and Outlook**

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Many aspects of tropospheric chemistry and composition change through anthropogenic activities act on regional or even global scales. For such processes, global measurements are needed to better define the current state of the atmosphere, to quantify changes and to initialise and validate global atmospheric models. For some species, measurements from satellite instruments can provide such data sets.

In this presentation, an overview will be given on tropospheric measurements from two European instruments, the Global Ozone Monitoring Experiment (GOME) and the SCanning Imaging Absorption spectroMeter for Atmospheric CHartographY (SCIAMACHY). The combined data set of these two instruments now covers more than a decade, and this time series will be further extended with measurements from the GOME-2 series to be launched on the METOP platform.

The main tropospheric target species for UV/visible measurements are  $\text{NO}_2$ ,  $\text{SO}_2$ ,  $\text{HCHO}$ ,  $\text{H}_2\text{O}$ , and  $\text{BrO}$ , the SCIAMACHY NIR channels adding  $\text{CO}$ ,  $\text{CH}_4$  and  $\text{CO}_2$ . Global data fields of these species together with their seasonal and inter-annual variability provides insights into such diverse fields as regional air quality and its changes, biogenic VOC emissions, and halogen chemistry in the polar spring boundary layer, and examples for such applications will be given in the talk.