



Validation of GOMOS, SCIAMACHY and MIPAS ozone and temperature profiles with lidar measurements

Anne van Gijsel, Daan Swart, and the VALID Team

RIVM, Centre for Environmental Monitoring (CMM), Bilthoven, the Netherlands

Satellite sensors provide global observations of ozone and temperature distributions which can be used to study dynamics on a multitude of temporal and spatial scales. However, a major issue in deriving long-term trends from a suit of satellite instruments is inter-comparability. Ground-based measurements offer continuous time series but only at few locations. The combination of ground-based measurements with satellite data provides therefore a convenient tool to evaluate satellite instrument inter-comparability and to monitor sensor evolution as well as data quality.

The Validation with Lidar (VALID) project supports the long-term multi-mission validation of ESA's and third-party atmospheric chemistry instruments. The project involves 36 lidar stations around the world that are part of the Network for the Detection of Atmospheric Composition Change (NDACC) focussing on stratospheric ozone and temperature profiles and/or participating in the European Aerosol Research Lidar Network (EARLINET) with a main focus on tropospheric aerosol and cloud properties.

In this study we will show the comparison of stratospheric temperature and ozone profiles as retrieved by the MIPAS, SCIAMACHY and GOMOS instruments and by the lidars. If possible, we will also show the validation results for the new level 2 processor versions for SCIAMACHY and MIPAS, which are expected to be delivered in March 2010.