



An improved tropospheric ozone database retrieved from SCIAMACHY Limb-Nadir-Matching method

Jia Jia, Alexei Rozanov, Annette Ladstätter-Weißmayer, Felix Ebojje, Nabiz Rahpoe, Stefan Bötzel, and John Burrows

Universität Bremen, Insitute of environmental physiks, Physics and Chemistry of the Atmosphere, Bremen, Germany
(jia@iup.physik.uni-bremen.de)

Tropospheric ozone is one of the most important green-house gases and the main component of photochemical smog. It is either transported from the stratosphere or photochemically produced during pollution events in the troposphere that threaten the respiratory system. To investigate sources, transport mechanisms of tropospheric ozone in a global view, limb nadir matching (LNM) technique applied with SCIAMACHY instrument is used to retrieve tropospheric ozone.

With the fact that 90% ozone is located in the stratosphere and only about 10% can be observed in the troposphere, the usage of satellite data requires highly qualified nadir and limb data. In this study we show an improvement of SCIAMACHY limb data as well as its influence on tropospheric ozone results. The limb nadir matching technique is also refined to increase the quality of the tropospheric ozone. The results are validated with ozone sonde measurements.