A new retrieval method has been developed to derive stratospheric profiles of atmospheric constituents from solar occultation measurements of the SCanning Imaging Absorption spectroMeter for Atmospheric CHartographY (SCIAMACHY). This method is intentionally kept simple and based on a DOAS (Differential Optical Absorption Spectroscopy) approach.

The method has already been successfully applied to water vapour. The resulting water vapour profiles show good agreement with e.g. water vapour data provided by the Atmospheric Chemistry Explorer Fourier Transform Spectrometer (ACE-FTS) in the altitude region between about 20 to 45 km. However, the retrieval method can also be applied to other atmospheric constituents.

Here, we will present new retrieval and validation results for stratospheric water vapour and also first results for the greenhouse gases methane (CH$_4$) and carbon dioxide (CO$_2$).