Geophysical Research Abstracts
Vol. 19, EGU2017-15742-1, 2017
EGU General Assembly 2017

SCIAMACHY Spectral Response Function: Retrieval and Analysis

Mourad Hamidouche, Günter Lichtenberg, and Manfred Gottwald

Remote Sensing Technology Institute, German Space and Aerospace Center, Wessling, Germany
(mourad.hamidouche@dlr.de)

Mounted on board the ESA ENVISAT satellite, SCIAMACHY (SCanning Imaging Absorption spectroMeter for Atmospheric CHartographY) is a passive imaging spectrometer to probe a large number of atmospheric trace gas species at different wavelengths in the UV and Visible (channels 1-5) as well as in the near-infrared spectral regions (channels 6-8).

One of the key and important components that is needed to perform spectral calibration and to process Level 1 and Level 2 data is the instrument spectral response function (ISRF). Therefore, an accurate knowledge or characterization of the ISRF including both its shape and stability over time is crucial. We have therefore developed a method to retrieve the in flight ISRF using daily SCIAMACHY solar measurements over the entire lifetime of the mission. This new method allows us to parametrize and compute the ISRF, and furthermore, investigate any variations of its shape over time. We will present our analytical method for the retrieval of the ISRF and our approach for probing its behavior in different spectral channels. We will show the corresponding results and discuss the overall behavior of SCIAMACHY ISRF and how this might affect spectral calibration.