Operational cloud products from Sentinel-5P and Sentinel-4

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A precise knowledge of the cloud properties is crucial for the accurate trace gas retrieval of the atmospheric Sentinel missions. Furthermore, cloud information from UV/VIS/NIR spectrometers is complementary to the information retrieved using IR sensors.

In this work we present the operational cloud products (cloud fraction, cloud height and cloud optical thickness) from the Sentinel-5P and Sentinel-4 missions. The cloud products will be generated using the latest version of the OCRA and ROCINN algorithms that have been successfully applied to the operational processing of GOME/ERS-2 and GOME-2 MetOp-A/B data.

The ROCINN algorithm retrieves cloud top height, cloud optical thickness and cloud albedo from NIR measurements in and around the oxygen A-band ($\sim$760nm) taking as input the cloud fraction computed with the OCRA algorithm which is based on a broad-band UV/VIS color space approach.

The adaptation of the OCRA/ROCINN algorithms to the geostationary Sentinel-4 UVN instrument and the polar orbiting TROPOMI instrument on-board Sentinel-5P are described in detail.