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Comparison of clear-sky radiance and surface albedo from different satellite instruments

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The retrieval of clear-sky surface reflectance, surface albedo and cloud fraction is an important issue for the retrieval of tropospheric trace gases. During the last decade, several instruments have been established (e.g. GOME, SCIAMACHY, GOME-2, GOSAT) and new instruments will be launched in future.

The HICRU algorithm was developed for the retrieval of cloud fraction, clear-sky radiance and cloud height from GOME and SCIAMACHY. In addition, an inversion of surface albedo is possible from the clear-sky results. The algorithm is now extended and changed for application to different sensors. Especially the clear-sky and cloud-screening part is usable for a wide range of sensors and wavelengths.

This study is dedicated to compare HICRU clear-sky results for different sensors and detectors like SCIAMACHY PMD, SCIAMACHY science channel, GOME, GOME-2, GOSAT or MERIS. The results are compared and discussed with respect to their impact on cloud fraction and surface albedo retrievals.