

## **Intercomparison of TOA reflectances measured by GOME and ATSR-2 on board ERS-2**

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The measurement of the top of atmosphere reflectances is important in the global retrieval of earth's atmospheric parameters, surface properties and also for the investigation of solar UV variability. To obtain accurate information radiometric calibration of satellite instruments is important.

Since both GOME and ATSR-2 are on board the same satellite (ERS-2) this provides the possibility for an intercomparison study of both instruments. In this study the GOME reflectances in channels that overlap with the ATSR-2 channels centered at 555 nm and 659 nm with a spectral band width of 20 nm are used for this intercomparison study. GOME-1 nadir reflectance spectra version 5 available from June 1996 to 2003, and ATSR-2 gridded reflectance data available from June 1996 to 2003 are the data used for this investigation. The reflectances have been subdivided into cloudy, and cloud free scenarios using the GRAPE cloud fraction dataset. The cloud free scenarios have been further subdivided into dark and bright scenes using the TEMIS LER climatology data at 555 nm and 670 nm.

From the preliminary results (for January 1997 and february 1997), there is a good linear relation and a strong correlation coefficient between the spectrally averaged GOME and ATSR-2 reflectances. The GOME averaged reflectances overestimate the TOA reflectances by approximately 11% at both wavelengths. Also positive relative differences between the spectrally averaged GOME reflectances and the spatially averaged ATSR-2 reflectances for both wavelengths are obtained for all scenarios (which show that the spectrally averaged GOME reflectance is systematically higher than spatailly averaged ATSR-2 reflectance).