

Intercomparison of GOME and ATSR-2 reflectivity measurements

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ABSTRACT TEXT:

On board of ESA's second European Remote Sensing satellite (ERS-2), launched in April 1995, two instruments perform measurements of the reflectivity of the Earth at the top of the atmosphere: the Global Ozone Monitoring Experiment (GOME) and the Along Track Scanning Radiometer-2 (ATSR-2). GOME is a spectrometer measuring radiation between 240 and 790 nm with a spectral resolution of 0.2-0.4 nm. The ATSR-2 is an imager with 4 bands in the solar part and 3 bands in the thermal infrared part of the spectrum; The ATSR-2 channels at 555 nm and 659 nm overlap with the wavelength range of GOME. In this presentation, the consistency of the visible calibrations of GOME and ATSR-2 is investigated. The GOME measurements have been integrated over the wavelength range of the ATSR-2 channels, taking the ATSR-2 response functions into account. The ATSR-2 measurements have been averaged over the GOME pixel size of 40x80 km². More than 100 collocated partly cloudy scenes over the Atlantic Ocean were selected for the intercomparison. For accurate collocation, it was necessary to take into account the effect of spatial aliasing of the GOME data. The main result is that the instruments agree within 4% for the 555 nm channel and within 2% for the 659 nm channel.

KEYWORDS:

ERS-2, GOME, ATSR-2, calibration, reflectivity