Surface reflectivity spectra derived from GOME data

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ABSTRACT TEXT:

Knowledge of the spectral surface albedo of the Earth is important for the interpretation of satellite measurements and for understanding the Earth's radiation budget. Differences between the spectral behaviour of the surface and that of the atmosphere are often used in satellite retrieval algorithms, in particular in cloud detection algorithms.
In April 1995, the Global Ozone Monitoring Experiment (GOME) was launched on board of the ERS-2. GOME is a spectrometer measuring the Earth's reflectivity between 240 and 790 nm with a spectral resolution of 0.2-0.4 nm.
In this presentation, spectral reflectivity measurements from GOME are shown for four typical cloud-free scenes, namely over the Saharan desert, the Atlantic Ocean, ice-snow (Greenland), and rain-forest (Brazil).
For the derivation of surface reflectivity from the spectra measured at the top of atmosphere, atmospheric correction is necessary.
Therefore, atmospheric radiative transfer calculations have been performed with the Doubling-Adding KNMI (DAK) model. Using these calculations, surface reflectivities have been derived at a number of wavelengths.
We will show the GOME data can be used to derive spectrally resolved surface reflectivities on a global scale.

KEY WORDS:
ERS-2, GOME, spectral, reflectivity, surface