



Cloud retrieval from GOME in the oxygen A-Band with SNGome: dataset assessment and global long-term cloud properties.

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The Global Ozone Monitoring Experiment (GOME) provides a global long-term (from April 1996 - present) record of backscattered sunlight, suited to the retrieval of cloud properties. The cloud-top height, optical thickness and spherical albedo are retrieved in the framework of the asymptotic theory with the semi-analytical approach of SACURA Next-Generation for GOME (SNGome), which enables considerably fast calculations in the spectral range of oxygen absorption.

The data quality assessment has been carried out with the synergistic use of cloud cover from OCRA (Optical Cloud Recognition Algorithm, delivered by DLR - Deutsches Zentrum für Luft- und Raumfahrt), surface albedo from TEMIS (Tropospheric Emission Monitoring Internet Service) and raw radiances from ATSR-2 (Along-Track Scanning Radiometer). Additional validation is performed against cloud parameters from the GRAPE (Global Retrieval of ATSR Cloud Parameters and Evaluation) dataset and ground-based measurements from ARM (Atmospheric Radiation Measurement) radar facilities.

The comparison of global cloud fields from SNGome results with ISCCP (International Satellite Cloud Climatology Project), SCIAMACHY (SCanning Imaging Absorption SpectroMeter for Atmospheric Cartography) and MODIS (Moderate Resolution Imaging Spectroradiometer) shows an overall good agreement.