



Long-term satellite-based cloud properties derived from AVHRRs within the EUMETSAT Satellite Application Facility on Climate Monitoring

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As a component of EUMETSAT's activities in climate monitoring, the Satellite Application Facility on Climate Monitoring (CM SAF) uses space-based observations from both geostationary satellites (Meteosat Second Generation, MSG) and polar orbiting satellites (NOAA, MetOp, DMSP) to provide data sets of geophysical parameters suitable for climate analysis and monitoring.

A substantial part of this initiative is dedicated to clouds and corresponding satellite-derived parameters, such as cloud coverage, type and height, cloud optical depth, and cloud water path. In the past CM SAF's focus has been on provision of monitoring products in a near real time mode based on a processing system that was periodically maintained and updated. These products provide useful information for both process studies and cloud statistics over limited intervals.

CM SAF is currently working on the re-processing of long-time data series of cloud properties based on AVHRR observations. Such re-processed and homogenized data will also support the assessment of global or regional trends, and variability of cloud parameters at different time scales. The three distinct features of CM SAF data are 1) consistent and traceable intercalibrated radiances 2) extensively validated cloud products using advanced A-Train sensors and in-situ observations and 3) long-term records covering the period 1982-2009 with global coverage. Among other important applications, these data sets will provide a reference to assess the quality of global climate simulations as for example used in the IPCC assessments. These comparisons will also be in turn used to characterize possible shortcomings in the satellite product.

This presentation will give an overview over the AVHRR reprocessing activity. Validation results as well as selected spatial and temporal features of the analysed cloud properties will be shown. Furthermore, we will discuss preliminary comparisons against GCM cloud properties.