



## Analyzing trends and variability of cloud and radiation parameters based on CM SAF's satellite climate data records

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The EUMETSAT Satellite Application Facility on Climate Monitoring (CM SAF) generates satellite-based, high-quality climate data records, with a focus on the energy balance and water cycle. Here, multiple of these data records are used to assess their consistency in trends and variability. This multi-parameter analysis focuses on Europe and covers a time period of at least 25 years.

The climate data records of surface solar radiation, top-of-atmosphere radiation and cloud fraction are analyzed in a common framework to check the consistency of spatial trends among different data records and parameters. Various statistics including trends are also compared against ground-based measurements. It will be shown that there is a good agreement between trends in surface solar and top-of-atmosphere radiation.

This contribution will give new insights on the quality and consistency of CM SAF's climate data records. In addition, it will provide an observation-based spatial view on important climate-related atmospheric processes such as cloud radiative effects.