

Save the dates: CM SAF Workshops on 24 October 2024 and 04 to 06 February 2025

Since 25 years the EUMETSAT Satellite Application Facility on Climate Monitoring (CM SAF) has generated, archived and distributed high-quality satellite-based Climate Data Records (CDR) in support of climate monitoring. CM SAF provides Essential Climate Variables (ECVs) related to the energy and water cycles as defined by the Global Climate Observing System (GCOS). The majority of our latest CDR versions cover at least the WMO reference period from 1991-2020 and with this partly exceed a temporal coverage of more than 40 years. In order to serve applications with strong timeliness requirements, CM SAF also produces Interim Climate Data Records (ICDRs), which continuous the CDR to present time and are typically released within a few days of the observations.

CM SAF will hold two workshops focussing on different topics within the next year. Both workshops will provide great opportunities to

- Obtain an overview on the CM SAF products and their applications in climate monitoring and analysis,
- network with other users and scientists
- discuss science questions around climate change and adaptation
- discuss the products with their developers and raise user requirements for improvements of our products and services
- present your use-cases of CM SAF data and products

Workshop on usage of satellite-based climate data records in climate services

On **24 October 2024** a one-day workshop will take place at **Deutscher Wetterdienst in Offenbach, Germany**.

The main focus of the workshop is on the (regular/operational) usage of the CM SAF products in climate services. Topics that will be addressed during the workshop include:

- Presentation of the EUMETSAT SAF network
- Contribution of CM SAF to climate services and policy making (e.g., NMHSs, GFCS, C3S, WMO RCC, ...)
- Use of CM SAF data in support of climate monitoring and analysis

This workshop will take place the day after the “Deutsche Klimatagung” at Deutscher Wetterdienst in Offenbach, Germany. Participants can also register for this event (meeting language is German. Separate registration is needed.). The topic of the “Deutsche Klimatagung” will be data centres and how they serve the needs for application with particular focus on Germany.

Workshop on analysis of climate change and adaptation with satellite-based climate data records

This workshop will take place from **04-06 February** 2025 in Bonn, Germany.

While our first workshop in October 2024 in Offenbach is focused on the application of our products in climate services, we will focus on scientific questions during this 2nd workshop. The key objectives of the workshop will cover

- Feedback from science community on key science questions around climate change
- Gap analysis and needed improvements in satellite-based climate data records to address these or upcoming questions
- Feedback from users on experiences made so far and expectations/requirements for the future

Both locations have a good connection to larger airports and train stations. There will be no registration fee for the participation. More details on the registration, venue and hotel accommodation as well as the agenda will be provided in dedicated announcements for the workshops.

Release of CM SAF Land Surface Temperature dataset from METeosat First and Second Generation - Edition 2 (SUMET Ed. 2) and CIOud Fractional Cover dataset from METeosat First and Second Generation - Edition 2 (COMET Ed. 2)

CM SAF released the second edition of Climate Data Records (CDR) providing Land Surface Temperature (LST, SUMET ed.2) and cloud fractional cover (CFC, COMET ed. 2) derived from the Meteosat Visible and InfraRed Imager (MVIS) on board the Meteosat First Generation (MFG) and the Spinning Enhanced Visible and InfraRed Imager (SEVIRI) onboard the Meteosat Second Generation (MSG) satellites. Original thermal radiances were inter-calibrated by the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT). The covered time period ranges from January 1983 to December 2020, thus includes MFG 2 to 7 and MSG 1 to 4. Both data records are available on a 0.05°x0.05° grid covering the entire Meteosat disk (Africa and Europe).

The Land Surface Temperature from SUMET ed. 2 is presented as hourly data and as monthly averaged diurnal cycle composites. The LST is derived from Meteosat by use of single-channel LST retrieval based on radiative transfer calculations. A summary of the retrieval algorithms is provided by Duguay–Tetzlaff et al. (2015).

The cloud fraction from COMET ed. 2 is presented as hourly, daily and monthly composites. The CFC data is derived from two Meteosat heritage channels by use of an advanced Bayesian retrieval algorithm. It employs continuous cloud scores, which are built on a contemporaneous clear sky background inversion. The Meteosat CFC is characterized by comparability to the SYNOP-based long-term CFC observations carried out at WMO ground stations. The Meteosat CFC is therefore useful to supplement the ground-based CFC estimates in areas with low station density or high spatio-temporal CFC variability.

The data records can be ordered via the [Web User Interface](#). More information on the data record and accompanying documentation is available from the DOI pages:

SUMET ed. 2: [10.5676/EUM_SAF_CM/LST_METEOSAT/V002](https://doi.org/10.5676/EUM_SAF_CM/LST_METEOSAT/V002)

COMET ed. 2: [10.5676/EUM_SAF_CM/CFC_METEOSAT/V002](https://doi.org/10.5676/EUM_SAF_CM/CFC_METEOSAT/V002)

Reference:

Duguay-Tetzlaff, A.; Bento, V.A.; Göttsche, F.M.; Stöckli, R.; Martins, J.P.A.; Trigo, I.; Olesen, F.; Bojanowski, J.S.; da Camara, C.; Kunz, H. Meteosat Land Surface Temperature Climate Data Record: Achievable Accuracy and Potential Uncertainties. *Remote Sens.* 2015, 7, 13139-13156, DOI: [10.3390/rs71013139](https://doi.org/10.3390/rs71013139)

Publications by CM SAF team

The following list gives an overview of some recently published papers by the CM SAF team covering CM SAF products and developments. Authors from the current CM SAF team are marked in bold:

Mayer, M., Kato, S., Bosilovich, M., Bechtold, P., Mayer, J., **Schröder, M.**, Behrangi, A., Wild, M., Kobayashi, S., Li, Z., & L'Ecuyer, T. (2024): Assessment of Atmospheric and Surface Energy Budgets Using Observation-Based Data Products, *Surv Geophys*. DOI: . [10.1007/s10712-024-09827-x](https://doi.org/10.1007/s10712-024-09827-x)

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