

## CM SAF Newsletter 38 July 2019- Update



### Online questionnaire on Upper/Free Tropospheric Humidity (UTH/FTH) Data Record – **Extension of closing date**

CM SAF is currently working on the developments of a second edition of a data records of upper and free tropospheric humidity (UTH/FTH) based on microwave and infrared data, respectively. In order to better understand the needs of our users, an online questionnaire has been published. The objective of this questionnaire is to gather user requirements for the second editions of these products. It aims to understand the requirements of your application, or potential application for UTH and FTH data, with a particular focus on what is required for developments in the next 5 - 10 years.

We would be very grateful if you could take about 15 minutes to complete our online survey and help us to define the specification of the next release of our data records. The online questionnaire is available via

[https://www.surveymonkey.co.uk/r/MW\\_IR\\_UTH\\_UserRequirements](https://www.surveymonkey.co.uk/r/MW_IR_UTH_UserRequirements) or the QR-Code



The questionnaire will be open until ~~26 July 2019~~ **2 Aug 2019**.

### CM SAF User Workshop in June 2019 – presentations now online

The 5<sup>th</sup> CM SAF User Workshop took place in Mainz, Germany, on 3-5 June 2019. 117 participants from 23 countries participated in the 3-day event, which coincided with the 20<sup>th</sup> anniversary of CM SAF. The workshop revolved around six working groups, which were dedicated to different geophysical parameters and application types. The actual interpretation of the satellite data was discussed as well as the potential uses to which the data can be put. The results of the fruitful discussions and the valuable feedback from the participants will also be input for the upcoming planning of the next CM SAF project phase (CDOP 4, 2022-2027).

The presentations from the User Workshop have been made available via the CM SAF webpage and can be found at the "[User Workshop 2019](#)"-page.

### Change in availability of selected SEVIRI-based environmental data records via the CM SAF Web User Interface

For a lot of our Environmental Data records (EDRs) CM SAF now provides Thematic Climate Data Records (TCDRs) and (partly) Interim Climate Data Records (ICDRs) with a better quality in coverage, algorithmic and accuracy. It is highly recommended to use these TCDRs and ICDRs. As a first step and in order to help our users to identify the most recent several

CM SAF EDR products based on SEVIRI data or merged SEVIRI+AVHRR data are only made available on request since early April 2019. A detailed list of the affected products can be found [here](#).

Information on these products will remain available on the CM SAF webpage (e.g. [change log](#), [documentation](#)).

Users are advised to order the respective TCDR and ICDR products instead of the above listed EDR products. In case users need access to these older EDR product versions, please contact the CM SAF User Help Desk via [contact.cmsaf@dwd.de](mailto:contact.cmsaf@dwd.de).

## **Release of CM SAF Surface Radiation Data Set - Heliosat (SARAH) – Edition 2.1**

In January 2019 the first update of the second edition of the Surface Solar Radiation Data Set - Heliosat (SARAH -2) has been released. It is a satellite-based climate data record of the solar surface irradiance, the surface direct irradiance (direct horizontal and direct normalized), the sunshine duration, spectral information, and the effective cloud albedo derived from satellite-observations of the visible channels of the MVIRI and the SEVIRI instruments onboard the geostationary Meteosat satellites. The data are available from 1983 to 2017 and cover the region  $\pm 65^\circ$  longitude and  $\pm 65^\circ$  latitude ( $\pm 60^\circ$  longitude and  $\pm 60^\circ$  latitude for the spectral information). The products are available as monthly and daily means, and as 30-min instantaneous data (sunshine duration is available as monthly and daily sum) on a regular latitude/longitude grid with a spatial resolution of  $0.05^\circ \times 0.05^\circ$  degrees. The data record is complemented with a comprehensive documentation of the algorithms used and the generation of the data record. Validation report and user guidance are available as well. This data record includes the data (1983 to 2015) from Edition 2.0 of the SARAH data record (doi: [10.5676/EUM\\_SAF\\_CM/SARAH/V002](https://doi.org/10.5676/EUM_SAF_CM/SARAH/V002)).

The data record can be ordered via the [Web User Interface](#). More information on the data record is available via the DOI page: [10.5676/EUM\\_SAF\\_CM/SARAH/V002\\_01](https://doi.org/10.5676/EUM_SAF_CM/SARAH/V002_01)

## **Extension of ICDR SEVIRI product portfolio for radiation products and change in product status**

Since May 2018 CM SAF provides ICDR surface radiation products from SEVIRI based on SARAH-2 algorithms (with products since January 2018). Following a successful Operational Readiness Review (ORR) the product portfolio has been extended in January 2019, for the parameters Surface Incoming Shortwave radiation (SIS), Surface Incoming Direct radiation (SID) and Direct Normalized Irradiance (DNI). CM SAF now also provides the instantaneous products in half-hourly resolution (with a timeliness requirement of 5 days). Additionally, daily and monthly sums of sunshine duration (SDU) are now available as a new ICDR product (timeliness requirement of 15 days). All products are provided on a  $0.05^\circ \times 0.05^\circ$  lat/lon grid. In order to have a smooth transition to the respective TCDR, these products are provided starting from January 2018.

Following the successful ORR and approval by CM SAF steering group, the products DNI, SID, SIS and SDU have also been declared “operational”.

## 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:

**Benas, N., Meirink, J. F., Stengel, M., and Stammes, P.:** Sensitivity of liquid cloud optical thickness and effective radius retrievals to cloud bow and glory conditions using two SEVIRI imagers, *Atmos. Meas. Tech.*, **2019**, 12, 2863-2879, DOI: [10.5194/amt-12-2863-2019](https://doi.org/10.5194/amt-12-2863-2019)

Coopman, Q.; Hoose, C.; Stengel, M.: Detection of mixed-phase convective clouds by a binary phase information from the passive geostationary instrument SEVIRI. *J. Geophys. Res. Atmos.* **2019**, 124, 5045– 5057, DOI: [10.1029/2018JD029772](https://doi.org/10.1029/2018JD029772)

**Kothe, S.; Hollmann, R.; Pfeifroth, U.;** Träger-Chatterjee, C.; **Trentmann, J.:** The CM SAF R Toolbox - Tool for the Easy Usage of Satellite-Based Climate Data in NetCDF Format. *ISPRS Int. J. Geo-Inf.* **2019**, 8, 109, DOI: [10.3390/ijgi8030109](https://doi.org/10.3390/ijgi8030109)

**Manninen, T., Aalto, T., Markkanen, T., Peltoniemi, M., Böttcher, K., Metsämäki, S., Anttila, K., Pirinen, P., Leppänen, A. and Arslan, A. N.:** Monitoring changes in forestry and seasonal snow using surface albedo during 1982-2016 as an indicator, *Biogeosciences*, 2019, 16, 223-240, DOI: [10.5194/bg-16-223-2019](https://doi.org/10.5194/bg-16-223-2019)

**Schröder, M.;** Lockhoff, M.; Shi, L.; August, T.; Bennartz, R.; Brogniez, H.; Calbet, X.; Fell, F.; Forsythe, J.; Gambacorta, A.; Ho, S.-P.; Kursinski, E.R.; Reale, A.; Trent, T.; Yang, Q.: The GEWEX Water Vapor Assessment: Overview and Introduction to Results and Recommendations. *Remote Sens.* **2019**, 11, 251, DOI: [10.3390/rs11030251](https://doi.org/10.3390/rs11030251)

**Stöckli, R.;** Bojanowski, J.S.; John, V.O.; **Duguay-Tetzlaff, A.;** **Bourgeois, Q.;** Schulz, J.; Hollmann, R.: Cloud Detection with Historical Geostationary Satellite Sensors for Climate Applications. *Remote Sens.* **2019**, 11, 1052, DOI: [10.3390/rs11091052](https://doi.org/10.3390/rs11091052)

Trent, T.; **Schröder, M.;** Remedios, J.: GEWEX Water Vapor Assessment. Validation of AIRS Tropospheric Humidity Profiles with Characterised Radiosonde Soundings. *J. Geophys. Res. Atmos.* **2019**, 124, DOI: [10.1029/2018JD028930](https://doi.org/10.1029/2018JD028930)

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