

DATA SET DESCRIPTION

Monthly mean fractional cloud cover (project CM SAF) based on CLAAS (Edition 1), supplemented with near-realtime monthly updates

Version 01/2004-12/2011: CFCv001, 01/2012-02/2012: CFCv320, 03/2012-12/2012: CFCv330, 01/2013-08/2014: CFCv340, 09/2014-12/2017: CFCv350, 01/2018-01/2018: CFCv400, 02/2018-ongoing: CFCv410

Cite data set as: CM SAF, Monthly mean fractional cloud cover (project CM SAF) based on CLAAS (Edition 1), supplemented with near-realtime monthly updates, version comprises 01/2004-12/2011: CFCv001, 01/2012-02/2012: CFCv320, 03/2012-12/2012: CFCv330, 01/2013-08/2014: CFCv340, 09/2014-12/2017: CFCv350, 01/2018-01/2018: CFCv400, 02/2018-ongoing: CFCv410, DWD Climate Data Center (CDC), recent date.

INTENT OF THE DATASET

This document describes the freely available data of the DWD Climate Data Center (CDC) produced by the Satellite Application Facility on Climate Monitoring (CM SAF). The data set given here provides a subset, for the full product and the full range of products see CM SAF (www.cmsaf.eu).

POINT OF CONTACT

Deutscher Wetterdienst
CDC - CM SAF
Frankfurter Straße 135
63067 Offenbach
Tel.: +49 (0) 69 8062-2427
Fax.: +49 (0) 69 8062-2512
Mail: contact.cmsaf@dwd.de

DATA DESCRIPTION

Spatial coverage Europe (CM SAF baseline / RCC-Europe)

Temporal coverage 01.01.2004 - last month

Spatial resolution 0.5° x 0.5°

Temporal resolution monthly

Projection regular lat/lon grid

Format(s) netCDF

Parameters CFC - Fractional cloud cover %
obs per grid box number

Uncertainties CFC Dataset 2004-2011:
Accuracy:

Bias:	2.7% (SYNOP)
RMS:	14.0 % (SYNOP)
Bias:	1.7 % (MODIS)
RMS:	8.8 % (MODIS)

CFC - Product 2012-ongoing:

Accuracy: mean error over land: $\pm 10\%$ (MODIS/SYNOP)
mean error over oceanic: $\pm 15\%$ (MODIS/SYNOP)
for viewing angles $> 70^\circ$ accuracy will be lower.

Quality information All CFC data (dataset + products) is compared with Synop and complemented with consistency checks against MODIS and Cloudsat/CALIPSO datasets (results computed as areal means over the studied area).

DATA ORIGIN

Both, CLAAS (time period 2004-2011) and the CFC product (2012-ongoing) are based on SEVIRI measurements. SEVIRI is a passive visible and infrared imager mounted on the Meteosat Second Generation satellites 1 to 4. MSG 1 to MSG 4 are geostationary satellites which, by their rotation, support an SEVIRI imaging repeat cycle of 15 minutes. SEVIRI itself is an optical imaging radiometer with 12 spectral channels ranging from the visible (approx. 0.6 micron) to the infrared of about 13.4 micron.

VALIDATION AND UNCERTAINTY ESTIMATE

For Validation see CM SAF Validation Report (VAL) and Annual Product Quality Assessment Report (AQA), both available at: <http://www.cmsaf.eu>.

CONSIDERATIONS FOR APPLICATIONS

With the dataset, regional and large scale cloud processes at different temporal scales can be studied. The main application is the monitoring of the climate compared to the long term development, see CM SAF Product User Manual (PUM) .

ADDITIONAL INFORMATION

The dataset contains a subset of the CLAAS (edition 1) dataset (DOI 10.5676/EUM_SAF_CM/CLAAS/V001)

REFERENCES

Stengel, M., Kniffka, A., Meirink, J. F., Lockhoff, M., Tan, J., and Hollmann, R.: CLAAS: the CM SAF cloud property data set using SEVIRI, Atmos. Chem. Phys., 14, 4297-4311, doi:10.5194/acp-14-4297-2014, 2014.

CM SAF: Cloud properties: Product User Manual (PUM) for dataset edition 1, http://www.cmsaf.eu/EN/Documentation/Documentation/PUM/pdf/SAF_CM_DWD_PUM_SEV_CLD_1.pdf?__blob=publicationFile

CM SAF: Cloud properties: Validation Report (VAL) for dataset edition 1, http://www.cmsaf.eu/EN/Documentation/Documentation/ValidationRep/pdf/SAF_CM_DWD_VAL_SEV_CLD_1.2.pdf?__blob=publicationFile

CM SAF: Cloud properties: Algorithm Theoretical Basis Document (ATBD) for dataset edition 1, http://www.cmsaf.eu/EN/Documentation/Documentation/ATBD/pdf/SAF_CM_DWD_ATBD_SEV_CLD_1.pdf?__blob=publicationFile

CM SAF: Annual Product Quality Assessment Reports (AQA), http://www.cmsaf.eu/EN/Documentation/Documentation/AnnualValidationRep/pdf/SAF_CM_DWD_AQA_OR2015_1_1.pdf?__blob=publicationFile

COPYRIGHT

The instructions in ftp://ftp-cdc.dwd.de/pub/CDC/Terms_of_use.pdf should be followed. The DWD website provides comprehensive copyright information.

REVISION HISTORY

This document is maintained by the DWD section KU43, last edited 19.12.2018.