CM SAF Newsletter 40
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Release of CM SAF TCDR CLAAS-2.1: CM SAF CLoud property dAtAset using SEVIRI

The CLAAS-2.1 record provides cloud properties derived from the SEVIRI sensor onboard METEOSAT second generation (MSG) satellites. This first update of the second edition (Benas et al., 2017; CLAAS 2 DOI: 10.5676/EUM_SAF_CM/CLAAS/V002; see also Stengel et al., 2014) features a temporal extension by two years (The record is now covering the time period 2004-2017) and a bugfix for the monthly CTO products.
As for previous editions of CLAAS, the solar SEVIRI channels of MSG-1, MSG-2 and MSG-3 were intercalibrated with MODIS Aqua (following Meirink et al., 2013) before applying the cloud retrievals. CLAAS-2.1 features the following cloud properties: cloud mask/type, cloud top temperature/pressure/height, cloud phase as well as cloud microphysical properties such as optical thickness, effective droplet radius and cloud water path.
The data are available on native SEVIRI resolution, i.e. 15 minutes repeat cycle and 3km (nadir) to 11km (edge of the field of view) spatial resolution. In addition, spatio-temporal averages of the above mentioned cloud properties are included: Daily and monthly averages and monthly histograms on a 0.05° x 0.05° grid as well as monthly mean diurnal cycles on a 0.25° x 0.25° grid.
The results of the comprehensive evaluation conducted for CLAAS-2 which were reported in Benas et al. (2017), remain valid for CLAAS-2.1. Along with the data, updated documentation including user guide, algorithm descriptions, reprocessing layout and extensive validation studies, is provided. With CLAAS-2.1, regional and large-scale cloud processes at temporal scales of minutes to years can be studied. SEVIRI-based surface radiation products, which were part of CLAAS in edition 1, are released in a separate dataset (SARAH-2.1).

The data record can be ordered via the Web User Interface. More information on the data record is available from the DOI page: 10.5676/EUM_SAF_CM/CLAAS/V002_01.

Change to product status “operational” for SEVIRI-based ICDR cloud products

Following a successful Operational Readiness Review and approval by the CM SAF Steering group, the SEVIRI-based ICDR products of fractional cloud cover (CFC/CM-5010) and cloud top products (CTO/CM-5030, including the data fields of height (CTH), temperature (CTT) and pressure (CTP)) have been declared “operational”.

EUMETCast channels used for distribution of CM SAF data changed on 25 March 2020

As part of a consolidation of EUMETCast channel usage, the channels used for the distribution of the CM SAF products (monthly mean of SEVIRI-based cloud fractional cover (CFC) and surface incoming shortwave radiation (SIS)) have changed on 25 March 2020.
All CM SAF products distributed on channel SAF-Africa are now transferred on channel E1B-SAF-4 (PID: 500, Multicast address: 224.223.222.28:7044).
For more details and information how to change the channel configuration, please check the respective EUMETSAT news.

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.**, **Karlsson, K.-G.**, **Stengel, M.**, Stammes, P.: Satellite observations of aerosols and clouds over southern China from 2006 to 2015: analysis of changes and possible interaction mechanisms, *Atmos. Chem. Phys.*, **20**, 457–474, DOI: 10.5194/acp-20-457-2020, 2020.

Fennig, K., **Schröder, M.**, Andersson, A., and **Hollmann, R.**: A Fundamental Climate Data Record of SMMR, SSM/I, and SSMIS brightness temperatures, *Earth Syst. Sci. Data*, **12**, 647–681, DOI: 10.5194/essd-12-647-2020, 2020.

Kouki, K., Anttila, K., **Manninen, T.**, Luojus, K., Wang, L., **Riihelä, A.**: Intercomparison of Snow Melt Onset Date Estimates From Optical and Microwave Satellite Instruments Over the Northern Hemisphere for the Period 1982–2015, *J. Geophys. Res. Atmos.*, **124**, 11205-11219, DOI: 10.1029/2018JD030197 , 2019.

Manninen, T., **Jääskeläinen, E.**, **Riihelä, A.**: Black and White-Sky Albedo Values of Snow: In Situ Relationships for AVHRR-Based Estimation Using CLARA-A2 SAL, *Can. J. Rem. Sens.*, **45**:3-4, 350-367, DOI: 10.1080/07038992.2019.1632177, 2019.

Maranan, M., Fink, A.H., Knippertz, P., Amekudzi, L.K., Atiah, W.A., **Stengel, M.**: A Process-Based Validation of GPM IMERG and Its Sources Using a Mesoscale Rain Gauge Network in the West African Forest Zone, *J. Hydrometeor.*, **21**, 729–749, DOI: 10.1175/JHM-D-19-0257.1, 2020.

Masunaga, H., **Schröder, M.**, Furuzawa, F. A., Kummerow, C., Rustemeier, E., Schneider, U.: Inter-product biases in global precipitation extremes, *Environ. Res. Lett.*, **14**, 125016, DOI: 10.1088/1748-9326/ab5da9, 2019.

Riihelä, A., King, M. D., and Anttila, K.: The surface albedo of the Greenland Ice Sheet between 1982 and 2015 from the CLARA-A2 dataset and its relationship to the ice sheet's surface mass balance, *Cryosphere*, **13**, 2597–2614, DOI: 10.5194/tc-13-2597-2019 , 2019.

Roca, R., Alexander, L. V., Potter, G., Bador, M., Jucá, R., Contractor, S., Bosilovich, M. G., **Cloché, S.**: FROGS: a daily 1° × 1° gridded precipitation database of rain gauge, satellite and reanalysis products, *Earth Syst. Sci. Data*, **11**, 1017–1035, DOI: 10.5194/essd-11-1017-2019, 2019.

Wang, Y., **Trentmann, J.**, **Pfeifroth, U.**, Yuan, W., Wild, M.: Improvement of Air Pollution in China Inferred from Changes between Satellite-Based and Measured Surface Solar Radiation. *Remote Sens.*, **11**:24, 2910, DOI: 10.3390/rs11242910, 2019.

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