Geophysical Research Abstracts
Vol. 18, EGU2016-5864, 2016
EGU General Assembly 2016

11 Years of Cloud Characteristics from SEVIRI: 2nd Edition of the CLAAS Dataset by CMSAF

Stephan Finkensieper (1), Martin Stengel (1), Jan Fokke Meirink (2), Gerd-Jan van Zadelhoff (2), and Anke Kniffka (3)

(1) DWD (stephan.finkensieper@dwd.de), (2) KNMI, (3) KIT

Spatiotemporal variability of clouds is an important aspect of the climate system. Therefore climate data records of cloud properties are valuable to many researchers in the climate community. The passive SEVIRI imager onboard the geostationary Meteosat Second Generation satellites is well suited for the needs of cloud retrievals as it provides measurements in 12 spectral channels every 15 minutes and thus allows for capturing both the spatial and the temporal variability of clouds. However, requirements on climate data records are high in terms of record length and homogeneity, so that intercalibration and homogenization among the available SEVIRI instruments becomes a crucial factor.

We present the 2^{nd} edition of the **CL**oud Property D**A**t**A**set using **S**EVIRI (CLAAS-2) generated within the EUMETSAT Satellite Application Facility on Climate Monitoring (CMSAF), that is temporally extended and qualitatively improved compared to the 1^{st} edition. CLAAS-2 covers the time period 2004-2014 and features cloud mask, cloud top properties, cloud phase, cloud type, and microphysical cloud properties on the complete SEVIRI disc in 15-minute temporal resolution. Temporally and spatially averaged quantities, mean diurnal cycles and monthly histograms are included as well. CLAAS-2 was derived from a homogenized data basis, obtained by intercalibrating visible and infrared SEVIRI radiances (of Meteosat 8, 9 and 10) with MODIS, using state-of-the-art retrieval schemes.

In addition to the dataset characteristics, we will present validation results using CALIPSO as reference observations. The CLAAS-2 dataset will allow for a large variety of applications of which some will be indicated in our presentation, with focus on determining diurnal to seasonal cycles, spatially resolved frequencies of cloud properties as well as showing the potential for using CLAAS-2 data for model process studies.