



A thirty-year cloud physical property dataset for climate studies

J.F. Meirink (1), E. Wolters (1), R. Roebeling (2), K.G. Karlsson (3), M. Stengel (4), and A. Heidinger (5)

(1) Royal Netherlands Meteorological Institute (KNMI), De Bilt, Netherlands (meirink@knmi.nl), (2) EUMETSAT, Darmstadt, Germany, (3) Swedish Meteorological and Hydrological Institute (SMHI), Norrköping, Sweden, (4) Deutscher Wetterdienst (DWD), Offenbach, Germany, (5) Center for Satellite Applications and Research, NOAA-NESDIS, Madison, USA

Within EUMETSAT's Satellite Application Facility on Climate Monitoring (CM-SAF) a reprocessing effort of about thirty years of global Advanced Very High Resolution Radiometer (AVHRR) satellite data has recently been completed. Calibrated radiances provided by the National Oceanic and Atmospheric Administration (NOAA) were used to retrieve radiative fluxes, cloud parameters, and surface albedo globally for the time frame 1982 to 2009. This new climate dataset is available from the CM-SAF website. In this presentation we evaluate the cloud physical property record including the parameters cloud optical thickness, thermodynamic phase, particle size and liquid/ice water path. Comparisons with other satellite datasets are presented, showing encouraging overall agreement. Robust spatio-temporal features are identified, and the impact of potential retrieval artifacts is discussed. Finally, the suitability of the dataset for the detection of regional long-term trends is explored.