



Long term reliable albedo datasets generated with Meteosat data

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The Committee on Earth Observation Satellites (CEOS) designed the surface albedo as one of the essential climate variables. The requirements for those essential climate variables are (i) a global coverage over long-term periods with adequate spatial and temporal resolution, (ii) reliability and accuracy as well as a (iii) quality control.

The Global Climate Observing System (GCOS) assigned to EUMETSAT an actions (T18 (TF7)) in order to prototype and test new algorithm able to retrieve surface albedo using geostationary satellites as described in the “Implementation plan for the global observing system for climate in support of the UNFCCC” document (WMO/TD No. 1219).

In this frame EUMETSAT decided to develop a new specific code, the Meteosat Surface Albedo (MSA) based on an algorithm by Pinty et al. Meteosat first generation satellites have not been designed for climatology and a prerequisite for the exploitation of the their data was the calibration of the visible channel. Before proceeding with the analysis of the complete archive (~ 25 years of data) a detailed evaluation activity on the albedo datasets generated with the MSA has been computed in order to check the compliance with the previous points (ii) and (iii). MSA is currently running in the Operation reprocessing facility of EUMETSAT in order to generate reliable albedo dataset starting from the 1982, through the analysis of data acquired by the six different Meteosat first generation platforms.

In this paper it will be presented the result of the analysis of the archive sampling (~4% of the total Meteosat first generation archive) performed to check the applica-

bility of the algorithm to the complete Meteosat series and the presence of potential problems due to the differences between those platforms (i.e. the number of bits used for the digitalization). It will be also shown that, focusing only on targets expected to be stable from a radiometric point of view (i.e. portions of desert), the albedo estimated along the last 2 decades is constant within the measurement error. This can be seen as an evidence of the good performance and reliability of the MSA along the 20 year period.