

Inter-comparison of long-term surface global shortwave measurements with ISCCP FD and GEWEX SRB

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One important task for the next project phase (CDOP, 2007-2012) within the Satellite Application Facility for Climate Monitoring (CM-SAF) is the generation of consistent long-term radiation series back to the eighties. The long-term consistency is the main prerequisite for the usability of such radiation datasets in climate studies.

Present monthly long-term global shortwave downward series from two global radiation datasets (ISCCP-FD and GEWEX-SRB) based on satellite retrievals are compared to carefully homogenized surface measurements in Switzerland from 1984 to 2004. This investigation revealed several inhomogeneities over the 21 years period, but all inhomogeneities are within the present calibration accuracy for the satellite input channels. Therefore homogenized long-term surface radiation series are going to play an important role to further improve global satellite-based radiation products in the near future.