**GCOS AOPC Task Team on Radar Observations for Climate Applications**

Background: AOPC-22 (Exeter, UK, March 2017) agreed on the creation of a dedicated task-team to work on a proposal on how best to proceed on the use of radar data for climate studies. The motivation for developing climate requirements for radar observations, stems from the need to monitor extreme convective precipitation with high spatial and temporal variations that can be seen only by radar. Extreme precipitation statistics for short durations events, important for hydrological applications, such as flood risk assessment and run-off projection, are currently based on rain gauge in-situ observations and require very long gauge records. Similar statistics could be obtained with shorter records of radar observations. In addition to hydrological applications, there are also regions where identification of dry zones is relevant, e.g. for agriculture and forest fires. Radar data can also be useful for ground-based validation of satellite-based radar data.

A short paper developed by members of the radar community was presented at the last AOPC meeting (Exeter, March 2017). This document identifies the challenges and proposes a way to move forward in the use of radar data for climate monitoring, and it will be used as the basis for the work of the Task Team.

Updated Terms of Reference:

1. Define weather radar data requirements for climate monitoring, define relevant metadata, and define best practices. Propose key parameters to be used for climate monitoring. Identify procedures for quality control of radar data specifically for climate applications.
2. Archives: Assess the status of existing international and national archives, including their accessibility, extent and quality.
3. Provide guidance on how to organize proper and standardized storage and user interface of local radar data and metadata for eventual reprocessing at a later stage to support climate monitoring.
4. Suggest procedures for handling historical data.,
5. Raise awareness and promote coordination of use of radar for climate monitoring.

Modus operandi

1. The task team shall exist for a period of 1year
2. The task team shall work primarily remotely, facilitated by GCOS secretariat. It is expected that an initial ‘in person’ meeting will be organized to discuss and agree the work-plan and deliverables, further meetings will be decided as required and subject to available resources..
3. Within 3 months of the initiation of the task team a detailed work plan and deliverable will be agreed.
4. Requirements for metadata standards shall be delivered by November 2017
5. The task team chair shall be expected to report on progress to AOPC by means of a brief written report.
6. The task team shall be expected to lead the production of a final report which may form the basis for a decision as to whether, and if so how, to proceed with recommendation for the use of radar data for climate studies.
7. The Task Team shall submit the report to relevant groups within WMO including CCL, WIGOS and CBS.

Members

Chairperson: Elena Saltikoff

AOPC: Rainer Hollmann

Expert(s): Bernard Urban, Katja Friedrich

CBS/CIMO/WIGOS:

CCl: Andreas Becker

GPCC Global Precipitation Climatology Center: TBD

CHy: TBD

GCOS secretariat: Caterina Tassone

Reference:

Way forward in Using Radar Data for Climate monitoring, 28 February 2017, GCOS document

Report by commission for Climatology Task team on the use of remote sensing data for climate monitoring IPET-Sup-2/Doc.9.1

Requirements for weather radar data: Workshop on radar data exchange, Exeter, UK, 24-26 April 2013. CBS/OPAG-IOS/WxR\_EXCHANGE/2.4