IMPLEMENTATION OF A QUALITY CONTROL SYSTEM FOR A NETWORK OF AUTOMATED WEATHER STATIONS AT CPTEC/INPE

Ana Lúcia Travezani Ferreira, Waldéneo Gambi de Almeida, Armando Câmara Júnior, Sérgio Henrique Soares Ferreira

National Institute for Space Research - INPE
Center for Weather Forecast and Climatic Analysis - CPTEC
Cachoeira Paulista / SP - Brazil

QUALITY CONTROL SYSTEM

The observations from the Collecting Platforms (PCDs) network are important for several sectors of Brazilian Society. These data are available for free distribution in the CPTEC’s webpage just after its processing. Because the automated meteorological stations can report in a high temporal frequency and its quantity is growing, they will be more important over the time. To keep the quality of the distributed data and to help the network management it is needed a complex automated quality control system. To meet these objectives we installed in the CPTEC/INPE the quality control system from MADIS (Meteorological Assimilation Data Ingest System), a software developed by the Forecast Systems Laboratory, from NOAA (National Oceanic and Atmospheric Administration).

RESULTS

The QC system produces some statistical reports for rejected observations and stations reporting bad data.

The PCDs' data are available in a MySQL Database from CPTEC/INPE. These data are extracted and used to feed the Quality Control software. The resulting flags are ingested into the Database, being available to the users.

CONCLUSIONS

Quality Control is a process to identify and mark bad observations. Only after these checks we can distribute validated data to users. The Automated Stations' data have problems that do not affect the conventional ones. However, as they can report data with a high temporal frequency and its numbers are growing, the importance of these data will grow. An automated quality control system is needed in order to evaluate these data and to help the network maintenance.

Thanks to the founding of the Program of Information Technology Applied to Meteorology (PROTIM) and the cooperation with the FSL/NOAA we were able to implement a system for Quality Control for automatic weather stations, the PCDs network. This system will benefit several sectors of the society that will have access to meteorological data with better quality.