

Operational radar wind profilers network in JMA

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Radar wind profiler (RWP) is a device that continually measures wind speed and direction in the upper air using radio waves. It plays an important role not only in monitoring atmospheric phenomena but also in data assimilation for creating initial value of numerical prediction models. The data of operational RWP network are delivered around the world via GTS and used for weather forecasting and departure/arrival of aircraft.

In April 2001, Japan Meteorological Agency (JMA) has established the RWP's network consisting of 25 observation stations throughout Japan and the control center at the headquarters of JMA in Tokyo. This network is called WINDAS (Wind Profiler Network and Data Acquisition System) and now JMA operates 33 stations.

Individual observation stations are fully automated and operators monitor all stations from the control center all the time. Operators take restoration measures as soon as possible by remote control if an alarm which means failure occurs at some station is transmitted. We keeps very high operation rate more than 99% since 2001.

WINDAS observation data are collected every ten minutes. Because signals which RWP receives from atmospheric echoes are extremely weak and contain noises from various nonatmospheric echoes, erroneous observations are sometimes obtained. So, we need to distribute observation data to users after quality management. Our various quality management procedures are conducted automatically at each phase of signal and data processing in order not to output invalid data as far as possible, and moreover the operator verify the observation data that are already checked by automatic quality management and manually invalidate abnormal observation values every one hour. We invalidate 1-2% of observation data by automatic quality management processes and less than 0.2% of abnormal data are rejected by operators.

I briefly introduce some examples of automatic/manual quality management to distribute correct WINDAS observation data.