

13.32 IMPROVEMENT OF RADAR DATA QUALITY CONTROL WITHIN RADVOL-QC SYSTEM

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The RADVOL-QC is a system developed at Institute of Meteorology and Water Management National Research Institute (IMGW-PIB) to process 3-D weather radar data aiming at quality control: the data corrections and quality characterization. The system was described in paper published in “Meteorological Application” (Ośródka et al., 2014), however more efficient approaches have been implemented since that time in terms of removal of non-meteorological echoes among others, especially ones caused by RLAN signals, which are extremely difficult to remove in the case of many interfering signals. The proposed technique is to classify different kinds of the spurious echoes and employ dedicated sub-algorithms, which are mainly based on geometrical analysis of spatial pattern of the signal across and along the radar beam. Another problem is created by windmill farms, which are not detected by Doppler filtering. The efficient solution is to use long-term statistic maps from radar reflectivity data, e.g. monthly accumulations, and interpolate from vicinity of the farm mask. In order to minimise effects of interaction of radar beam with ground on the lowest elevation, transferring of data from the neighbouring higher one is employed in areas close to the radar site. The RADVOL-QC is operationally implemented in Polish weather radar network POLRAD.