



## Quality of radar data in Europe and its consequences for NWP

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Several weather radar parameters can be used for assimilation: 3D reflectivity, 2D rainrates, radial wind, wind profiles and even dual pol parameters and refractivity. The ca. 200 radars in Europe provide large amounts of data, but also large amounts of uncertainties, e.g. is a dry pixel really dry or whether the Doppler speed was ambiguous. The European weather radar programme OPERA can support the NWP community in four ways: (1) sharing best practices among its members, (2) creating Pan-European composites suitable for verification and for some assimilation approaches, (3) sharing partially homogenized single-radar data and (4) assessing and improving the quality of the data and meta data flowing through its data hubs.

The quality control efforts in OPERA take place in many parts of production chain. The solar monitoring activity is watching participating radars for pointing errors, to reveal emerging mechanical faults. Quantitative errors of rainrate estimates are studied with long-term statistics. The pixel-level quality index of OPERA composites is based on measurement heights of the input data pixels, which are combined in different ways for different composite products, and the quality control processing. Comparing Doppler unfolding schemas and methods for production of wind profiles are steps towards improved wind data, but not yet implemented centrally.

Planning weather radar production lines is always a question of compromises: focusing in quality and resolution can decrease timeliness, improving Doppler data can reduce efficiency of clutter removal. On OPERA level, we have decided to move to three separate production lines to serve better the disparate needs of the data users: one line for fast delivery, one for best quality and one for those who want their data as raw as possible for further processing in their own systems. We will also improve the amount and quality of the metadata of the single site files.

The presentation consists of results of recent quality assessment studies and plans for the future services.