

Evaluation of the Dutch real-time radar precipitation product

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The Royal Netherlands Meteorological Institute (KNMI) produces a publicly available real-time gauge-adjusted radar precipitation product of 5-min accumulations on a 1-km grid covering 450000 squared kilometres of northwestern Europe every 5 min. It is employed for various applications, including nowcasting. The quality of the product has been much improved since 31 January 2023. The employed radar and rain gauge dataset are described, as well as the applied algorithms, such as (polarimetric) fuzzy logic clutter removal and the gauge adjustment method. The performance of the product to estimate precipitation is assessed for the last year of the old and the first year of the renewed radar product. Non-meteorological echoes are much less of an issue for the renewed product. Moreover, comparison against independent rain gauge accumulations shows that underestimation decreases by about ten percentage points to 15% for the land surface of the Netherlands. Extremes are better captured. A spatial evaluation over the entire domain generally reveals improvements in precipitation estimates. Current and upcoming developments are presented.

Here, the processing chain of the product and the product quality without employing opportunistic sensing data are explained. The evaluation also shows the limitations of the product. The product could be improved by employing crowdsourced rain gauge data, which is the topic of another presentation, that does not provide all the details on the processing chain.

The radar dataset is available at <https://doi.org/10.21944/5c23-p429> (real-time) & <https://doi.org/10.21944/e7zx-8a17> (archive).

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