Evaluation of the performance of a nowcasting technique using European radar mosaics

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ABSTRACT

The use of radar QPE maps fulfills the requirements on temporal and spatial resolution of precipitation inputs of many of the applications involved in risk assessment (such as flood forecasting in medium and small basins). Also, it has been shown that the extrapolation of radar maps produces better precipitation forecasts within the first few hours.

However, National radar networksfail at observing precipitation systems beyond the National coverage, whichlimits the performance of the nowcasting techniques and results in reduced anticipation of precipitation warnings that rarely go beyond the first 2-3 hours (examples can be found all over Europe).

In the work presented here, the mosaics generated within the EUMETNET program OPERA (integrating the radar networks of 31 weather services and covering most of Europe with a resolution of 2x2 km^2 and every 15 minutes) have been used to generate rainfall nowcasts at European scale.The work presents the extension of the nowcasting algorithm to the Continental scale, and evaluates its performance over the OPERA domain in a variety of precipitation situations. Also, the results obtained with the Continental mosaics will are compared against what it is obtained using National network mosaics.