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Precipitation nowcasting and warning at European scale

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The recent production of OPERA radar mosaics at European scale in real time has enabled the possibility of operational precipitation nowcasting based on the extrapolation of radar mosaics over the Continent at the resolution of radar mosaics (4 km and every 15 minutes).

This study analyzes the performance of the nowcasting technique in the period June-October 2012. The results show: (1) the impact of some artifacts contaminating the radar precipitation maps, (2) a clear spatial variability of the nowcasting skill, and (3) the dependence of the nowcasting performance on the meteorological situation.

Also, the ensemble nowcasting technique SBMcast (Berenguer et al. 2011) has been adapted to the use of OPERA mosaics. The performance of this probabilistic technique has been evaluated over a number of cases, also focusing on its ability to assess the uncertainty in the generated nowcasts.

The final goal of this work, carried out within the framework of the Project on Prevention of the EC Directorate General for Humanitarian Aid and Civil Protection “HAZARD Assessment based on rainfall European nowcasts”(HAREN), is using the generated nowcasts for issuing intense rainfall warnings when the observed and nowcasted values exceed the thresholds used throughout Europe.

REFERENCES

Berenguer, M., D. Sempere-Torres, and G. G. S. Pegram, 2011: SBMcast - An ensemble nowcasting technique to assess the uncertainty in rainfall forecasts by Lagrangian extrapolation. *Journal of Hydrology*, **404,** 226-240.