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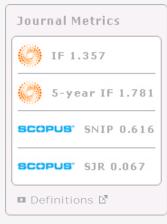
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Improving QPF by blending techniques at the Meteorological Service of Catalonia

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Abstract. The current operational very short-term and short-term quantitative precipitation forecast (QPF) at the Meteorological Serv Catalonia (SMC) is made by three different methodologies: Advecti radar reflectivity field (ADV), Identification, tracking and forecasting convective structures (CST) and numerical weather prediction (NW models using observational data assimilation (radar, satellite, etc.) precipitation forecasts have different characteristics, lead time and resolutions. The objective of this study is to combine these method order to obtain a single and optimized QPF at each lead time. This combination (blending) of the radar forecast (ADV and CST) and precipitation forecast from NWP model is carried out by means of d methodologies according to the prediction horizon. Firstly, in order advantage of the rainfall location and intensity from radar observa phase correction technique is applied to the NWP output to derive additional corrected forecast (MCO). To select the best precipitatio estimation in the first and second hour (t+1 h and t+2 h), the infor from radar advection (ADV) and the corrected outputs from the mo (MCO) are mixed by using different weights, which vary dynamically according to indexes that quantify the quality of these predictions. procedure has the ability to integrate the skill of rainfall location ar patterns that are given by the advection of radar reflectivity field v capacity of generating new precipitation areas from the NWP mode the third hour (t+3 h), as radar-based forecasting has generally lov only the quantitative precipitation forecast from model is used. Thi: blending of different sources of prediction is verified for different ty episodes (convective, moderately convective and stratiform) to obt robust methodology for implementing it in an operational and dyna

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