



On the structure of very short-term QPF errors. A first step for probabilistic radar-based nowcasting

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The inclusion of the stochastic component in radar-based rainfall nowcasts is a topic that has arisen interest within the community using radar rainfall maps in hydrology. For such an application, it is crucial to characterize not only the magnitude of the errors but also their spatial and temporal consistency, typically by generating an ensemble of equiprobable rainfall scenarios. Up to now, the generation of ensembles has been done under a number of simplifications that may limit the reliability of the generated ensembles.

Here, we have carried out a thorough analysis of the systematic and random components of the errors affecting radar-based nowcasts. This has been done using rainfall forecasts generated with the McGill Algorithm for Precipitation nowcasting by Lagrangian Extrapolation over the Eastern US. The study has focused on analyzing the dependence of the error structure on the location, season (the experiments have been repeated for spring and summer) and time of the day (to analyze the impact of the diurnal cycle of precipitation).