



## **Evaluation of a Spectral-Based Nonlinear Stochastic Nowcasting Model (PhaSt) on Italian radar mosaic**

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The forecasting of precipitation events and flash floods are critical for civil protection. The temporal and spatial resolution of weather radar data as the input for nowcasting models has shown significant promise in improving forecasts in recent years. This work aims to evaluate the performance of a Spectral-Based Nonlinear Stochastic Nowcasting Model (PhaSt) in the Italian radar domain with 76 rainfall events and to assess the hydrological applicability of the forecasts for small to medium size river basins. The results were validated by comparison of the forecasted precipitation fields with the radar observations and by computing simple forecast skill scores. In addition to model evaluation based on seasonal occurrence, the 76 weather events considered were also classified into 2 types: long-lived and spatially distributed (Type I) or brief and localized (Type II). The results showed that PhaSt produced good results for up to 60 minutes for all seasons and event types, and for all the selected model parameter values.