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Seamless Rainfall Forecasting for the Netherlands & Case Studies in Data-Scarce Regions

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1-2 PM (MT) FL2-1022 or Virtual | [Watch Live](#)



The high spatio-temporal variability in precipitation fields is hard to capture accurately for most numerical weather prediction (NWP) models, especially for the first few hours ahead when timing and location are crucial for adequate warning of disrupting rainfall events. This is typically caused by the latency of these models and erroneous initial states due to imperfect data assimilation. To provide more predictability for short lead times, nowcasting was introduced. Nowcasting leverages high-resolution gridded rainfall fields from, for instance, weather radars, in combination with optical-flow or data-driven forecasting techniques. This makes nowcasting fast and quite accurate for short lead times, but the method quickly loses skill after the first hour(s), especially for convective events, due to the absence of any physics.

Past research has shown that an optimal combination of nowcasting and NWP, through so-called blending, results in more skillful forecasts. In this presentation, I will present the seamless (blended) rainfall forecasting setup for the Netherlands in which radar-based rainfall nowcasts are combined with a 20-member lagged ensemble from the HARMONIE-AROME NWP model. Three different blending methods (STEPS, an enhanced version of STEPS and a reduced-space ensemble Kalman filter blending) were tested operationally for a half year. Besides presenting the results of these tests, we will look ahead at the application of these now casting and seamless forecasting approaches in data-scarce areas. Examples from Ghana and Sri Lanka will show what is possible and what we can still improve on in future research. [Event Website](#)