How can we make ensemble flood forecast more reliable ?

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ABSTRACT

Ensemble forecasts of floods are used to assess uncertainty inf flood forecasts for the coming days. These ensembles can subsequently be used for assessing the risk for high impacts. Hydrological ensemble forecasts are established by using meteorological ensembles as forcings to a hydrological model. To make best possible risk assessments, hydrological ensembles that correctly describes the actual uncertainty in the forecasts are needed. This property of an ensemble forecast is named reliability. A secondary objective is to make the ensemble spread as narrow as possible – a property called sharpness. To achieve reliable and sharp ensemble forecasts of both meteorological variables, streamflows, and floods in particular, processing approaches are required. In this study we will compare how different processing approaches can be used to obtain more reliable flood forecasts for a set of catchments used for operational flood forecasting in Norway.

Keywords: flood forecasting, ensemble forecasting, processing