



Ensemble radar precipitation estimation for hydrology in the Alps

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A novel promising solution to express the complex error structure of radar precipitation estimates in a mountainous region is to generate an ensemble. Each ensemble member is a possible realisation of the true precipitation field given the radar reflectivity measurements and the detailed knowledge on the radar error structure. The original (deterministic) radar precipitation field is perturbed with a stochastic component, which has the correct space-time mean and covariance structure. The ensemble members can be directly fed into a hydrological model. Instead of running the model only once we run it several times. We thus get an ensemble of possible hydrological forecasts, the spread of which represents the sensitivity of the hydrologic system to the uncertainty in the radar precipitation field on input. The paper presents a technique developed for ensemble radar precipitation estimation for hydrology in a mountainous region such as the European Alps.