



## **Ensemble representation of uncertainty in quantitative precipitation estimation: Requirements, techniques and challenges**

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Ensemble precipitation products provide an effective mechanism for quantifying the non-linear propagation of spatially and temporally correlated retrieval uncertainties through hydrological models. This presentation will discuss recent developments in ensemble precipitation estimation, with an emphasis on techniques to derive ensemble rainfall fields from multi-sensor satellite observations. It will also examine the importance of ensemble estimation by demonstrating that incomplete representations of input uncertainty using point error models can result in biased model outputs or calibrations. The Hydrologic Ensemble Prediction Experiment (HEPEX) has launched a new test-bed project to coordinate the main aspects of ensemble QPE research. The presentation will conclude by describing the test-bed and identifying the main challenges that it faces.