



Uncertainties in small-scale precipitation forecasts

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Small-scale forecasting of intense precipitation is crucial for characterizing important ground effects, such as floods in small mountainous catchments or landslides. High resolution forecasts of precipitation are affected by two main sources of uncertainty: (1) uncertainty at the meteorological scale, which includes uncertainty in the initial conditions of the atmosphere due to insufficient observations, and (2) uncertainty due to the lack of representation of small-scale precipitation processes. While the first kind of uncertainty can be addressed by using meteorological ensemble predictions, the problem of quantifying sub-grid scale uncertainty is still open.

This presentation will discuss different approaches aimed at characterizing precipitation forecasts at small-scales, their statistical features and the related uncertainties. In particular, techniques aimed at estimating the relative weight between the uncertainty at the meteorological scale and at the sub-grid scale will be considered.