



## **Towards a mesoscale Ensemble Hydro-Meteorological Prediction System for the northwestern Mediterranean**

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During the last 15 years, ensemble weather forecasting has made substantial progress and has proved its skill in forecasting the probabilities of relevant weather events. More recently, the development and growing use of high-resolution, convection-permitting models has significantly increased the potential of atmospheric modelling. However, this opens new questions regarding the representation of the initial state, boundary conditions, and model uncertainties. In particular, the relative weight of each contribution remains to be investigated.

The talk will report on a current French research effort aiming at developing an Ensemble Prediction System (EPS) suited for heavy precipitation events in the northwestern Mediterranean basin. The envisaged system is based upon the French operational model AROME. It accounts for local initial condition uncertainties (derived from an ensemble data assimilation technique), boundary condition uncertainties (obtained from a larger-scale ensemble forecast) and model physics uncertainties (considered by introducing random perturbations in the cloud physics and turbulence parameterizations).