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Title:

An integrated tool to support flood warning decision making in Catalunya (Spain)

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Abstract:

A weather radar network is covering Catalunya, a region affected by Mediterranean climatological features and thus by severe flood events. An integrated flood warning system based on radar information is being developed, and it is working operationally in the regional water agency. The MOVHI tool consists in a visualisation package operating a hydrological model and a chain of rainfall processing algorithms in order to build an improved rainfall field from both radar and raingauge information. Before the merging process is done, several correction algorithms are applied to raw radar images (including attenuation and VPR). The hidrological model is a grid based model (named TOPDIST) able to provide local flow forecasts in several points of interest from user requests. Each land square of 1km^2 is considered a hydrological unit, where a lumped model is applied: the SCS loss function in urban cells, and an adapted version of Topmodel in rural cells. Afterwards a routing algorithm based on the simplified drainage network is computed, providing the runoff estimates from the integration of the different cells. Currently the tool is integrated over the whole area of the country, although the hydrological model is only applied in the Besòs catchment (1000 km^2, inside the important metropolitan area of Barcelona), waiting for a more reliable parameter calibration in other areas. In this presentation a general view of the tool is presented.