Rainfall thresholds and flood warning: an operative methodology

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An operative methodology for rainfall thresholds definition is illustrated, in order to provide at critical river section optimal flood warnings. The procedure for the definition of critical rainfall threshold values is based both on the quantitative precipitation observed and forecasted and the hydrological response of the basin. After a statistical analysis in order to define return period of critical discharge of considered hydraulic cross section, a semi-distributed rainfall runoff model is used combined with a spatial-temporal rainfall field simulator, based on stochastic point processes. Thresholds values are estimated for different hydrological scenarios (e.g.: soil moisture conditions); the sensibility of the values is performed considering also different down scaling scenarios of total forecasted rainfall amount over the region. Some preliminary results and a case study of Mignone River are presented.