

Multi-level information based rainfall estimation for hydrological applications

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The accurate representation of the time-spatial structure of precipitation is a critical step for rainfall-runoff modeling. Even for small catchments, the variability of rainfall can lead to large variations in modeled runoff. This is especially true for convective storms, responsible for most of the flash-floods in small catchments in the Mediterranean area, which show both spatial and temporal extreme variability. Therefore, the use of rain-gauges only result poor in order to adequately depict these events from a hydrological point of view.

In this work a multi-level information approach, based on rain-gauges networks, weather radar, satellite (METEOSAT) imagery and weather sensors network, is used in order to study hydrological extreme events. The procedure was employed for the analysis of the main extreme events occurred in the last five years in Calabria, southern Italy.