



Rainfall input spatial characterisation for hydrologic simulation

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Rainfall spatial variability may have a strong influence on the hydrologic response of a basin, depending on its geomorphologic features: mainly the orography, the slope, the soil type and their spatial variability

On one hand, a detailed monitoring device is required to observe rainfall spatial patterns over the basin, on the other hand a few selected raingauges might be sufficient to simulate the main meteorological forcing effects for hydrological purposes. For example in real time flood forecasting the information gained from one raingauge might be used as the first signal of an approaching extreme event. From another point of view the reduction of the number of data series might also be useful for simplifying the hydrological model, reducing the time needed to perform the hydrological simulation.

To this aim some storm and flood events occurred in the medium-size Taro watershed (North-Italy) were considered and the rainfall spatial patterns was analysed. Twenty raingauges are spread over the basin area of about 1500 km² in size. A statistical approach was applied to select the most representative raingauge for simulating the hydrologic response of the basin during the observed flood events.