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Study of the hydrological behaviour of an experimental basin

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The understanding of hydrological behaviour of a basin needs the measurements of several parameters at various spatial and time scales. In fact in one way it is requested a little scale to individuate a more homogeneous area for the measurement of an hydrological parameter, in the other way the evaluation of the discharge flow at the outlet has to take in consideration all the basin heterogeneity. In this work it is presented the experimental research activity on the Fiumarella of Corleto, a not very little basin (32 km2) in the South of Italy. The experimental campaign starts only with basic hydrological measurements of precipitation and discharge flows at the outlet, with a discrete knowledge of the soil distribution. The sensors number was gradually increased for meteorological measurements (temperature, solar radiation, wind velocity, etc.) to estimate the most significative parameters in the water balance at basin scale. In the last years it was turned the attention to more reduced scale with the individuation of a subbasin, with a water level measurement station, in which it was installed a TDR station, for soil moisture measurements, along a transect in a hillslope of the same subbasin. In this work it is presented all the experimental research activity conducted to study the hydrological behaviour of the Fiumarella of Corleto basin. The acquired data shows till where it's possible to analyze the hydrological dynamics with the knowledge of basic hydrological parameters at larger scale and when it needs to increase the number of measurements at smaller scale (subbasin).