



## **Analysis of soil moisture variability at different soil depths**

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Soil moisture is one of the hydrological parameters whose knowledge allows to understand the dynamics of a basin response to a precipitation event. An indirect measurement technique, by now consolidated in the scientific community, is represented by the Time Domain Reflectometry. The measurements in continuous are possible with the installation of a datalogger connected to the TDR probes with an high frequency temporal acquisition not possible with a transportable TDR100 for the time to reach every probe. The limit of this type of installation is the reduced measurement area because the maximum cables length from the datalogger is about 30 meters to avoid a signal strong dispersion. It could represent a problem also in the case of little basin of a few number of square kilometres. Such considerations induce the researchers to analyze the influence of the territory morphology on the soil moisture spatial variability. In this way it is possible to try a simulation of the soil moisture path in basin of different sizes before, during and after a precipitation event. In this work it is conducted an analysis of the soil moisture data collected along an hillslope of the experimental basin "Fiumarella of Corleto" (Basilicata region, South of Italy) already interested in the last years by several hydrological campaign measurements. Soil moisture is measured by means of a TDR station along a transect of 11 sample site at two depths (30 and 60 cm), with a total of 22 probe that covered a length of about 60 m. The present work object is to investigate the different behaviour of the soil moisture at different depth and to highlight the influence of the site topography on its spatial distribution.