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Hydrological Analysis in the Athens Experimental Basin

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A complete hydrological analysis has been conducted in the Athens Experimental Basin. This basin is located in the Attica prefecture, north-eastern of the city of Athens. It covers an area of 15.08 km2 and has a mean altitude of 430 m. Since its operation, it has become an important source of data and knowledge, as many measurements of hydrologic interest are being carried out in the area, such as: recording of water level, stream flow, rainfall volume, infiltration capacity and hydraulic conductivity of the soil, groundwater level and chemical analysis of water samples. The installed equipment is fully automated and consists of two hydrometric stations (at the basin's outlet and the centroid, respectively), and a high-density raingauge network. Based on the field measurements, the hydrographs at the outlet of the basin have been modelled, using the time-area histogram and the SCS method for the estimation of the excess rainfall distribution. Moreover, the stage - discharge curves at the outlet of the basin have been developed for the transformation of the stages to discharges. Several other hydrological models (regressional, UH-based and conceptual) have been developed and applied. Finally, a database has been created and a web site has been developed, in order to share data and information of the experimental basin with other users.