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# Alpine Experimental basins – examples and relevance for hydrology

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The most important data for hydrological modelling are the hydro-meteorological data. They include e.g. precipitation (rain, snow), air temperature, radiation, humidity and wind (speed, direction) in reliable spatial and temporal resolution. Distributed state parameters like soil moisture content, groundwater level, snow density are required and also hydo-geological data of soils (depth, classification), geology, vegetation are needed. The response of the hydrological system is usually described by the lumped basin discharge. To rely on the spatial variation also spatial distributed soil moisture data, snow depletion patterns or groundwater levels can be used for identification. The above data will only partially be observed in certain basins. The regular hydro-meteorological surveys provides data in a coarse mesh, which will not be sufficient enough for detailed process identification. Therefore some limited research or test areas were developed during the last decades to assess the parameters of interest. Mostly the operation of these basins were closely linked with specific research initiatives e.g. under the umbrella of UNESCO IHP (hydrological decade) or national programs (MOPEX, GEWEX). Some smaller test basins are maintained by organisations like universities or research institutions and the success is strongly dependant on the enthusiasm of individuals. The contribution will give some general remarks on the benefit of research basins and will refer to Austrian examples where runoff formation processes are analysed both in forested mountainous areas and in high alpine areas with snow- and icemelt impacts.