



Model development based on an ecohydrological catchment unit concept

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The aim of this pilot project is to develop a framework for water balance and runoff process modelling for basins at the regional scale with diverse landscape and ecohydrological characteristics. The main topic of the project is the search for the major controls on the runoff regime under distinct climatic and hydrologic conditions and to incorporate this in a regional catchment scale model with different landscape units.

The research concentrates on an analysis of appropriate indices to describe the control mechanisms on the runoff process at the regional and river basin scale under the various climatic, geologic, geomorphologic and ecohydrologic conditions found in large river basins. Indices applied include e.g. the dryness index and the evaporation efficiency as characteristics to describe water balance partitioning. Additional indices are sought to describe precipitation regime characteristics and different soil water dynamics situations. Main controlling effects are attributed to the seasonality and phase shifts in the dominating processes and to the storage characteristics of the catchments.

First results of some test cases in Austrian and Peruvian basins are presented.