



Estimation of Rainfall - Runoff Model Parameters in Ungauged Catchments of the Hron Region

M. Zvolensky (2), **S. Kohnova** (1), K. Hlavcova (1)

(1) Dept. of Land and Water Resources Management, Slovak University of Technology, Radlinskeho 11, 813 68 Bratislava, Slovakia, (2) Slovak Hydrometeorological Institute, Jeseniova 17, Bratislava, Slovakia (kohnova@svf.stuba.sk, hlavcova@svf.stuba.sk, zvolensky@svf.stuba.sk, szolgay@svf.stuba.sk)

Methods for transferring model parameters from gauged to ungauged catchments are needed in water resources modelling studies in poorly gauged regions. Although a great deal of experience has been gained with parameter estimation methods for ungauged catchments, there is a continuing need to upgrade these methods and to test them against practical requirements, since the problem of regional parameter estimation still constitutes the largest obstacle to the successful application of models in ungauged catchments. The poster presents a modification of a common procedure used in model parameter estimation in ungauged basins. The concept is based on the subdivision of the region of interest to groups of similar gauged catchments using clustering in the first step. Subsequently parameters of a lumped rainfall - runoff model are estimated by calibration using a daily time step in catchment. Regional regression formulae for the estimation of rainfall-runoff parameters from catchment characteristics were developed separately for each pooling group. It was believed that in catchments selected according to a similarity measure such relationship may perform better than in arbitrarily chosen catchments. The Hron River basin located in Central Slovakia was selected as a pilot region. The applicability of the concept was tested in selected the 21 subcatchments of the basin. Model parameters of the rainfall - runoff model estimated by regression formulae and estimated by the model calibration were used for modelling mean daily discharges and the results were compared.