



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

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The aim of this study was to derive regional regression formulae for the estimation of parameters of a lumped rainfall-runoff model in ungauged catchments. The upper Hron river basin with an area of 1766 km² located in Central Slovakia was selected as a pilot region. In each of eleven selected subcatchments of the region physiographical and climatological characteristics were derived and parameters of the rainfall - runoff model were estimated by the model calibration in daily time step. The method of multiple regressions was then used to derive at relationships between the model parameters and catchment's characteristics. The quality of the derived formulae was successfully tested in the subcatchment of Cierny Balog - Cierny Hron where parameters of the rainfall - runoff model estimated by regression formulae and estimated by the model calibration were used for modelling mean daily discharges and results were compared. The derived regression formulae can be used for estimating parameters of the rainfall - runoff model in ungauged catchments of the upper Hron region.