

Simulation of the proportion and interaction of surface and groundwater resources

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Abstract The present article deals with the simulation of rainfall–runoff using the SAC-SMA and BROOK models. It has been helpful for this purpose to follow the proportions of simulated runoff components, i.e. of streamflow (direct runoff, interflow and baseflow), and the available examples illustrate the significant contribution of simulation. The length of the evaluated time series is significant as it permits us to follow the influence of the vegetation development, which affects evapotranspiration demand. The influence of the diverse hydrogeological conditions in the area – various crystalline and sedimentary bedrocks – is important. Comparison of water levels monitored in boreholes and/or of spring discharge fluctuations, with the variability of simulated water storage in the basin, may facilitate the identification of the parameters for baseflow simulation.

Key words rainfall–runoff simulation; runoff components; evapotranspiration demand; groundwater components; Czech Republic