



Development of a climate-runoff model for the catchment of Zala River

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The Zala River provides the largest inflow of water to the Lake Balaton, which is the biggest lake in Central Europe. Water balance of the catchment of Zala River was analysed using remote-sensing based evapotranspiration maps (1 km² spatial resolution) for Hungary over the 2000-2008 period.

For climate change impact analysis a Budyko-model was used in spatially-distributed mode. The parameter of the Budyko-model (α) was calculated for pixels without surplus water. For the extra-water affected pixels a linear model with β -parameter (actual evapotranspiration / pan-evapotranspiration) was used. These parameters (α and β) can be used for evaluating future evapotranspiration and runoff in spatially-distributed mode. α and β parameters were validated for the Zala catchment using historical precipitation and streamflow measurements.

By using the two parameter maps and future data of climate models (mean annual temperature and precipitation) evapotranspiration and runoff predictions have been done for three periods (2011-2040, 2041-2070, 2071-2100).

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