MODEL GR4J (GeÃƒÂ¢Ã‚€Ã‚™nie Rural aÃƒÂ¢Ã‚€Ã‚™ 4 ParameÃƒÂ¢Ã‚€Ã‚™tres Journalier) UNTUK MENDUKUNG ANALISIS KETERSEDIAAN AIR DI DAS TAJUM

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Abstract	This study aims to apply the GR4J model as rainfall-runoff modeling in Tajum watershed to get four free parameters obtained from daily rainfall data. In this study, input data is in the form of daily rainfall data and potential evapotranspiration data. The output of calculated discharged is calibrated using observations of daily discharge data. This modeling optimizes four free parameters of the Maximum Capacity of Production Store (X 1), Groundwater Coefficient (X 2), Maximum Capacity of Routing Store (X 3), and Peak Time of Ordinate Unit Hydrograph (X 4).ÃƒÂ‚Ã‚ The optimum values of the modeling parameters of GR4J are obtained from the criterion of the smallest discrepancies between calculated and observed data, which are Nash-Sutcliffe Coefficient (NS), the correlation coefficient values and methods of Relative Volume Error (RVE). There are three stages in this modeling, namely: model calibration, model verification and model validation. Model calibration is carried out by using the first five years of data and verification of models uses the second five years of data. Comparisons of GR4J with other two rainfall-runoff models, Mock and SAC-SMA Models, were also carried. Results of this study indicate that GR4J model shows better performance than the Mock models and SAC-SMA models in terms of the criterion evaluated.ÃƒÂ‚Ã‚ Keywords: Tajum watershed, water availability, rainfall-runoff, GR4J models
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