

UNCERTAINTY OF DIRECT RUNOFF ESTIMATION FOR FLOOD PREDICTION BASED ON TOTAL RAINFALL-TOTAL RAINFALL LOSS RELATIONSHIP

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One of the main objectives of research in hydrology is to improve the accuracy of direct runoff estimation for enhancing flood prediction. Rain water falling to the ground surface will infiltrate into the soil and the excess rainfall (effective rainfall) will be direct runoff. Rainfall loss which is defined as the difference between the observed rainfall and effective rainfall consists mainly of infiltration with some allowance for interception and depression storage. A previous study applied total rainfall-total rainfall loss relationship to many catchments in Japan for estimating effective rainfall intensity to simulate direct runoff, and results showed that the runoff parameters (a and b) consists of standard deviation values. The standard deviation value of parameter a is to show the range of the uncertainty of obtained parameter a which represents the effects of evaporation that affects the initialization of soil moisture, interception by vegetation cover, or depression storage on the land surface. The purpose of this study is to estimate the uncertainty of direct runoff by using different sets of runoff parameters.

Keywords: Uncertainty of Direct Runoff, Flood Prediction, Total Rainfall-Total Rainfall Loss