



Prediction of Extreme Flood Event by using PDM with six Typhoon Events at 25 Geum River Catchments, Korea

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This study analyzes the flood events caused by major typhoons since 2000 (i.e. Rusa, Maemi, Nari, Dienmu, Compass and Bolaven) at 25 Geum River catchments, Korea. Probability Distributed Model (PDM) is applied with Nash Sutcliffe Efficiency (NSE) estimation. The specific regression relationships between model parameters of PDM and catchment characteristics are developed based on individual typhoon flood events. We present a regression equation based on individual typhoon flood events to reflect the specific characteristics of various flood events. Six candidate regression models (based on individual typhoon events) are developed and applied to create an ensemble prediction at ungauged catchment. An ensemble developed from five regression models is used to estimate a confidence range of ungauged catchment predictions. The application results show that ensemble prediction ranges is acceptable prediction performance (96 % of observed flows are in the prediction ranges) at the Bolaben flood event at Cheongju catchment, Korea. This study is a preliminary study on the extreme flood event analysis. It shows a potential to increase a confidence in the prediction of streamflow at ungauged catchment, Korea.