

Peerapong Rattanaburi 2014: Comparison of the Spatial Rainfall in Upper Ping Basin and Tha Chin Basin by Spatial Interpolation Techniques. Master of Engineering (Irrigation Engineering), Major Field: Irrigation Engineering, Department of Irrigation Engineering. Thesis Advisor: Assistant Professor Pongsatorn Sopaphun, D.Eng. 154 pages.

Comparison of the spatial rainfall in Upper Ping basin and Tha Chin basin by spatial interpolation techniques aims to evaluate spatial interpolation techniques and compare different rainfall interpolation methods to produce spatial rainfall estimates. The interpolation methods used in this study were inverse distance weighting, kriging, isohyetal, Thiessen polygon and thin plate spline. Daily rainfall data from 26 rain gauges in Upper Ping basin and 19 surrounding point stations were used to estimate rainfall in August, 2010 and 2011. Moreover, daily rainfall data from 33 rain gauges in Tha Chin basin and 20 surrounding point stations were used to estimate rainfall in October, 2010 and 2011. The accuracy of estimations was assessed through basic statistics, such as mean error (ME) and root mean square error (RMSE). Thin plate spline have performed the lowest RMSE in Upper Ping basin and ME have provided positive value that is under estimate rainfall. Isohyetal have produced more accurate predictions than another methods in Tha Chin basin and mean error have been showing that the value is over estimate rainfall.

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