

# **PENGARUH DATA HILANG PADA PERKIRAAN DEBIT RANCANGAN DALAM SKEMA PENGENDALIAN BANJIR**

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## **ABSTRACT**

Design flood, which becomes a main consideration in designing flood control structures, is estimated by applying hydrologic analysis procedure. The common problem in executing the procedure is the data deficiency in computing catchment average daily rainfall. It becomes familiar that rainfall data are not well-recorded; either by the cause of malfunctioned gauges or improper process of archiving; which result in the unavailability of data at certain times. This research was conducted to identify the influence of data unavailability in determining design flood.

Five catchment areas were analyzed in this research: Bogowonto, Keduang, Upper Opak, Upper Progo and Winongo. The procedure was executed by applying scenarios of daily rainfall data elimination. These scenarios were later solved by applying 4 methods: normal ratio, simple arithmetic mean, reciprocal and the omission of stations which experienced data deficiency. Computed design flood discharge as the output of analysis was then compared to design flood discharge which was generated by applying frequency analysis towards measured data.

The result showed that small relative error differences were yielded by the application of varying scenarios of data elimination. In Bogowonto, Keduang, Upper Opak and Winongo catchment areas, the small relative error differences were generated by reciprocal method, while in Upper Progo by normal ratio method. The omission of station method yielded in varying deviation values in Bogowonto, Keduang, Upper Opak, Upper Progo and Winongo catchment areas, sequentially 8.26%, 37.52%, 12.19%, 53.17%, 31.735% for 20-year-return period, and 9.60%, 49.61%, 15.30%, 76.721%, 41.36% for 50-year-return period.

### **Keywords :**

*Unavailability of data, design discharge, flood*