

ABTRACT

THE ANALYSIS STUDY FOR FINDING OF THE MISSING RAINFALL RATE DATA USING THE STOCHASTIC PERIODIC METHOD (CASE STUDY IN KABUPATEN PRINGSEWU)

By

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This study was aimed to calculate and predict the missing rainfall rate data by comparing the actual data and the calculation. This study used daily rainfall rate data from 1990 to 2000 at three stations, namely Fajar Esuk, Panutan and Podorejo in Kabupaten Pringsewu.

Data analysis were conducted using reciprocal method and periodic stochastic model. The reciprocal method was calculated by using the daily rainfall rate data and the closest distance between two stations and the research object. Meanwhile, the periodic stochastic model was calculated by using the daily rainfall rate data for 512 days all year long. Then, the periodic model of the daily rainfall rate was established by using Fourier equation and least squares method. The stochastic components were calculated by autoregressive approaching model. The stochastic model was presented by third order of autoregressive model. The comparison between data and calculation was conducted by using correlation coefficient.

Based on this study, it was concluded that calculation of missing rainfall rate was very significantly closer to the measured rainfall rate. The correlation coefficient of the synthetic method for daily time series, the monthly average rainfall, and the cumulative rainfall rate were 0,9999; 0,9999; and 0,9991 respectively.

Key words: Daily rainfall rate, reciprocal method, periodic stochastic component