

EVALUATION OF RELIABILITY OF RAINFALL SATELLITE PRODUCT BY GROUND-BASED RAIN GAUGE

by Qonaah Rizqi Fajriani, Suwartanti, Satoto Endar Nayono, Didik Purwantoro

ABSTRACT

One of the weather forecasting technologies currently being developed is satellites. Satellites can estimate rainfall intensity with better spatial resolution than rain gauges. However, satellite rainfall cannot replace surface rainfall data in total, because satellites only estimate rainfall intensity with measure cloud top temperature, so there is a bias or differences in the results. Whereas, rain data used as input for hydrological analysis is rain data that is already on the earth's surface. Therefore, it is necessary to collaborate between surface rainfall data and satellite rainfall data as a complement to improve the quality and quantity of surface rainfall data in Indonesia.

This study analyzes the correlation between rain gauge and the PERSIANN-CCS Satellite on a daily, monthly, and yearly scale. Statistical parameters used to evaluate satellite rainfall are correlation coefficient, MAE, BIAS, and G/S. After that, satellite rain was applied to evaluate the consistency of rain gauge data using the double mass analysis method.

The results showed that the annual and monthly rainfall data from the rain gauge and satellite had a good correlation, while the daily rainfall data had a poor correlation. After adjusting the time zone, daily satellite rainfall still experiences differences from rain gauge. Satellite rain can be overestimated or underestimated in predicting rainfall. Satellite annual data can be used to evaluate the consistency of rain post data.

Kata Kunci: *Correlation, PERSIANN-CCS, Rain Gauge, Satellite*