

ANALISIS AKURASI METODE PERHITUNGAN HUJAN WILAYAH DI LERENG SELATAN GUNUNG MERAPI

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INTISARI

Teknik pengamatan hujan tiap hari makin berkembang. Beragam metode telah digunakan mulai konvensional hingga memanfaatkan komputer dalam perolehan. Perolehan data hujan umumnya ditemukan berupa titik yang tersebar dengan harapan mampu merepresentasikan kondisi wilayah teramati. Kemudahan pengamatan dan pengolahan dengan menggunakan beragam metode geostatistik pada aplikasi ArcGIS. Perkembangan teknologi memunculkan cara baru memperoleh data hujan berupa area yakni Radar. Radar dinilai lebih efisien dan efektif dalam pengamatan namun belum semua wilayah tercakup. Untuk mengatasinya dilakukan perbandingan dengan metode pengolahan yang tersedia untuk mencari metode yang paling mendekati. Penelitian dengan judul “Analisis Akurasi Metode Perhitungan Hujan Wilayah Di Lereng Selatan Gunung Merapi” bertujuan menjawab pertanyaan tersebut. Poin utama yakni pada pengamatan nilai selisih dan bentuk sebaran hasil pengolahan.

Penelitian menggunakan metode analisis deskriptif kuantitatif terhadap nilai selisih. Sumber data yang digunakan berasal dari 2 sumber yakni <http://data.hydraulic.lab.cee-ugm.ac.id/museum-merapi/#> dan Dinas PU Balai Sabo. data digunakan merupakan data sekunder menggunakan 13 stasiun hujan dan 1 radar cuaca hasil perekaman bulan September 2016 hingga Maret 2017. Sebagai metode pengolahan yang diuji yakni *Invers Distance Weighted (IDW)*, *Kriging Ordinary Spherical*, *Kriging Ordinary Exponential*, *Kriging Ordinary Circular*, *Kriging Ordinary Linear*, dan *Kriging Ordinary Gaussian*.

Hasil penelitian menunjukkan metode *Inverse Distance Weighted (IDW)* pada pengamatan waktu 30 menit dinilai sebagai metode dengan akurasi terbaik didasari nilai RMSE kecil. Pengamatan pada pengaruh nilai RMSE menunjukkan banyaknya titik sampel berpengaruh sebesar 1,4% dan durasi pengamatan berpengaruh sebesar 41,5%..

Kata kunci : Interpolasi, *Inverse Distance Weighted*, *Ordinary Kriging*

RAINFALL MEASUREMENT METHODS ANALIZED IN SOUTH MERAPI VULCAN

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ABSTRACT

Rain observation techniques are getting better day by day. Various methods have been used ranging from conventional to utilizing computers. Rainfall data is generally found in the form of points spread by points being able to represent the condition of the observed area. Ease of observation and processing using various geostatistical methods in ArcGIS applications. Technological developments have led to a new way of obtaining rain data in the form of areas, namely Radar. Radar is considered more efficient and effective in observing but not all areas are covered. The solution is a comparison is made with the available processing methods to find the closest method. The research entitled " RAINFALL MEASUREMENT METHOD ANALIZED IN SOUTH MERAPI VULCAN" aims to answer this question. The main subject is the observation of the difference value and the shape of the distribution of the processing results.

This research uses quantitative descriptive analysis method to the difference value. The data sources used come from 2 sources, namely <http://data.hydraulic.lab.cee-ugm.ac.id/museum-merapi/#> and the Balai Sabo Public Works Agency. The data used is secondary data using 13 rain stations and 1 weather radar recorded from September 2016 to March 2017 . The processing methods tested are *Inverse Distance Weighted (IDW)*, *Kriging Ordinary Spherical*, *Kriging Ordinary Exponential*, *Kriging Ordinary Circular*, *Kriging Ordinary Linear* , and *Kriging Ordinary Gaussian*.

The results showed that the Inverse Distance Weighted (IDW) method at 30 minutes was considered the best method with the best accuracy based on the RMSE value. Observations on the effect of the RMSE showed that the number of sample points had an effect of 1.4% and the duration of the observation had an effect of 41.5%.

keyword : Interpolation, *Inverse Distance Weighted*, *Ordinary Kriging*