

ABSTRAK

IMPLEMENTASI METODE *GENERALIZED SPACE TIME AUTOREGRESSIVE* (GSTAR) PADA DATA CURAH HUJAN BEBERAPA KOTA DI PROVINSI LAMPUNG

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Provinsi Lampung dikenal memiliki curah hujan yang tinggi dan kondisi iklim yang sangat basah, yang menyebabkan intensitas hujan di daerah ini cukup besar. Oleh karena itu, informasi mengenai curah hujan di Provinsi Lampung sangat penting untuk dipahami. Besarnya intensitas curah hujan di provinsi ini dipengaruhi oleh karakteristik wilayah yang mencakup daerah pantai, dataran rendah, dan dataran tinggi. Saat ini, prakiraan cuaca telah menjadi kebutuhan penting bagi banyak orang di seluruh dunia. Selain itu, Provinsi Lampung juga dikenal sebagai penghasil berbagai komoditas pangan unggulan, seperti tebu, kopi, nanas, beras, pisang, coklat, dan jagung. Curah hujan memiliki pengaruh besar terhadap kualitas dan kuantitas hasil panen dari tanaman-tanaman tersebut. Oleh karena itu, peramalan curah hujan menjadi hal yang penting dilakukan. Salah satu metode peramalan yang mempertimbangkan hubungan antara waktu dan lokasi adalah model *Generalized Space-Time Autoregressive* (GSTAR). Dalam penelitian ini, digunakan tiga jenis bobot lokasi pada model GSTAR, yaitu bobot lokasi seragam, bobot lokasi invers jarak, dan bobot lokasi normalisasi korelasi silang. Hasil analisis menunjukkan bahwa model GSTAR $(6_1)I(1)$ dengan bobot lokasi invers jarak merupakan model terbaik, karena memenuhi asumsi *white noise* dan memiliki nilai RMSE sebesar 0,3442, yang lebih kecil dibandingkan dengan model GSTAR $(6_1)I(1)$ dengan bobot lokasi invers jarak dan bobot lokasi normalisasi korelasi silang.

ABSTRACT

IMPLEMENTATION OF THE GENERALIZED SPACE TIME AUTOREGRESSIVE (GSTAR) METHOD ON RAINFALL DATA IN SOME CITIES IN LAMPUNG PROVINCE

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Lampung Province is known to have high rainfall and very wet climate conditions, which causes the intensity of rain in this area to be quite large. Therefore, information regarding rainfall in Lampung Province is very important to understand. The intensity of rainfall in this province is influenced by the characteristics of the region which includes coastal areas, lowlands and highlands. Nowadays, weather forecasting has become an important need for many people around the world. Apart from that, Lampung Province is also known as a producer of various superior food commodities, such as sugar cane, coffee, pineapple, rice, bananas, chocolate and corn. Rainfall has a big influence on the quality and quantity of harvest from these plants. Therefore, forecasting rainfall is an important thing to do. One forecasting method that considers the relationship between time and location is the Generalized Space-Time Autoregressive (GSTAR) model. In this research, three types of location weights are used in the GSTAR model, namely uniform location weights, distance inverse location weights, and cross-correlation normalized location weights. The analysis results show that the GSTAR $(6_1)I(1)$ model with inverse distance location weights is the best model, because it meets the white noise assumptions and has an RMSE value of 0.3442, which is smaller than the GSTAR $(6_1)I(1)$ model with distance inverse location weights and cross-correlation normalized location weights.