ABSTRAK

DESAIN CURAH HUJAN EKSTREM DALAM PERUBAHAN IKLIM BERDASARKAN CURAH HUJAN SATELIT PERSIANN DI KAWASAN IBU KOTA NUSANTARA (IKN)

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Perubahan iklim memiliki dampak terhadap pola curah hujan ekstrem di Kawasan Ibu Kota Nusantara (IKN). Metode analisis curah hujan stasioner tradisional terbukti kurang memadai dalam menangkap kompleksitas yang disebabkan oleh perubahan iklim. Dengan memanfaatkan data curah hujan PERSIANN (*Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks*) guna memprediksi curah hujan ekstrem di masa yang akan mendatang serta untuk menyelidiki karakteristik non-stasioner data PERSIANN dan menilai dampak perubahan iklim terhadap pola curah hujan di Kawasan IKN. Oleh karena itu, penelitian ini menggunakan pendekatan non-stasioner, khususnya *Generalized Extreme Value* (GEV) non-stasioner berdasarkan data curah hujan satelit PERSIANN. Berdasarkan hasil penelitian yang sudah dilakukan dengan merancang nilai hujan ekstrem pada daerah di Kawasan IKN yang mengalami kenaikan tren dengan mempertimbangkan dampak perubahan iklim yang sangat berpengaruh terhadap peningkatan curah hujan ekstrem. Hal ini menjadi sangat penting untuk diperhatikan dalam konsep desain infrastruktur dalam menghadapi dampak tersebut karena berpengaruh terhadap umur rencana dan kekuatan suatu desain infrastruktur dan dapat berguna dalam mengetahui resiko banjir atau bencana alam lainnya di Kawasan IKN dan sekitarnya.

Kata Kunci: Curah Hujan Ekstrem, Analisis GEV Non-Stasioner, Data Satelit PERSIANN, Perubahan Iklim, Ibu Kota Nusantara (IKN)

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ABSTRACT

DESIGN OF EXTREME RAINFALL IN CLIMATE CHANGE BASED ON PERSIANN SATELLITE RAINFALL IN THE NUSANTARA CAPITAL AREA (IKN)

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Climate change impacts extreme rainfall patterns in the Nusantara Capital Region (IKN). Traditional stationary rainfall analysis methods have proven inadequate in capturing the complexity caused by climate change. By utilizing PERSIANN (Precipitation Estimation from Remotely Sensed Information using Artificial Neural Networks) rainfall data to predict future extreme rainfall as well as investigate the non-stationary characteristics of PERSIANN data, assess the impact of climate change on rainfall patterns in the IKN Area. Therefore, this study uses a non-stationary approach, specifically non-stationary Generalized Extreme Value (GEV) based on PERSIANN satellite rainfall data. Based on the results of research conducted by designing extreme rain values in areas in the IKN Area that experience an increasing trend by considering the impact of climate change which greatly affects the increase in extreme rainfall. This is very important to pay attention to in the concept of infrastructure design in dealing with these impacts because it affects the age of the plan and the strength of an infrastructure design and can be useful in knowing the risk of floods or other natural disasters in the IKN Area and its surroundings.

Keywords: Extreme Rainfall, Non-stationary GEV Analysis, PERSIANN satellite data, Climate Change, Nusantara Capital Area (IKN)