**Prediction of Maximum Temperature, Minimum Temperature, and Average Relative Humidity in The Short Term With Multivariate Regression Through Pre-Processing Principal Component Analysis**

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**ABSTRACT**  
In an effort to minimize the impact of disaster due to the weather/climate, forecasting information temperature and humidity quickly and accurately are important, considering temperature and humidity never loses of human life. One of the non departemen government institutions that handles forecasts of temperature and humidity is the Badan Meteorologi Klimatologi and Geofisika (BMKG). Prior to 2004 BMKG only rely on a forcaster to prediction temperature and humidity, so the results was subjective. Starting in 2004 BMKG began developing new methods by using Numerical Weather Prediction (NWP). NWP will be bias when used in area which have topography with the dominant vegetation, so it needed a post-processing using Model Output Statistics (MOS). MOS is a method based regression. This research analyzed maximum temperature, minimum temperature, and average relative humidity so it need multivariate regression as the post-processing. The number of predictor variable that used as many as 18, before modeled this variable are reduced by Principal Component Analysis (PCA) based on grid and variable. The principal component resulting from a reduction process based on grid mostly there were one for each variable, while reduction process based on variabel resulted mostlt 7 for each location. The result of regression multivariate is the residual still not identic and independent, but this method can repairing NWP model of 89,22%. So be considered that MOS through multivariate regression more accurate than NWP for prediction temperature and humidity of observation results.

**Key Word :** (Model Output Statistics) MOS, (Numerical Weather Prediction) NWP,(Principal Component Analysis) PCA, multivariate regression.
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