

## **Abstract**

Rainfall forecasting is very important for various sectors such as aviation sector, tourism, and agriculture. For example for the aviation sector, rainfall forecasting is used to schedule the plans in order to avoid the bad weather. Therefore, to provide the rainfall forecasting required an accurate method.

Evolution Strategies (ES) is one type of evolutionary algorithm used to train the historical data in order to produce the most optimal forecasting function. The most optimal function generated based on the chromosomes of the ES algorithm, in which there are parameters in the chromosome ES evolution strategy, the mutation step size and angle of rotation that can treat adaptive evolution. So that the resulting solution is not a local optimum.

This final project is built to analyze the application of ES to forecast rainfall based on climatic elements, there are temperature, air humidity, air pressure, solar radiation and wind speed. From the test results, this prediction system could produce an error rate MAPE of more than 20%. So, this method ES not fit to rainfall forecasting.

**Keywords :** forecasting, rainfall, *Evolution Strategies*, climatic elements