

ABSTRACT

Rain has an important role for life on earth because rainwater is a resource that is widely used by humans. However, global climate change in recent years has been erratic and difficult to predict. In March 2022 in the Nusawungu District, Cilacap there was a flood with water levels varying from 5 cm to 65 cm. One of the causes of flooding is due to high rainfall. Therefore, a prediction system is needed with rainfall measurement tools using load cell sensors and the Artificial Neural Network method in the area. In making this thesis using the method of artificial neural networks (Backpropagation) by adding an input layer and a hidden layer. This study uses daily rainfall data from the Tunggal Wulung Meteorology and Geophysics Station (BMKG) for the period April-May 2021 for network learning, while the data for the April-May 2022 period is for comparison. The load cell sensor data for the April-May 2022 period is used for comparison and network testing. Based on learning and testing of artificial neural networks (backpropagation) which was carried out with 30 input values, 3 hidden layers (5 neurons, 15 neurons, and 5 neurons) and 1 output value, the best MSE results were obtained with 10000 iterations and R correlation coefficient of 0.98935. . The MSE value in network learning is 0.00044121, while the MSE value in network testing is 0.022542. Rainfall prediction results get a smaller error rate indicates that the Backpropagation method is good for prediction or forecasting.

Keywords: *Rainfall, Backpropagation, Load Cell Sensor, Prediction.*