

Peramalan Ketinggian Pasang Surut Waktu Pendek Menggunakan Jaringan Syaraf Tiruan

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ABSTRACT

Forecasting of tide levels is one of the important problems in determining the schedule for activities or constructions in coastal and oceanic area. Accurate forecasting of tide levels could not be obtained without a long term (about one month or more) of tide measurements. A method of using a short term (a few days) of tide measurements to forecast tide levels is proposed in the present paper, that is artificial neural network (ANN). In this paper, the architecture of neural network consist of three layers that are input layer, hidden layer and output layer. The network is trained by using error backpropagation and the training results are compared with each data set. The network is verified with untrained data set. The results obtained in this paper indicate the capability of backpropagation model in forecasting short term tide levels. The obtained model performance of ANN model, based on statistical parameter values are root mean square error = 32,57; normalized mean square error = 0,33 and mean absolute error = 25,99. The equation for best linear fitting of regression is $y = 0,6x + 99,2$ with correlation coefficient = 0,83.

Keywords: artificial neural network, forecasting, tide levels