Abstract

Tides are a phenomenon of periodic rise and fall of sea levels caused by a combination of gravitational forces and attractive forces of astronomical objects, especially by the sun, earth and moon. Sea Tide Prediction in coastal areas is an important activity to predict. As can help the ship's captain in making decisions for optimal ship movement, and is very necessary for planning the construction of recreational beach areas or ports. In this paper, aims to predict the tides of the sea by approaching the Seasonal Autoregressive Integrated Moving Average (SARIMA) model. Here, the data are obtained from the tidal record equipment the Sea Level Station Monitoring Facility with locations taken in Jakarta Bay within a period of 3 months from January to March 2019. Prediction results obtained will show that the SARIMA model $(1,1,3)(0,1,3)_{24}$ achieves the best tidal forecasts with performance and accuracy at the time of prediction improved the value of the error generated in predicting the smaller, by looking at the results of Correlation Coefficient (R^2) and the results of Root Mean Square Error (RMSE) ie with a value of 0.8340; 0.0416 with a criterion of correlation R^2, namely a strong or close correlation (approaching to 1) and the minimum RMSE (approaching to 0). Based on the prediction results, it can be said that the prediction results from the SARIMA model used in this thesis is a model that is suitable as an alternative in predicting tidal data for short periods of time.

Keywords : ***Tide, Sea Level Station Monitoring Facility, Seasonal Autoregressive Integrated Moving Average (SARIMA), Correlation Coefficient (R^2), Root Mean Square Error (RMSE).***