

Abstract

Tsunami is a dangerous of natural disasters. One of large tsunami tragedy occurred on December 22, 2018 which was caused by the collapse of volcanic material on Anak Krakatau Mountain. There is no disaster mitigation before the tragedy caused many losses and many victims in this incident. Prediction and simulation from previous tsunami disasters are needed to anticipate a similar event happens again. Therefore, in this research will make simulation and prediction for the tsunami event on Mount Anak Krakatau with Recurrent Neural Network and Long Short-Term Memory method. Using 2 data, domain rectangle data and domain Mount Anak Krakatau data. These two data are used for the tsunami inversion dataset using RNN and LSTM methods. The test uses 10 scenario data tested and changes the lookback on each test. The accuracy of testing with domain rectangle data in each method shows that the RNN is better than the LSTM with lookback value 20. The average accuracy value is correlation coefficient 0.905, MAE 0.039 and RMSE 0.064. Meanwhile, for testing with domain GAK data, the results show that the LSTM is better than the RNN with a lookback setting of 80. The average of accuracy values MAE 0.154, RMSE 0.422, and CC 0.874.

Keywords: Recurrent Neural Network, Long Short-Term Memory, tsunami, Mount Anak Krakatau, tsunami inversion.
