ABSTRACT

Tsunamis occur due to earthquakes (tectonic or volcanic) under the sea that form waves with random and complex movements so that their height and period are difficult to measure and formulate. In this study, it is proposed to carry out a similar process of monitoring sea level. The data collection process was carried out twice with regular and irregular wave patterns. Data processing using MATLAB application, and video processing using Tracker application. Both of these data processing to produce the value of the water level and the two values will be compared. Where, from each wave pattern the height value is close to the real condition of data collection, which is 0.107 m for regular wave patterns and 0.087 m for irregular wave patterns. The graphic pattern presented is almost the same but there are differences in time frames and delays caused by the video recording process and data retrieval starting at the same time, the difference in time is 0.032 s. In conclusion, this study estimates the altitude value which has the purpose of measuring sea level height based on accelerometer acceleration data, as well as making an illustration for the real conditions of measuring sea level height. Thus, it is possible to obtain accurate and useful data for water monitoring systems in Indonesia with a simple process.

***Keywords**: accelerometer, acceleration data, water level , regular, irregular*