

ABSTRACT

To study the coastal processes, wave height is one of the most essential factor requirements. In order to compute wave height transformation in the surf zone, it is necessary to determine the rate of the energy dissipation with high accuracy. There are many researchers try to develop the models in order to estimate the rate of the energy dissipation. Most of the existing dissipation models were developed with the limited experimental conditions. Therefore, increasing of the amount of data with wide range of the wave conditions aims the development of the energy dissipation rate model to be more accurate and more reliable. In this study, a total of 508 cases from 14 sources of published experimental data containing data with different bed conditions and different of wave flume scales have been used to calibrate and verify the models. A total of 8 existing dissipation models have been studied and compared the accuracy. The comparison has been made by using root mean square relative error (*ER*) as a criterion to evaluate the accuracy of each model and to identify the tendency for further development of the dissipation model. After that the present dissipation model has been developed and then calibrated with the experimental data. It is found that the present model gives the best wave height prediction due to the minimum error after compared to other dissipation models. By using the present dissipation model, the computer program for computing wave height transformation across shore has been developed. This program is a user-friendly program. It can be run interactively (i.e., input from the keyboard) or input from a file. The output can be placed in a file or displayed on the screen. The input and output data can be plotted or displayed in tabular form.