EXPERIMENTAL STUDY ON WAVE TRANSMISSION OF
MOORING TYPE FLOATING BREAKWATER

Name of Student : Wahyu Suryo Putra
NRP : 4306 100 104
Departement : Ocean Engineering Departement, FTK-ITS
Supervisors : Sujantoko, ST., MT.
Ir. Haryo Dwito Armono, M.Eng., Ph.D.

Abstract

The development of the current breakwaters so rapidly bring on new trend of floating breakwater. Currently there are many types of floating breakwater that has been designed and built from the various kind of box, pontoon and the mat until the latest types of stepfloat. In the present study the author and the team propose a new innovations to improve the performance of the floating breakwater. Model to be used in this study is a new invention. Test parameters to be used in this study is the incident wave height \( H \), the incident wave period \( T \), the width of a floating breakwater structure \( B \), the angle of mooring \( \theta \). Waves used in the study were irregular waves with JONSWAP wave spectrum. This study aims to analyze the influence of the width of the floating breakwater and mooring angle against the transmission coefficient \( K_t \). In the data analysis that have resulted from the experiments, the author use macros Refana to relate the voltage data with water fluctuation level (cm). Furthermore Wavan 1.1 is used to analyze time series experimental data to obtain significant wave height (\( H_s \)) and average wave period (\( T_{average} \)). The results of this study indicate that in general usage of greater mooring angle gives greater \( K_t \). By considering the influence of the width of the model to the value of \( K_t \) at all mooring angles showed that the \( B / d = 0.425 \) has a tendency to produce the smallest value of \( K_t \).

Key words: floating breakwater, the transmission coefficient, mooring angle, relative width.