

Coastal Hydraulic Modelling to Ascertain Stability of Rubble Mound Breakwater

Authors : Safari Mat Desa, Othman A. Karim, Mohd Kamarulhuda Samion, Saiful Bahri Hamzah

Abstract : Rubble mound breakwater was one of the most popular designs in Malaysia, constructed at the river mouth to dissipate the incoming wave energy from the seaward. Geometrically characteristics in trapezoid, crest width, and bottom width will determine the hypotonus stability, whilst structural height was designed for wave overtopping consideration. Physical hydraulic modelling in two-dimensional facilities was instigated in the flume to test the stability as well as the overtopping rate complied with the method of similarity, namely kinematic, dynamic, and geometric. Scaling effects of wave characteristics were carried out in order to acquire significant interaction of wave height, wave period, and water depth. Results showed two-dimensional physical modelling has proven reliable capability to ascertain breakwater stability significantly.

Keywords : breakwater, geometrical characteristic, wave overtopping, physical hydraulic modelling, method of similarity, wave characteristic

Conference Title : ICACOE 2024 : International Conference on Advances in Coastal and Ocean Engineering

Conference Location : Rome, Italy

Conference Dates : January 15-16, 2024