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Study of Wave Reflection from Conventional Rubble Mound and Non-Reshaping Berm Breakwater

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Abstract

Interference of the incident waves impinge on and the reflected waves back from a breakwater cause partial-standing waves, which has a major effect at particularly storm condition on the breakwater stability. Hence, the wave reflection parameter is of great importance in hydraulic design of breakwaters. In this paper, at first the performance of M5′ model tree for prediction of the reflection parameter on rubble-mound breakwater was investigated using available large scale data. Then, the effect of berm on reflection coefficient from non-reshaping berm breakwater was investigated and finally, a new model for wave reflection estimation was presented using M5′ model tree. The obtained results showed that the model tree is more accurate than the available empirical formulas and the new obtained formula is more accurate and physically justified.

Keywords: *Reflection coefficient, M5′ model tree, Rubble-mound breakwater, Surf similarity parameter.*