

عنوان مقاله:

Numerical modeling of armour type and arrangement effects on wave overtopping at rubble mound breakwater

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خلاصه مقاله:

The wave overtopping phenomenon at rubble mound breakwaters is one of the most important issues during the past few years and always plays a unique role in the design process of such structures. Most modeling studies in the overtopping measurement have been based on experimental methods and numerical modeling of wave overtopping from porous breakwater with pre-fabricated armour layer, under irregular waves has been less investigated. In this study, FLOW-3D software was used to calculate overtopping discharge. To assess the accuracy of software results, first, for three of modeled wave heights in the laboratory, numerical modeling was performed and the comparison between numerical and experimental overtopping results showed about 15% error which is acceptable considering the differences between numerical and experimental modeling characteristics, errors and uncertainty in numerical modeling. In the following, numerical modeling for concrete pre-fabricated Xbloc, Antifer, and Tetrapad armour units with different arrangements has been performed. The comparison between results shows that the Antifer armours .have the least overtopping and the regular arrangement of Xbloc has the most

کلمات کلیدی:

Rubble mound breakwater, pre-fabricated armour units, overtopping, FLOW-3D software

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