

Numerical study of high wave run up and overtopping influence on coastal structures in the coastal hazard point of view - Phase one: primary studies

Project Managers: **Dr. Fetemeh Hajivalie**

Contributors: **Ahmad Arabzadeh**

Abstract

In this research TELEMAC model has been hired to simulate and study the run-up and overtopping of high waves over coastal structures in storm condition. An arrangement of TELEMAC has been prepared in this study to simulate wave generation, coastal processes, wave set-up and overtopping over coastal structures.

To assure the accuracy of the model, model results has been compared experimental data for a solitary wave set-up on a sloped beach and the wave overtopping over a seawall which showed a good agreement between them. Thereafter, the model has used to simulate the interaction of waves induced by so-called Gonu hurricane happened in 2007 and Ramin port breakwaters. Quality comparison between images provided by Bureau of Fisheries during the hurricane and the TELEMAC3D results conclude that the numerical model could simulate the incidence with a good accuracy .

The TELEMAC3D arrangement provided in this study is suitable for modeling and studying of wave set-up and overtopping over coastal structures and could be hired to control the breakwaters designs in storm situations.

Keywords

TELEMAC3D, High waves, Ramin port, Wave set-up, Wave Overtopping