

Simulating Wind Driven Waves by SWAN Numerical Wave Model in Bushehr Bay

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Abstract

Predicting and estimating the sea waves are very important in coastal zone activities, including: fishing industrial, port navigation and management, marine transport, design of coastal structures, oil activities and calculation of sediment transport rate. Also, waves and currents play very important roles in changing geometry and shape of the coastal zone.

SWAN model has been designed for coastal shallow waters. Therefore, in this study wind driven waves in the Bushehr Gulf has been simulated by this model and then it has been validated.

In this simulation, wind data from the GFS and Buoy data of Bushehr meteorology in year 2008 were used. After simulation, the wave characteristics of Bushehr buoy (significant wave height, H_s , and significant wave period, T_s) were employed for validation of the model.

Results of this research show that the average scatter index of swan model for high wave and period are 23.44 and 18.45 percent, respectively. Therefore, we can use SWAN model for prediction of characteristics of wind driven waves and providing the hydrodynamic Atlas for Bushehr Bay.

Keywords: *Wind driven waves, SWAN model, Bushehr Bay, Wave prediction.*
