Numerical Modeling of Wind Wave in the Anzali Using SWAN Model

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Abstract

Designing marine structures including shore or offshore requires information about wave regime. For this purpose, different methods were used including empirical methods and numerical models to simulate the wave characteristics. SWAN (Simulating Waves Nearshore) which has been developed for shallow waters had been used for modeling the waves in Anzali port. Wind data obtained from Europe central middle weather forecasting (ECMWF) on 2003 were used as model input and Bathymetry was obtained from NOAA site.

To achieve more accurate results, the model was firstly ran in the whole Caspian Sea and then, in Anzali port. Boundary condition of local model was extracted from Caspian Sea model. Calibration of the model was carried out using measured wave data. For verifying, the results were compared to those obtained from the project ISWM. The results indicate acceptable accuracy compared to buoy measurements. However, the modeled peak period is underestimated. Therefore, a correction factor should be considered for peak period.

Keywords: *Modeling, Wind Wavr, Anzali, SWAN.*