عنوان مقاله:

Evaluation of SWAN numerical model & SPM method for wave hindcasting

محل انتشار:

هفتمین همایش بین المللی سواحل، بنادر و سازه های دریایی (سال: 1385)

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خلاصه مقاله:

Wave characteristics are one of the most important factors in design of coastal and marine structures. Therefore accurate prediction of wave parameters is very important. The wave hindcasting process is conducted by field measurements, empirical methods or numerical simulations. In this paper the SWAN third-generation spectral model and SPM (Shore Protection Manual) empirical method have been used for prediction of wave parameters. The field data set for Lake Erie of the Great Lakes in year 2002 has been used for evaluation of these methods. The significant wave height (Hs) and the peak wave period (Tp) were the parameters employed in the study. Rectangular grids have been utilized for identification of bathymetry and the SWAN has been executed in nonstationary mode. The exponential growth from wind input, four-wave nonlinear interaction, whitecapping, and bottom friction have been taken in the simulation. The calibration of SWAN was carried out based on wave height because it is more important than wave period. The results of this study show that the average scatter index of SWAN is about 17 percent for significant wave height and 19 percent for peak period, whereas average scatter index of SPM method is about 54 .and 36 percent for significant wave height and peak period

کلمات کلیدی: