Performance Evaluation of SWAN Model for Wind Wave Forecasting in the Persian Gulf (Case Study: Farur and Lavan Islands)

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Abstract

Considering the importance of wind waves and its effects on the marine environment, prediction of these waves by different methods has been extremely thrived in recent years. In this study, the performance of numerical wave model, SWAN, has been evaluated to predict wind waves in the Persian Gulf, using different methods of generation and deterioration of wave. Three kinds of these methods using CCMP wind data has been applied in this study. For attainment the model error, the results has been compared with measured significant height, peak period and direction of waves in Farur and Lavan stations between 2009 and 2010. The result showed that WAM4-AB method, compared with other, had better performance. Error of this approach to modeling HS in Farur and Lavan stations was 44 and 48, respectively. Modeling of this method underestimated Hs and T_p comparing to the measured data.

Keywords: Modeling, CCMP Wind, SWAN, Measured wave data, Persian Gulf.