Performance Evaluation of WAVEWATCH III Model for Operational Wave Forecasting in the Persian Gulf Using Different Wind Input and Wave Dissipation Source Terms

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Abstract

In this study, the performance of the third generation wave model, WAVEWATCH III, had been evaluated for operational wave forecasting in the Persian Gulf. Three different embedded source term packages in WAVEWATCH III for wave energy dissipation and energy transfer from wind to wave were evaluated using GFS operational forecasted wind. Simulated wave heights and periods had been compared with the measured ones in Lavan and Farur stations. Obtained results indicated that the WAM4-BJA source term package has better performance for wave height and period forecasting in cases with significant wave height greater than 1.5 m. It was seen that this source term packages underestimated the wave height in fall and winter, while it sometimes slightly overestimated wave height in spring and summer seasons. In total, the scatter index for wave forecasting in both stations was about 26% (for cases with wave height greater than 1.5 m).

Keywords: *Measured wave data, GFS wind, Lavan, Farur, WAM4, BJA.*