

## Wind Wave Modeling Using MIKE 21 SW Spectral Model

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**Abstract :** Determining wind wave characteristics is essential for implementing projects related to Coastal and Marine engineering such as designing coastal and marine structures, estimating sediment transport rates and coastal erosion rates in order to predict significant wave height ( $H_s$ ), this study applies the third generation spectral wave model, Mike 21 SW, along with CEM model. For SW model calibration and verification, two data sets of meteorology and wave spectroscopy are used. The model was exposed to time-varying wind power and the results showed that difference ratio mean, standard deviation of difference ratio and correlation coefficient in SW model for  $H_s$  parameter are 1.102, 0.279 and 0.983, respectively. Whereas, the difference ratio mean, standard deviation and correlation coefficient in The Choice Experiment Method (CEM) for the same parameter are 0.869, 1.317 and 0.8359, respectively. Comparing these expected results it is revealed that the Choice Experiment Method CEM has more errors in comparison to MIKE 21 SW third generation spectral wave model and higher correlation coefficient does not necessarily mean higher accuracy.

**Keywords :** MIKE 21 SW, CEM method, significant wave height, difference ratio

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