

# A new tool Wave Forecast Tool (WAVEFORT) for predicting wave condition during extreme events in coastal areas and its validations: A new perspective

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## Abstract

Waves are more responsive to the wind blowing over the surface of the water. While wind moving over the water surface imparts its kinetic energy to the underlying water body due to friction and drag force. In this present study introducing new tool for wave forecast in coastal areas during extreme events, it is accurately predicting wave heights by giving distance of the extreme event and wind speed as input to this. This new tool is definitely most helpful for coastal areas for Maintenance of harbours, ship-routing, offshore platforms, coastal livelihood, coastal processes and many more marine engineering applications. This is successfully tested for coastal area of India and giving validation results for the accuracy of the tool. These WAVEFORT tool predicted wave heights are compared with the real time measured in-situ observations of shallow water Directional Wave Rider Buoy (DWRB) data off coastal area of India in 15m depth. Even in high wave conditions also this tool predicted wave accurately with correlation coefficient value of 0.95 tells the accuracy of the tool. The complete validation results of the WAVEFORT tool are discussed on this present study. KEY WORDS: Wave model, Cyclone forecast and Coastal areas

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