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ARTICLE

Assessment of Wave Power at the Iraqi Coast of the Arabian/Persian Gulf

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ABSTRACT

The worsening of global warming due to burning fossil fuels and the global energy crisis have led to an urgent need for renewable and clean energy sources that have little impact on the environment. One of the most important and largest alternative energy sources is marine waves, which have enormous energy that can be utilized using the correct and appropriate methods. The present work aims to study the possibility of investing wave energy by extracting the wave power at the northern coasts of the Arabian Gulf using numerical models for zero crossing and spectral analysis methods (SWAN model). Numerical models were used to analyze metrological data to estimate the wave power, estimated at 0.2664 kW/m by the zero-crossing method, and 0.386 kW/m by the spectral analysis method at a depth of 19 meters. The weak wave power may be due to the shallowness of the Gulf compared to other seas, in addition to the weather conditions in the study area, which are directly affected by weather phenomena, especially wind speed. The research recommends conducting further studies on wave energy and studying the most advanced methods for extracting it because of its great economic returns for Iraq.

Keywords: Arabian (Persian) Gulf; Renewable Energy; Spectral Analysis; Wave Power; Zero-Crossing Method

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