

Wave Simulation in South of Caspian Sea Using ECMWF (ERA-Interim) Wind Data and Comparing with ISWM II Results

Komijani, Fereshteh^{1*}; Sadri Nasab, Masoud²;
Chegini, Vahid³; Siadat Mousavi, Seyed Mostafa⁴

1- *PhD Student of Physical Oceanography, Department of Ocean Science, Khorramshahr Marine Science and Technology University, Khorramshahr, Iran. Email: fereshtekomijani@gmail.com.*

2- *Faculty Member, Department of Ocean Science, Khorramshahr Marine Science and Technology University, Khorramshahr, Iran. Email: masoud.sadri@gmail.com*

3- *Faculty Member, Iranian National Institute for Oceanography and Atmospheric Science, Tehran, Iran. Email: v_chegini@inio.ac.ir*

4- *Faculty Member, Department of Civil Engineering, Iranian University of Science and Technology, Tehran, Iran. Email: siadatmousavi@iust.ac.ir*

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*Corresponding Author

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Abstract

In this study, wave was simulated in the southern part of Caspian Sea using nested grids of SWAN model and utilizing ECMWF-ERA-Interim wind data. Wave model was verified with the correlation of %94 comparing the modeled and measured data at Neka, Nushahr and Anzali stations. The simulations were repeated utilizing wind data used in ISWM II. Although, wind data used in ISWM II have been verified in the Caspian Sea, the higher spatial resolution of ECMWF-ERA-Interim wind data resulted in a better prediction of the wave periods up to 1s and wave heights up to 0.5-1.5 m in the east and central parts of the southern Caspian Sea. However, the results of SWAN using ECMWF-Reanalysis INIO wind data were in a better agreement with the trend of measurements in west part of the Caspian Sea. Also, wind data used in ISWM II resulted in higher accuracy prediction of wave characteristic for measured wave heights less than 1.5 m.

Keywords: *Wave simulation, SWAN, ECMWF, ISWM II, Caspian Sea.*
