

Study on wind waves & sea current in the coastal area of Caspian Sea(Noor)

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Abstract

Warning wave and wind position has main role in development of marine science. As every safe marine plan and instruction and safe shipping and same case need to recognize marine climate (wave & wind). In This project, measurements and sampling related to climate temperature, salinity and conductivity, height, period and direction of waves, amount of light influence in water and wind direction and speed be fulfilled in six time period. Information of two meteorology stations in Babolsar and Noshahr is used to present wave and current field for exact study of wave specifications in Noor coastal region. To analyze of available information for every station depend on wind speed and frequency be used for eight geographical directions, annual and seasonal wind rose and wave rose of this case study. As a result, prevailing wind be Northern in summer and autumn and be western in winter and spring. Percent of western wind (8.58%) is bigger than percent of western wind(7.8%). Time period of calm is 61.7% in year and maximum of fetch is 645.7 km which related to north wind in this region, because of existing high pressure in this area. Maximum of calm is 65.3% in winter season. Mean max. wave height and period of annual wave is about 2.04 m and 3.95 sec. respectively in this region, and amount of calm waves(less than 0.1 m height) is 72.86% in the study area. During the summer Maximum of phase velocity and wave group velocity also are 6.75 and 3.37 meters per second in this study area, and type of wave breaking is spilling type in this region. Current direction is west-east in spring, summer and autumn and is east-west in winter in the shallow water of study area.

Keywords: waves and currents, wave's pattern, wind waves, coastal area of Noor, the Caspian Sea, Iran