

# Seasonal Variation of Physicochemical Parameters in the Coastal Water around the Bushehr Peninsula

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## Abstract

In this study, the physicochemical parameters of seawater (inc. depth, temperature, conductivity, salinity, dissolved oxygen, pH, chlorophyll a, turbidity, density and sound velocity) of the coastal waters around the Bushehr Peninsula (28° 42'N to 29° 00'N and 50° 39'E to 50° 57'E) were investigated monthly, during July 2011 to July 2012. A CTD (OCEAN SEVEN 316; IDRONAUT, Italy) measured the mentioned parameters of 12 stations in vertical profiles with time step of one second. Then, the quality control procedures were performed on the measured parameters according to IOC methods. Results showed that the sea temperature experienced an 18°C decline from summer to winter. Most of physicochemical parameters were directly affected by these considerable fluctuations. Water column of the study area was divided to 10 layers from surface to bottom. A weak seasonal thermocline (where temperature decreases to 4°C) was observed between layers 3 to 8 in the stations with a depth of more than 20m in the warmest months of the year. This seasonal thermocline generated a weak pycnocline whose gradient was ascendant, just opposite the thermocline trend. During the cold months, water column become well-mixed due to the insignificant differences of surface and bottom temperature (<1°C). Surface salinity of the study area increased from about 37 psu in summer to 41 psu in winter whereas Khark synoptic station showed the highest evaporation in summer. pH and dissolved oxygen (DO) values in the study area were inversely correlated to the water temperature so that with going from warm seasons to cold ones, pH and DO increased with respect to water temperature decrease. The values of pH were increased from 7.7 to 8.2 and for DO were from 2 ppm to 10 ppm.

Keywords: *Temperature, Salinity, pH, Dissolved Oxygen, Chlorophyll a, CTD, Bushehr Peninsula, Persian Gulf.*

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