

# Estimate the Numerical Values of Environmental Parameters Using MODIS Sensor in the Strait of Hormoz

Elmizadeh, Heeva<sup>1\*</sup>; Fazelpoor, Khosro<sup>2</sup>

1- Assistant Professor at Department of Environment, Faculty of Natural Resources, Khorramshahr University of Marine Science and Technology, Khorramshahr, Iran. Email: elmizadeh@kmsu.ac.ir

2- MSc in Marine Environment, Khorramshahr University of Marine Science and Technology, Khorramshahr, Iran. Email: fazelpoor68@gmail.com

Received Date: April 6, 2016

\*Corresponding Author

Accepted Date: November 16, 2016

---

## Abstract

This article aimed to examine and assess the environmental parameters such as salinity, turbidity, temperature and chlorophyll a, using MODIS satellite images, in the coastal waters of the Strait of Hormuz. To measure and estimate the parameters, global algorithms and MODIS data were used. Matrix containing data extracted from satellite images using coding and simulation software MATLAB, were used. Finally, by applying filters in Arc GIS software, these parameters were calculated in the latitudes and longitudes consistent with other marine data. According to the results, the highest coefficient of determination  $R^2= 0.89$  was obtained for salinity parameters and RMSE between field data and parameter extraction surface salinity data 0.68, temperature 1.2, chlorophyll a 2.3 and turbidity 1.78 were obtained. Chlorophyll distribution results showed that the coastal areas of the Strait of Hormuz were more susceptible to Chlorophyll blooms than the western and eastern parts.

Keywords: MODIS, Remote sensing, Salinity, Turbidity, Chlorophyll a, Strait of Homoz.

---