



Investigation and Comparison of Persian Gulf Currents by field and satellite data

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Abstract

Remote sensing and satellite information system have most role in marine sciences. For validity evaluation of satellite data in Persian gulf we use field data of Bushehr² meteorological buoy data including currents speed and direction in position 52°E and 27°N at 2008. To data analyzing we determine the quota of surface currents due to wind. We do analyses to determine tidal currents and surface currents due to wind by computer programming (TASK software) that it based on harmonic analyses and Fourier transformation (FFT³). We use correlation test such as Pierson, Spearman and Kendal on the field and satellite data to study correlation between these two data. The values of these tests by three mentioned tests are respectively %81, %96 and %87. Field and satellite data had conformity and its error was %20 to %30. For confidences of filtering process, we also separately use ORIGIN software.

Introduction

Surface currents measured non directly by satellites. It can be done by many ways such as:

- A) Making physical models of currents by satellite data like sea surface temperature, sea surface wind and sea surface height.*
- B) Measuring of sea surface currents speed.*
- C) Detection of sea surface anomalies and using of Doppler trace in radar field.*

In 2010 Dohan K. and et al studied measuring of surface current speed and direction by satellite sensors. Also Prandle D. in 1997 investigated currents due to wind by OSCAR (Ocean Surface Current Radar) at England coasts. They separated main component of tide by Raily Index and get 7 main components with 0.5 standard deviations. After determining the tide components they supposed reminder of currents maybe related to wind, wave and density.

1) National Oceanic and Atmospheric Administration

2) city in Persian Gulf coast

3) Fast Fourier Transform