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## **ANALYSIS OF SEA CURRENT PROFILE IN POHL PORT REGION BASED ON 25-HOURS MEASUREMENTS IN MONITORING AND MODELING OF HORMOZGAN PROVINCE PROJECT**

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**Key Words:** 25 hours Measurements, Sea current profile, Spring and Neap Tide

### **Introduction**

Monitoring and Modeling Study on Coastal Parts of Hormozgan Province is one of the national projects which was performed by coastal and harbor headquarters of Ports and Maritime Organization (PMO) in order to monitoring and modeling of Iranian coasts. Marine measurements in this project are covered coast line of Hormozgan from the Gougsar region to Parsian region and Qeshm shoreline as well that approximate length is about 1400 km.

Monitoring of the mentioned shorelines is consisting parameters such as hydrodynamics, wind, sediment, surveying and 25-hours measurements. Some special regions are selected in order to make more detail study on wind, current, wave and sediment. One of these regions is the Khooran strait between Shahid Rajayee Port and Pohle port.

25-hours measurements have been done in seven areas during two periods of time and for two different seasons. Figure 1 shows the stations of 25-hours measurements. Different parameters like current profile, salinity, temperature, water depth, turbidity, and suspended sediment have been measured and gathered during this operation.

In this paper, analysis of the sea current profile and other parameters in Pohle region are presented based on the measured data.

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Figure 1) 25-hours measurement stations in Khooran estuary

### **25-hours Measurements**

25-hours measurements are performed during two cycles of semidiurnal tide in order to measure the parameters of current profile, salinity, temperature, water depth, turbidity and suspended sediment simultaneously. Except current profile that measured continuously, other parameters are measured every one hour during 25 hours. Different devices are used in order to measure the parameters such as a Doppler Current Meter (ADCP) for current profile, a CTD for turbidity, temperature, salinity and a Van Dorn horizontal bottle sampler for sampling water in order to measure suspended sediment. The operation has been done on a wooden boat that anchored in this station and water depth corrected into chart datum by using the Echo-Sounder during 25-hours. These parameters have been collected from seven depths. One depth was near the surface, another one was near the sea bed and the other five depths were located between two mentioned depths. One water sampling has been performed for measuring the fall velocity of sediment during the changing the cycle of tide between neap and flood and vice versa.

### **Data processing**

25-hours data are downloaded from the memory of the devices and the percentage of suspended sediment is obtained by filtration method. All of data is depicted by depth-profile graphs in order to make a simultaneous analysis of the parameters.

### **Analysis of sea current profile in Pohle region**

The maximum current speed which was measured in this station is about 1.7 m/s. Current profiles reduce by depth increase. These profiles show a bilateral current occurs along the strait during the changing of tide cycle. Other parameters including temperature and salinity do not show significant changes along the profile but some profiles show the turbidity (NTU) and suspended sediment change and increase along the profile that could be due to current speed changes.

### **Conclusion**

Recorded sea current profile in this station is different to other stations of 25-hours measurements in the Khooran strait, while it seems that the strait can impact from two parts of east and west body. Figure 2 shows samples of the current profiles that are recorded during 25-hours in this region.

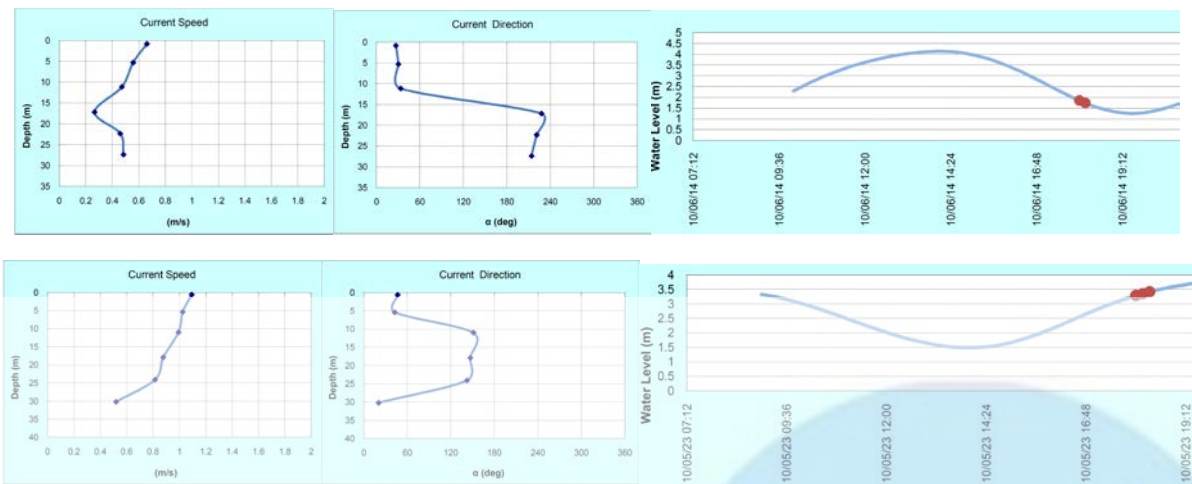


Figure 2) Recorded current profiles during the two cycles of tide in Pohle region

### References

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