

## عنوان مقاله:

ASSESSING THE AREAS WITH HIGHER PROBABILITY OF BEING AFFECTED BY CONTAMINATION RELEASE,  
CASE STUDY: PERSIAN GULF

## محل انتشار:

سیزدهمین همایش بین المللی سواحل، بنادر و سازه های دریایی (سال: 1397)

تعداد صفحات اصل مقاله: 2

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## خلاصه مقاله:

Coastal and marine areas which are habitats for some of the richest but sensitive flora and fauna, are usually not only highly populated but also under increasing anthropogenic pressure in all parts of the world. In order to preserve and conserve these valuable ecosystems, environmental protection should be every government spriority. The ability to predict the path of the pollutants is the key aspect that may assist in controlling/managing the marine pollution problem in case of accidents associated with the release of pollutants. The study area (Figure 1) includes the Persian Gulf, located in Southwest Asia. This gulf is an extension of the Indian Ocean located between Iran and the Arabian Peninsula. There are intense shipping activities in the Persian Gulf, which include massive transport of oil and chemical contaminants. This shows the significance of conducting such a study in this region. We are interested in finding the areas of the gulf that have higher probability of being affected by contamination after an accident or as a result of a continuous release. The release may occur during neap or spring tide. Furthermore, two different wind conditions have also been considered: calm and northwest wind. 2. Methodology In this paper we have employed DHI-Mike Software in order to track the pathways of pollutant particles released into this marine environment. The method consists of the following steps: (1) velocity field of the sea area obtained from Mike21-FM1 (2) Lagrangian trajectories of selected particles in the uppermost layer of the sea. This hydrodynamic model performs integration of the continuity equation and the horizontal momentum equations over depth  $h=d+\eta$ , namely the following two dimensional shallow water equations 3. Results and discussion Figure 2 shows the result of the tracking pollutants near Bushehr area after one year. The path of the released pollutants from Bushehr power plant seems to move along the coast, oscillating in the east-west direction with tides. After reaching Damigaz port, part of it extends to the southern part of the gulf entering an anticyclonic circulation. The movement of the particles is obviously influenced by wind conditions and the tidal state when the release occurs. Results in Figure 3 indicate that the areas more affected by contamination are located along the coast of Bushehr province. The areas located between Jainak and Ameri ports are more exposed to contamination than other parts. Such prediction can be useful in any future control of possible accidental release of ... contaminants in this area. 4. References [1] P

## کلمات کلیدی:

