

Impact of Reclamation on the Water Exchange in Bohai Bay

Authors : Luyao Liu, Dekui Yuan, Xu Li

Abstract : As one of the most important bays of China, the water exchange capacity of Bohai Bay can influence the economic development and urbanization of surrounding cities. However, the rapid reclamation has influenced the weak water exchange capacity of this semi-enclosed bay in recent years. This paper sets two hydrodynamic models of Bohai Bay with two shorelines before and after reclamation. The mean value and distribution of Turn-over Time, the distribution of residual current, and the feature of the tracer path are compared. After comparison, it is found that Bohai Bay keeps these characteristics; the spending time of water exchange in the northern is longer than southern, and inshore is longer than offshore. However, the mean water exchange time becomes longer after reclamation. In addition, the material spreading is blocked because of the inwardly extending shorelines, and the direction changed from along the shoreline to towards the center after reclamation.

Keywords : Bohai Bay, water exchange, reclamation, turn-over time

Conference Title : ICHE 2023 : International Conference on Hydrosience and Engineering

Conference Location : Paris, France

Conference Dates : February 06-07, 2023