

عنوان مقاله:

Investigation of the effects of rubble mound structures on coastal bed profile over the Southern Coasts of Caspian Sea (Field study: Astara Port)

محل انتشار:

فصلنامه بین المللی مهندسی سواحل، فراسواحل و محیط زیست، دوره 8، شماره 4 (سال: 1402)

تعداد صفحات اصل مقاله: 5

نویسندگان:

Sahar Javansamadi - *Department of Natural Resources and Environment, Science and Research Branch, Islamic Azad University, Tehran, Iran*

Ali Karami Khaniki - *Soil Conservation and Watershed Management Research Institute (SCWMRI), Tehran, Iran*

Abbas Ali Akbari Bidokhti - *Institute of Geophysics, University of Tehran, Tehran, Iran*

Kamran Lary - *Department of Marine Science and Technology, Tehran North Branch, Islamic Azad University, Tehran, Iran*

Majid Ghodsi Hasanabad - *Department of Marine Industries, Science and Research Branch, Islamic Azad University, Tehran, Iran*

خلاصه مقاله:

Coastal protection engineering works may result in changes in characterization of the hydrodynamics and bottom topography of the near shore domain. Since measuring the changes in underlying bathymetric is very costly, developing equilibrium beach profiles which can demonstrate the important features of the bottom topography is of importance. In order to assess the bottom topography of the Caspian Sea in vicinity of Astara Port, some field measurements of beach profiles were carried out. The purpose of this paper is to investigate the influences of the breakwaters on beach morphological evolution in the vicinity of them to identify how the extension of breakwaters altered the sea bed topography. To describe evolving cross-shore profiles in the study area, beach profile surveys were conducted by a single-beam echo sounder. Results showed that the breakwaters considerably affected their surroundings. Furthermore, comparisons of measured beach profiles with Dean's profile model for the equilibrium beach profile illustrated that: while the Dean's profile can precisely represent the time-mean profiles in the coastal area, it must be used with care in the structure vicinity. As a result, the coefficient, A , in Dean's equilibrium equation in the front of the breakwater will be about two or three times more than as when it used for the coast without the structure. It is because of the presence of coarser grains in front of the breakwater. It is while the power term in Dean's equation is the same for both the cases without and with the structure which is $2/3$.

کلمات کلیدی:

Coastal bed profile, Caspian Sea, Dean' s equation, cross-shore bed profile, Rubble mound structures

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/1901353>

