

عنوان مقاله:

Wave Energy Extraction of Oscillating Wave Surge Converter with Different Near-bed Opening

محل انتشار:

سیزدهمین کنگره بین المللی مهندسی عمران (سال: 1402)

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خلاصه مقاله:

The Oscillating Wave Surge Converter (OWSC) is adopted as a more versatile nearshore energy converter. The significant influence of the environmental and geometrical parameters on performance of this type of wave converters is the main issue in their design progress. The opening distance between the seabed and the lowest level of the converter is one of the major influencing factors on the device's performance. In the present study, a two-dimensional model was developed to study numerically the near bed opening impacts on the wave energy extraction factor under impinges of regular waves. The obtained results indicated on the significant impacts of both the opening distance and the wave period on the performance of OWSC. The near bed opening reduces the wave energy absorption in a portion of the water column. For opening distance of $D_{50}\%$, the near bed opening has a greater effect on OWSC performance even more than the converter's height increment. Moreover, OWSC performs with higher efficiency at the medium wave period, whereas its efficiency decreases at low and high wave periods higher efficiency

کلمات کلیدی:

Wave energy, OWSC, flap, hydrodynamics, surge force

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