

Abstract Submitted
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Hydrodynamic Performance of a Wave Energy Converter

YINGCHEN YANG, University of Texas at Brownsville — To harvest energy from ocean waves, a new wave energy converter (WEC) was proposed and tested in a wave tank. The WEC freely floats on the water surface and rides waves. It utilizes its wave-driven angular oscillation to convert the mechanical energy of waves into electricity. To gain the maximum possible angular oscillation of the WEC under specified wave conditions, both floatation of the WEC and wave interaction with the WEC play critical roles in a joint fashion. During the experiments, the submersion condition of the WEC and wave condition were varied. The results were analyzed in terms of the oscillation amplitude, stability, auto-orientation capability, and wave frequency dependency.

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