Influence Analysis of Pelamis Wave Energy Converter Structure Parameters

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Abstract : Based on three dimensional potential flow theory and hinged rigid body motion equations, structure RAOs of Pelamis wave energy converter is analyzed. Analysis of numerical simulation is carried out on Pelamis in the irregular wave conditions, and the motion response of structures and total generated power is obtained. The paper analyzes influencing factors on the average power including diameter of floating body, section form of floating body, draft, hinged stiffness and damping. The optimum parameters are achieved in Zhejiang Province. Compared with the results of the pelamis experiment made by Glasgow University, the method applied in this paper is feasible.

Keywords : Pelamis, hinge, floating multibody, wave energy

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