

Development of a Mathematical Theoretical Model and Simulation of the Electromechanical System for Wave Energy Harvesting

Authors : P. Valdez, M. Pelissero, A. Haim, F. Muiño, F. Galia, R. Tula

Abstract : As a result of the studies performed on the wave energy resource worldwide, a research project was set up to harvest wave energy for its conversion into electrical energy. Within this framework, a theoretical model of the electromechanical energy harvesting system, developed with MATLAB's Simulink software, will be provided. This tool recreates the site conditions where the device will be installed and offers valuable information about the amount of energy that can be harnessed. This research provides a deeper understanding of the utilization of wave energy in order to improve the efficiency of a 1:1 scale prototype of the device.

Keywords : electromechanical device, modeling, renewable energy, sea wave energy, simulation

Conference Title : ICOE 2015 : International Conference on Ocean Engineering

Conference Location : Melbourne, Australia

Conference Dates : December 13-14, 2015