

Innovative and cross-disciplinary wave energy research, aiming to develop a revolutionary Smart Control Algorithm (SCA)

Liang Li, Saishuai Dai

University of Strathclyde, Department of Naval Architecture, Ocean and Marine Engineering

Active wave energy converter control is a noncausal problem that requires predicting future wave loads. Real-time accurate calculation of future wave force based on wave elevation measurement is a complex and challenging hydrodynamics problem. Liang and Saishuai, having had some experience with artificial neuron network techniques, came up with the idea of utilizing the artificial neuron network to substitute the complex wave force calculation. Thanks to the support offered by the Supergen Early Career fund, Liang and Saishuai are able to carry out this project. Seeing the neuron network-based smart control algorithm predicted the wave load accurately with a much 'simpler' process, we think it is necessary and timely to promote more cross-disciplinary research to stimulate more innovative and effective solutions to the wave energy industry.