

Control, forecasting and optimisation for wave energy conversion

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This presentation gives an overview of the motivation, background to and state-of-the-art in energy maximising control of wave energy devices. The underpinning mathematical modelling is described and the control fundamentals established. An example control scheme is presented, along with some algorithms for wave forecasting, which can be a necessary requirement, due to the non-causal nature of some optimal control strategies. The presentation also shows how co-operative control of devices in a wave farm can be beneficial. The paper also includes perspectives on the interaction between control and the broader objectives of optimal wave energy device geometry and full techno-economic optimisation of wave energy converters.