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Beels, C.; Troch, P.; De Visch, K.; De Backer, G.; De Rouck, J.; Kofoed, Jens Peter

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C. Beels[1], P. Troch[1], K. De Visch[1], G. De Backer[1], J. De Rouck[1], J. P. Kofoed[2]
1. Ghent University, Belgium; 2. Aalborg University, Denmark

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The contribution of wave energy to the renewable energy supply is rising. To extract a considerable amount of wave power, Wave Energy Converters (WECs) are arranged in several rows or in a 'farm'. The wake behind each individual WEC in the farm affects the power absorption of its neighbouring WECs.

In this paper wake effects in the lee of a single Wave Dragon WEC and multiple Wave Dragon WECs are studied in a time-dependent mild-slope equation model. The Wave Dragon WEC is a floating offshore converter of the overtopping type. The water volume of overtopped waves is first captured in a basin above mean sea level and then drains back to the sea through hydro turbines.

The wake dimensions behind a single Wave Dragon WEC are investigated for uni- and multidirectional waves. An increasing directional spreading results in a faster wave redistribution behind the WEC. The power absorption of a farm of five Wave Dragon WECs, installed in a staggered grid, is calculated for varying inbetween distances. It is observed that an in-between distance of 2D is preferred, when taking spatial and safety considerations into account.

Keywords: farm, mild-slope equation, wake, wave energy