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NUMERICAL TOOLS FOR MARINE RENEWABLE ENERGY

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ABSTRACT

While still in early stages of development, marine renewable energy has seen significant development over the recent years.

Wave and tidal energy converters are novel structures in the marine environment and as such pose unique challenges during the design and installation phase. Tools developed for the more traditional sectors of marine engineering like shipbuilding and offshore technology can often be helpful, but require careful validation and adaptation.

Features and methods of interest include but are not limited to:

- strongly coupled wave-body and multiple body interactions
- wave propagation and interaction over large distances
- custom mesh motion methods
- numerical wave tanks
- modelling of turbulent wakes
- body-body interaction