

## Wake meandering of floating wind turbine and its influence on power and fatigue

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### ABSTRACT

In order to determine the interference degree of large floating wind turbine wake to the downstream wind turbine, this paper uses OpenFAST to study the wake bending phenomenon in the wind turbine array and its influence on power and fatigue under different motion states of floating structure. The wind turbine array consists of three IEA 22 MW reference turbines aligned with the inflow direction, simulating a combination of different six-degree-of-freedom motion forms of multiple wind turbines. It is found that the Pitch and Surge motion of the upstream floating wind turbine have obvious influence on the downstream fatigue load. With the increase of the motion amplitude of the first turbine, the overall fatigue of the turbine array increases, which indicates that both power and fatigue must be considered in the arrangement of the floating wind turbine array.

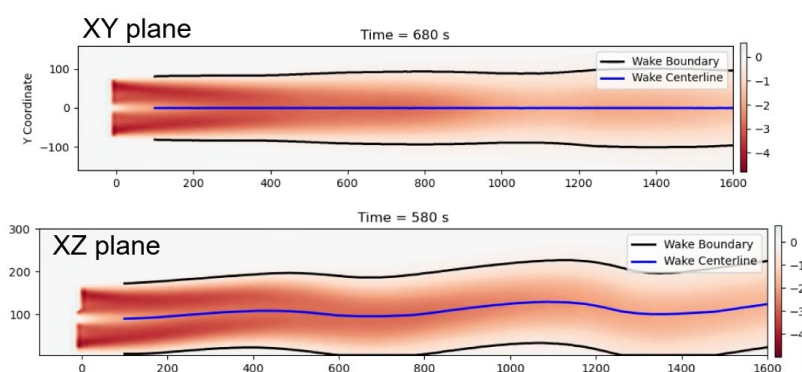


Fig. 1 Wake characteristics of floating wind turbine

### REFERENCES

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