

# Floating Offshore Wind Turbine Platform: Design, Modelling and Control

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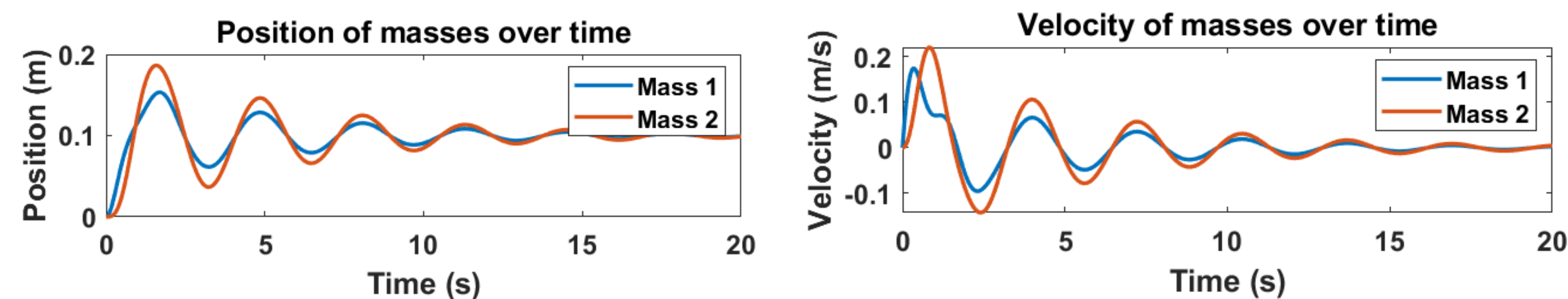
## INTRO

In our research, we study the optimal design, modelling and control for a platform on which a floating offshore wind turbine (FOWT) sits. The platform hence actuates itself in the offshore environment and provides a stable base for the FOWT.

## METHODS

1. Using software tools, we design our small-scale FOWT platform as a cross-shaped model with the turbine in the central column (see Figure).
2. The platform consists of PVC columns and members, heave plates to damp heave motion, as well as active dynamic vibration absorbers within the 2 opposite vertical buoyancy columns to damp pitch oscillations.
3. Consider spring-mass-damper systems and perform simulations of oscillations over time. More complex systems will be simulated in the future (see Figure).

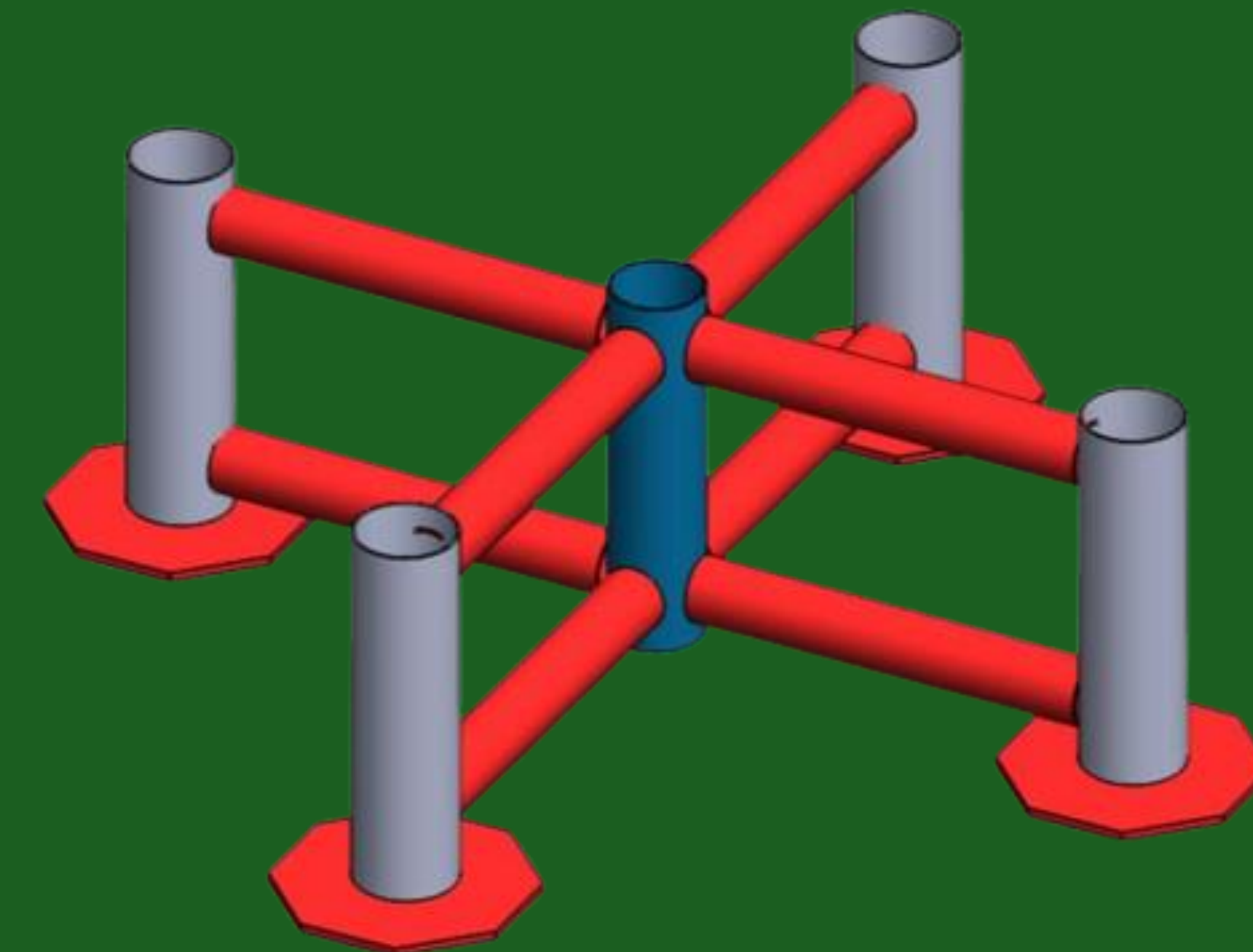
## RESULTS



## DISCUSSION

- Created design for small-scale FOWT platform, defined control implementation and requirements, and began modelling of the system.
- Future work: platform construction, control design and further experimentation.

1. Design of Cross-Shaped Platform
2. Control Requirements of Active Dynamic Vibration Absorbers
3. Modelling of Complex FOWT System



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