



## **Experiment study of the motion of the floating offshore turbine**

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Recently the wind industry moved to offshore areas. The floating wind turbine combined the platform and the mooring system. This research focuses on studying the motion of the floating offshore turbine with a mooring system. The platform, which was developed by the Ship and Ocean Industries R&D Center, had been test in a wave-wind flume in the Tainan Hydraulics Laboratory by using a 1:50 Froude scaling model.

In the experiment, the floating offshore turbine was placed in a water flume and exposed to periodic waves at frequencies ranging from 0.22 rad/s – 0.875 rad/s, the wave amplitude is about 2.5 meter, and with the different pretension of the mooring lines. The experiment includes the measurement of damping coefficient from the free decay test and the dynamic response in a sea state.

This research compares the motion of the floating offshore turbine with the different pretension of the mooring lines, and the model provides comprehensive data for the operational, design, and survival seas states, as well as the calibration and improvement of the existing design and performance of numerical models.