

INTERNSHIP CONTROLLER INFLUENCE ON FATIGUE



INTRODUCTION:

PRINCIPIA, is a team of specialised engineers with an expertise of design of FOWT (floating offshore wind turbines). A FOWT is compounded of a turbine, a floater and its station keeping system. A key parameter of the floater is the controller of the turbine: badly tuned it can increase fatigue, correctly tuned it damp motions of the floater and reduces the overall fatigue loading.

SCOPE OF WORK:

Objective: The objective is to seize the influence of one or two controller and their options on the DEL (damage equivalent loading) at tower bottom.

The scope of work includes the following tasks:

1. Scale a floater for IEA15MW wind turbine
2. On a relevant set of environmental cases, calculate DEL with ROSCO controller with the following options:
 - No floating feedback on nacelle velocity
 - Floating feedback on nacelle velocity
3. Add to the ROSCO controller code an exclusion zone in terms of rotation speed to avoid any resonance of the tower due to rotor excitation, validate the controller with exclusion zone
4. Do the same study with the latest DTU controller

DELIVERABLES:

Technical report including

- ✓ Modified code of controllers if necessary

GENERAL:

- ✓ Duration: 6 months
- ✓ Start date: Early 2022
- ✓ Location: PRINCIPIA offices in La Ciotat (Bouches du Rhône).
- ✓ To apply : job@principia.fr