Wind Challenge
Student competition team
University of appled science
Emden-Leer

Project description Academic year 2021-2022

Modelling and simulation of drive train and nacelle of small wind turbine

In this project you will work beside other members of the student competition team for small wind turbine, members and learn basics of wind turbine design, wind energy and work together to create a compound model of nacelle system using the available components such as the rotor shaft, brake system, and nacelle cover. The goal of this project is to simulate the performance of the drive train together with nacelle components in working conditions using the multi-body dynamic simulations together with the finite element modelling of the flexible parts for kinetic and kinematic simulations as well as stress and frequency analyses. This will help the team to create a complex computer model of the whole turbine including different mechanical and electrical sub-systems.

Main tasks/requirements:

- Modelling using Siemens NX or equivalent
- Coupled dynamic and FEM simulations using Simcenter3D or equivalent
- Preparation of the report of your work explaining the approach, solutions, and discussions on results
- Contribution to the final report of the team for the competition
- Contribution in preparation of the wind turbine
- Participation in weekly team meetings (online for remote students)
- Teamwork and communication with other team members
- Intermediate English knowledge or above

For more information about our team, visit the page:
https://www.hs-emden-leer.de/studierende/fachbereiche/technik/projekte/wind-challenge

Contact person for application or more information:
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