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

Project description Academic year 2021-2022

Design optimization and simulation of small wind turbine

In this project you will work beside other members of the student competition team for small wind turbine, and learn basics of wind turbine design, wind energy and work together to conduct wind turbine simulations using the Blade Element Momentum (BEM) with Qblade software. The main goal is to improve the current model by performing Turbine-BEM analyses and multi-parameter simulations. This will lead to determination of the turbine's aeroelastic performance in turbulent wind field. Also, the behaviour of the structure will be simulated using the built-in FEM tool, and finally a FAST model will be simulated within Qblade.

Main tasks/requirements:

- Modelling and simulation of the turbine in Qblade using the built-in "Wind field generator", "GLLT", "Q-FEM", and "FAST" modules
- Preparation of the report of your work explaining the approach and discussion on the results
- Contribution to the final report of the team for the competition
- Contribution in preparation of rotor 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 on our team, visit our page:
https://www.hs-emden-leer.de/studierende/fachbereiche/technik/projekte/wind-challenge

Contact person for application or more information:
Mohsen Forghani
mohsen.forghani(at)hs-emden-leer.de