

## **CFD modelling and simulation of nacelle and tower 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 on the modelling and simulation of the nacelle and tower of the wind turbine using CFD software. The goal of this project is to analyse the effect of the nacelle and tower on the aerodynamic behaviour of the wind tunnel in different working conditions including steady and unsteady flow. This project will provide necessary data such as the aerodynamic loads, induction coefficients, and wake behind the rotor for the complete aeroelastic model of the whole wind turbine.

Main tasks/requirements:

- CFD modelling and simulations using Simcenter StarCCM+, OpenFoam 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-empden-leer.de/studierende/fachbereiche/technik/projekte/wind-challenge>

Contact person for application or more information:

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