The Chair of Wind Power Drives at the RWTH Aachen University conducts research in the field of drivetrain technologies for wind turbines (WT). In numerous research projects throughout past decades, drivetrain technologies as well as vibration analysis of wind turbines and their drivetrain components have been continuously developed.

For the improvement of the reliability of the gearbox of a wind turbine it is very important that there is a fundamental knowledge of the prevalent loads so that it is possible to consider them in the early stages of the product development process. A new scientific project at the CWD identifies dynamic loads which are a result of failures in the electrical power grid. In addition to that there will be an investigation of the dependency of those loads in relation to the chosen concept of the drivetrain. In the project there will be investigations based on a simulation as well as experiments on a WT test bench. Thereby a lot of measurement data will be generated. Therefore one target of this project is the enhancement of an existing measurement data acquisition system. The enhanced system should be able to perform a data compression and pre-evaluation in real time.

**Bachelor- / Master Thesis**

Development of a method for efficient and automated pre-processing of measurement data for the identification of dynamic load events

**Tasks:**
- Familiarization with the existing measurement data acquisition system of the CWD
- Literature research on existing algorithms for the pre-processing of measurement data
- Development of an algorithm for the detection of significant loads
- Enhancement of the existing measurement data acquisition system with regard to data compression and pre-evaluation

**Requirements:**
- Motivation to work independently
- Prior knowledge in programming (especially PYTHON) as well as with the operating system Linux and the system design platform LabView is advantageous
- A good overall grasp of measurement technology is desirable

**We offer:**
- Immediate start and rapid progress of the thesis
- Intensive supervision
- Flexible working hours in a young and motivated team

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