The Institute of Machine Elements and System Development researches the fundamental structural and tribological behavior of machine elements and maps this into experimentally validated model descriptions. These model descriptions are used to analyze and design the functional, loss and noise behavior of entire technical systems with a focus on drive technology. The developed models also serve to research and develop methods of Model Based Systems Engineering (MBSE) as a central element of future industrial product development processes. However, the application of MBSE in real world has still lots of challenges for system engineers. One of the major challenge is to develop a general framework for systematic organization of resources in system development process. The task of the student work is to design a workflow for wind turbine systems using the system modeling language (SysML) tools, which enables to achieve seamless dataflow throughout the development process. Therefore, the data consistency and architecture of system model need to be considered beginning in the requirements analysis, system design and continuing through to system validation phase. Subsequently, an agile design process should be supported by the feedback and optimization analysis activities from the system model.

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Master/Bachelor Thesis
Seamless workflow of model-driven development of wind turbine systems

Tasks:
- Conceptual design of system development process of wind turbine systems
- Development of workflow to manage the simulation process using SysML tools
- Setting up a whole system model to support the redesign and optimization process
- Evaluation of the system model in product development process

Requirements:
- Independent and reliable work
- Interest in system modeling and product development
- High learning ability in new things
- Previous knowledge of system engineering is good to have

We offer:
- Intensive supervision
- Immediate start or by appointment
- Very good working environment
- Promising topic and experience for a future career