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Student Project  
(BA, MA, HS, FP, Projekt angewandte Forschung, etc.)

## Modeling and simulation of a Two-Mass-System of an electrical machine testbench

The LMRES research group investigates optimal control strategies for highly nonlinear synchronous machines. These dynamic algorithms are implemented on a real time system (dSpace). In order to apply this control strategies to our machine testbenches, a simulation model of the mechanical part is needed. Therefore, this student project develops a simulation model of a two-mass-system of two machines that are connected by their shafts.

This project covers:

- State of the art modeling a machine testbench as two-mass-system
- Mathematical description of the two-mass-system
- Implementation in Matlab & Simulink
- Identification of model parameters
- Simulative validation
- Experimental validation using LMRES machine lab's realtime system

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