**RU**B

Bachelor/Master Thesis

Topic: Hardware in Loop for optimization of control system using evolutionary algorithms

DESCRIPTION:

Active vibration control (AVC) of mechanical structures is the main topic of this practical project. The plant model under study is the inlet of an MRI device that can be seen in Fig. 1. The objective is to optimize the controller structure using evolutionary algorithms such as Genetic Algorithm (GA), Particle Swarm Optimization (PSO), Firefly algorithm, etc.

The designed control system is supposed to be optimized in a loop that contains the plant in the form of the real-time setup and the controller/observer implemented on the SIMULINK platform. The performance of the closed-loop system should be evaluated experimentally.
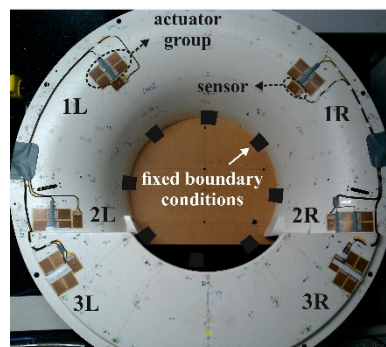
REQUIREMENTS:
Knowledge of MATLAB/SIMULINK
Knowledge of metaheuristic methods such as GA and PSO.

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Mechanik
adaptiver
Systeme

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