Problem description

In the future development of modelling and simulation, the optimisation process will increasingly be carried out by central control algorithms. In a number of optimization steps, the design of a system to be developed is continuously refined until it meets certain system requirements. To realize this approach, it is necessary that the various simulation programs can be controlled by autonomous algorithms. This assignment makes a start with this.

Relevance

In the mechatronic development department, we want to be able to control our electromagnetic FEM software (Ansys Maxwell) with a script (Python). The student designs efficient control routines for various stages in the simulation, such as model construction, meshing, calculation and data processing. These routines are tested extensively. The student writes a clear report that can serve as a reference work within the development department.

Aimed output

- Design efficient control routines
- Test designed routines
- Write clear report

Competence

- Knowledge and experience in FEM simulation in the field of electro magnetics
- Knowledge on motors and actuators
- Strong competence on mathematical modelling

Initiator/Supervisor: Peter Bax

Type of assignment: intern / graduation project

Desirable duration: 6 months