MASTER OF DESIGN – CAE-BASED ROBUST DESIGN OPTIMIZATION WITH OPTISLANG

Sensitivity analysis, optimization and robustness evaluation with a minimum amount of user input and solver runs for your effective virtual product development

**SENSITIVITY ANALYSIS**
- Stochastic sampling (LHS) for optimized scanning of multi-dimensional parameter spaces
- Quantification of prognosis quality (CoP) of meta-models
- Generation of the Metamodel of Optimal Prognosis (MOP)

**Optimal Design**
Sensitivity analysis, optimization and robustness evaluation with a minimum amount of user input and solver runs for your effective virtual product development

**Coefficient of Prognosis (CoP)**
The CoP quantifies the forecast quality of a meta-model (regression model) for the prognosis of a result value.

**Metamodel of Optimal Prognosis (MOP)**
The MOP represents the meta-model with the best prognosis quality of the result value. For the determination of the MOP, subspaces of important input variables are evaluated with the help of meta-models. Thus, a No Run Too Much-strategy will be implemented with a maximum of prognosis quality for correlations in regard to design evaluations.

**Best-Practice-Management**
Wizard-based assistants for the modules of sensitivity analysis, optimization and robustness evaluation select the most appropriate defaults of the statistical and stochastic methods as well as for the optimization algorithms.

**OPTIMIZATION**
- Identification of the relevant input parameters and response values (sensitivity analysis + CoP/MOP)
- Pre-optimization of the parameter sets with MOP without additional solver runs
- Further optimization of the parameter sets with the most appropriate algorithms (Best-Practice-Management)

**ROBUSTNESS EVALUATION**
- Efficient methods of stochastic analysis for the determination of failure probabilities
- Evaluation of result value variation
- Identification of the relevant scatter input parameter (CoP + MOP)