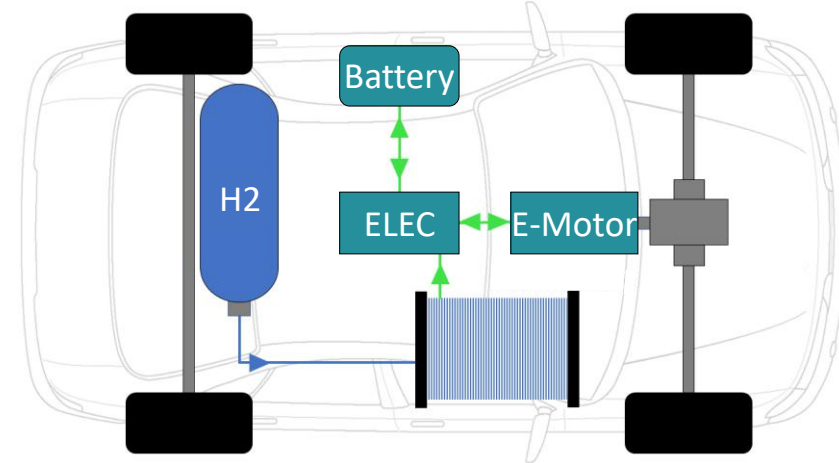


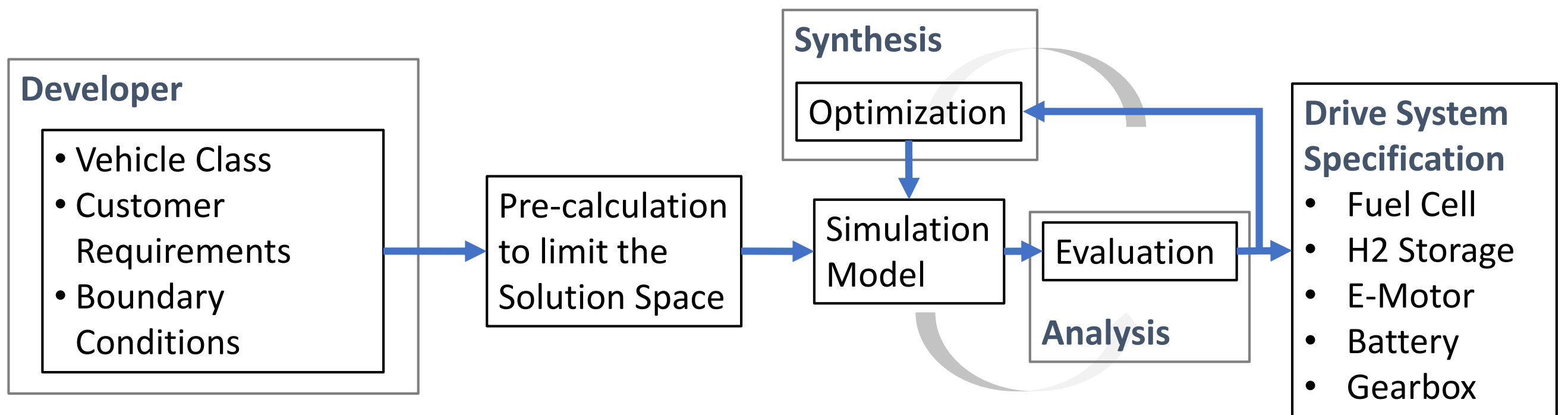


Fuel Cell Drive Systems

- Typically consist of Fuel Cell, Hydrogen Storage, Electric Motor and Battery
- Energy Management necessary to distribute Load between Fuel Cell and battery

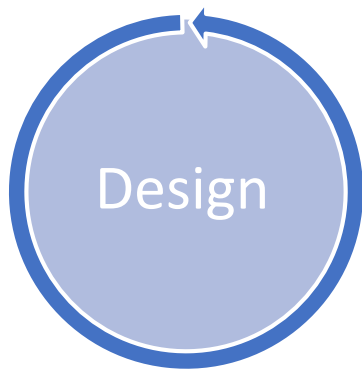


Method for the Automated Design of Fuel Cell Drive Systems using multi-objective Optimization

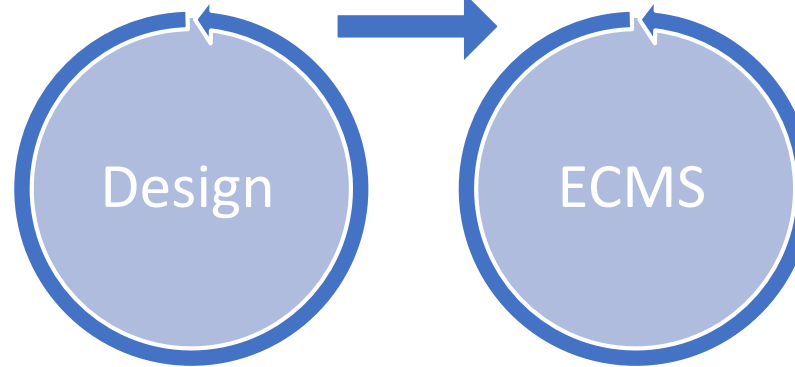


Researching different Approaches towards the Integration of the Energy Management Strategy (EMS) into the Drive System Design Method. The EMS of choice is a Equivalent Consumption Minimization Strategy (ECMS).

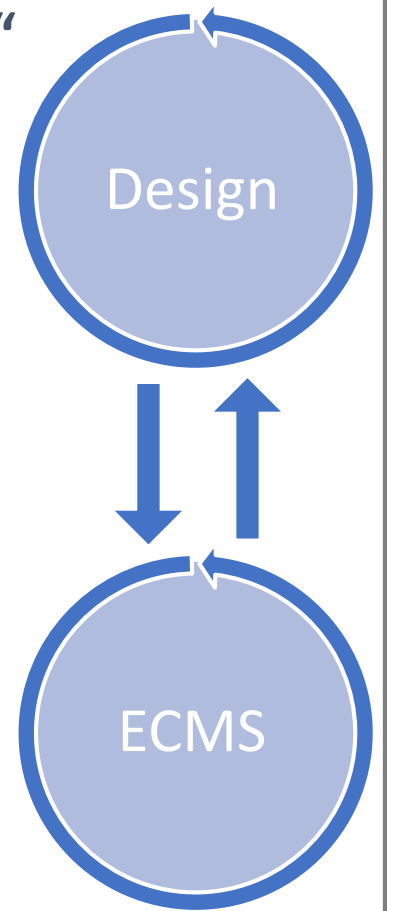
Approach „A0“
Optimization of Drive System Design Parameters
Complexity: GP



Approach „A2S“
Subsequent Optimization of ECMS Parameters for each Pareto-optimal Drive System Design Parameter set
Complexity: GP²



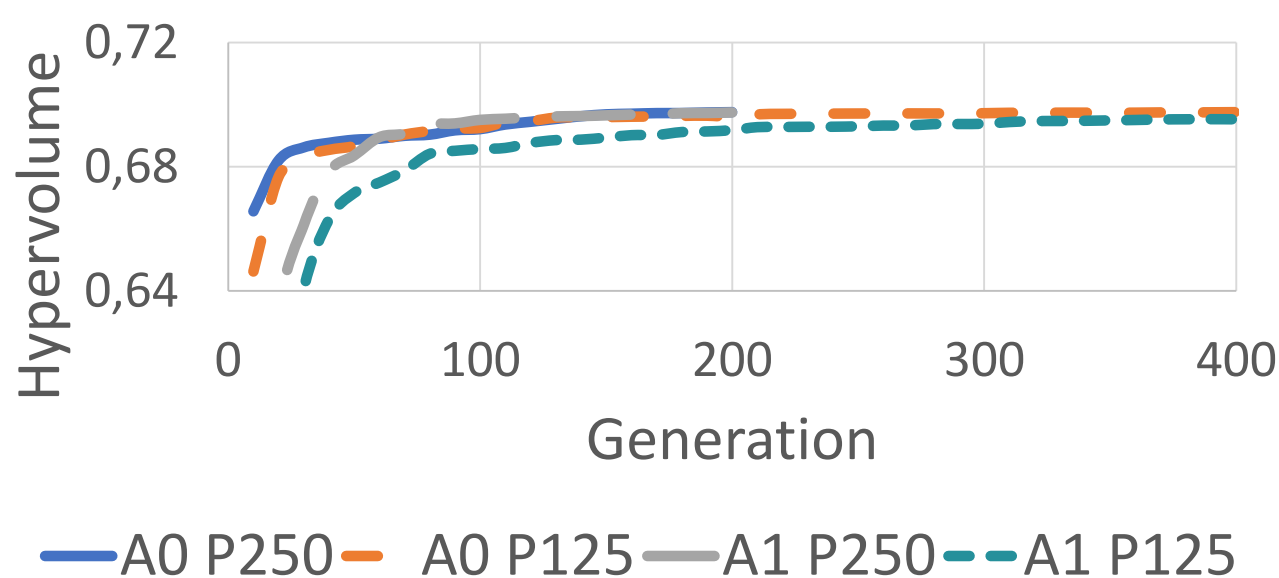
Approach „A2P“
Optimization of ECMS Parameters for all Drive System Design Parameter sets in Nested Loop
Complexity: (GP)²



Approach „A1“
Simultaneous Optimization of Drive System Design and ECMS Parameters



Hypervolume Comparison of A0 and A1



Optimization Results Comparison

