



RESEARCH THESIS

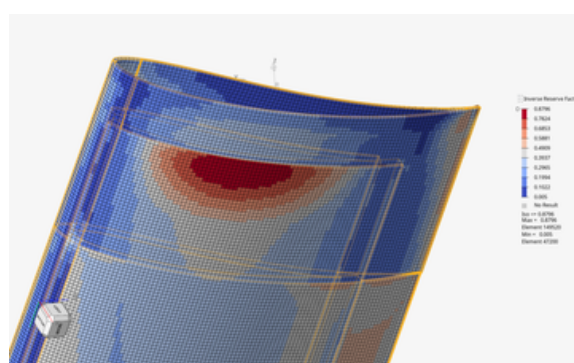
FEM Validation

We optimize our wings internal structure with FEM to reduce the weight of our car as much as possible. The objective is an extensive and reliable databank, which is directly tailored to our manufacturing processes.

The FEM simulation would preferably be done in Hypermesh. Working with CFRP and its extremely anisotropic properties makes this especially challenging.

A set of tests shall be carried out to determine the mechanical properties resulting from our materials and manufacturing processes. The resulting data will be used to create an extensive databank for our simulations.

In a next step create a more complex component sims and validate properties of complex areas within a lay-up. As an example. changes like core-transitions or local reinforcements, like ribs or spars within the layup, often result in weak spots in the layup. The prediction of those weak spots by the FEM, as well as resulting overall mechanical properties of the parts, are to be validated through testing.



Tasks:

- Design & carry out CFRP material /component tests
- Create extensive databank based on the tests
- Validate properties of complex areas within a lay-up

Requirements:

- FEM experience
- Ideally CFRP experience
- Become team member