

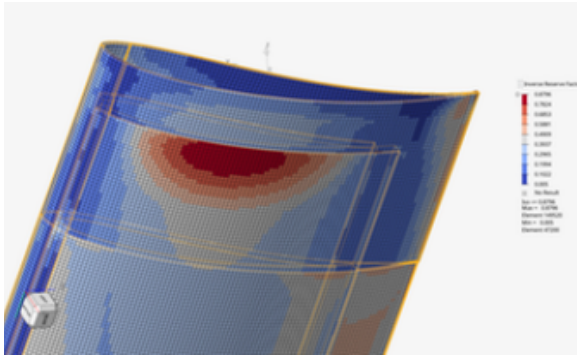
SUGGESTED TOPIC FOR SCIENTIFIC WORK

FEM Validation

The objective is to optimise our wing's internal structure using FEM to reduce vehicle weight while maintaining structural integrity. A reliable material database tailored to our manufacturing processes will support this work. Simulations will preferably be performed in HyperMesh. Mechanical tests will determine the properties of our CFRP materials and manufacturing processes, accounting for their anisotropic behaviour. The resulting data will be used to improve the accuracy of our simulations.

Complex components and critical lay-up areas, such as core transitions and local reinforcements, will be simulated and experimentally tested to validate predicted weak spots and overall mechanical performance. The topic is merely a suggestion and must be finalised with the institute.





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