

Green Innovation meets performance

General

The aerodynamic package of a Formula Student car serves the purpose of generating downforce to give the car more grip on the racing track. However, not only the total amount of downforce is important, but also how the downforce is distributed along the car. The center of pressure (COP) is an important parameter. It is the location where the resulting downforce works on the car. For good race car stability, it is important that the cop is not in front of the center of gravity.

Description and objective

Since the front wing has the 'cleanest' air and the ground effect, it is easy to generate a lot of downforce at the front and therefore shifting the COP to the front. As a result, the front wing generally will be designed to have a good COP and a lot of potential downforce is sacrificed. The rear wing is therefore the limiting factor of the aerodynamic package. The more downforce it generates, the more the front wing is allowed to generate.

Over the last years, the same design was always reused because of the available molds. However, a lot of variations can be thought of for a better performing rear wing. The main feature that we want to be investigated is a first stage with a non-constant cross-section. This could compensate for the losses that the wake of the driver sheds onto the rear wing.

You will investigate different concepts, evaluate them using STAR CCM+ and the topological optimization software SimCenter HEEDS while keeping aspects such as weight and manufacturability in mind.

Join our research team!

Mail your contact info and field of interest

to <u>recruitment@formulaelectric.be</u>

Profile

- Bachelor Engineering Science or Technology
- Interest in fluid dynamics
- A professional and entrepreneurial attitude
- Knowledge of CFD is recommended but not required
- Willing to learn quickly about different aspects of race car aerodynamics

Returns

- Experience in an unique field of expertise
- Gain exposure to cutting-edge technologies and industry-leading organizations
- Possibility to network and cooperate with international stakeholders
- Insight into software like Star ccm+, NX...