

Aerodynamic optimisation of the endplate of the rear wing of a Formula Student race car



We are looking for motivated master students Engineering Technology

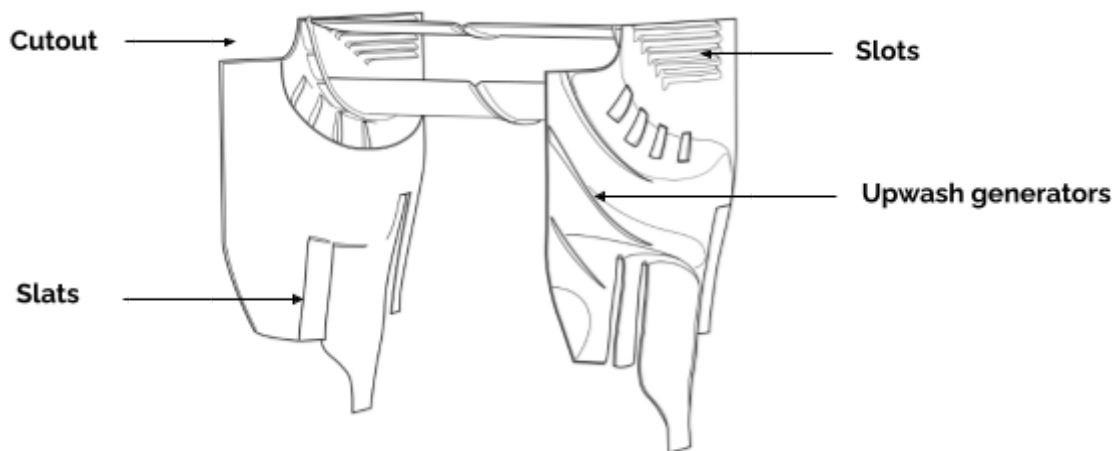
Project description:

Formula Electric Belgium (**FEB**) is a team of highly motivated engineering students that build an electric formula student race car. Just like Formula 1 the team builds a brand-new car each year to compete in multiple international competitions during the race season. Formula Student is the largest international engineering and design competition in the world. The competition is characterized by combustion vehicles, electric vehicles and since recently also autonomous vehicles. Formula Electric Belgium strives towards innovations and the raw performance of technologies. It is for this reason that the team will focus on the autonomous/electric race cars. Research and development applications will be made by postgraduate students in collaboration with thesis students from the KU Leuven and bachelor students from Thomas More.

Thesis description:

Each year the aerodynamic department strives to improve the aerodynamic efficiency of the car. Increasing the downforce improves the cornering speed of the car and thus improving the lap time. However, it is important that this increased downforce does not disproportionately increase the drag of the car.

The endplate is an important element of the rear wing of the car. The endplates control vorticity to decrease drag and increase downforce. The size and shape of these endplates strongly influences these vortices. The more advanced rear wings have a number of slots and cutouts to improve the airflow in the desired places.



Bron: <https://www.f1technical.net/features/20279>

Formula Electric Belgium wants to implement these different slots in the future in order to improve the performance of the rear wing of their Formula Student race car.

Thesis objective:

The aim of this thesis is to design and optimize a new endplate for the rear wing. This structure is optimized by use of CFD software. In the end the design should increase the aerodynamic efficiency of the car.

Are you interested? Please send your resume with accompanying motivation to:

recruitment@formulaelectric.be

Diestsesteenweg 692, 3010 Kessel-Lo

Profile:

- Interested in CFD
- Interested in aerodynamics
- Creative
- Teamplayer

What do you gain?

- A unique engineering- and team experience where hard work and team atmosphere are central.
- Work with innovative technologies in a realistic environment/application.
- Create added value for your curriculum and the team

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