中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2025 Design Briefing

This template is for your guidance and ease of assembly.

Blue boxes contain notes and tips from the judges. You should delete them before submitting your file.

Colors, logos, fonts & background may all be changed to reflect team colors and preferences.

12 point font minimum. 16+ point font preferred.

It is a good idea to include your School Name and Car # on every slide.

XXXX University XXXX Team Car#999

Table of Contents

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

The section headings shown at left are required and must be included.

For each section, the following areas are expected to be addressed:

- Design
- Build
- Testing/Validation/Refinement
- Understanding

Students are encouraged to build out a table of contents, including working hyperlinks within the presentation, if appropriate.

Note: The Powertrain section will be either IC or EV. This template applies to both competitions.

The speaker needs to introduce the content of the first two chapters to all judges in the overall presentation.

The other chapters will be presented separately to specialized judges, you can show this PPT on TV/Pad/Laptop,or print it out.

1. Design/Engineering Executive Summary（2 Pages Max）

These topics should be concisely addressed:

- Recent/relevant team history
- Team update/status (special circumstances)
- Team goals
- Team design/academic philosophy with respect to FSAE
- Team structure (organization and managerial tools)
- Vehicle architecture (engine/motor, frame type, tires, etc.)
- Vehicle highlights

This section is intended to give the Judges a concise overview of your team, your approach, and your vehicle.

Like all sections of this Design Briefing, use bullet points, photos, figures, tables, etc. Sentences and paragraphs do not belong in this format.

This is a design executive summary, not a marketing piece.

May be 1 or 2 pages.

2. Overall Vehicle（8 Pages Max）

Remember: This is a Design Briefing. The "Why" is as important as the "What". Specifications should be accompanied by rationale.

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2.1Vehicle Description

This page is required.

Include key parameters and goals you want the judges to know. This helps put your design into context.

Should include targets if different than actuals.

2. Overall Vehicle（8 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2.2Vehicle Views

This page is required.

Show your car. CAD, Photograph, Drawings are all permitted, whatever you think best portrays information.

This page does not need to follow guidelines of the 3View Drawing Submission.

2. Overall Vehicle（8 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2.3Points Goal

Points Goal by Event	
Presentation	
Cost	
Design	
Acceleration	
Skidpad	
Autocross	
Endurance	
Efficiency	
Overall:	

This page is required.

How do you expect to score in each event and why? How did you determine these targets (simulation, statistics or other methods)?

2. Overall Vehicle（8 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2.4Mass Breakdown

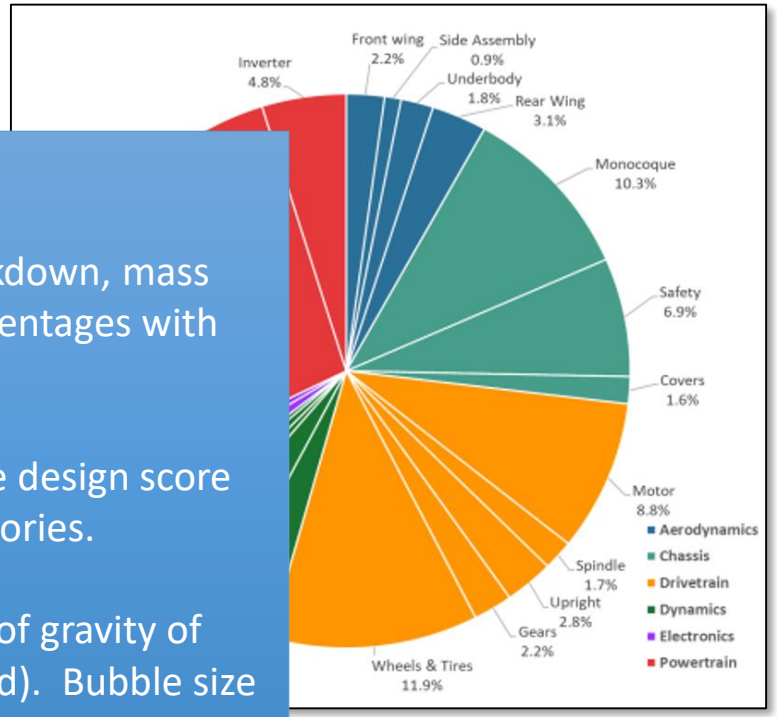
Noteworthy com

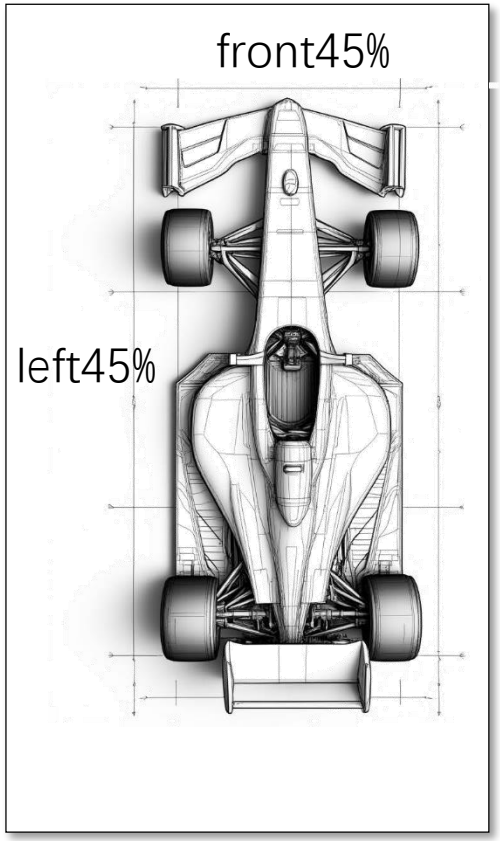
This page is required.

Required elements: Pie chart of mass breakdown, mass without driver (box in upper right) and percentages with driver (% Front and % Left)

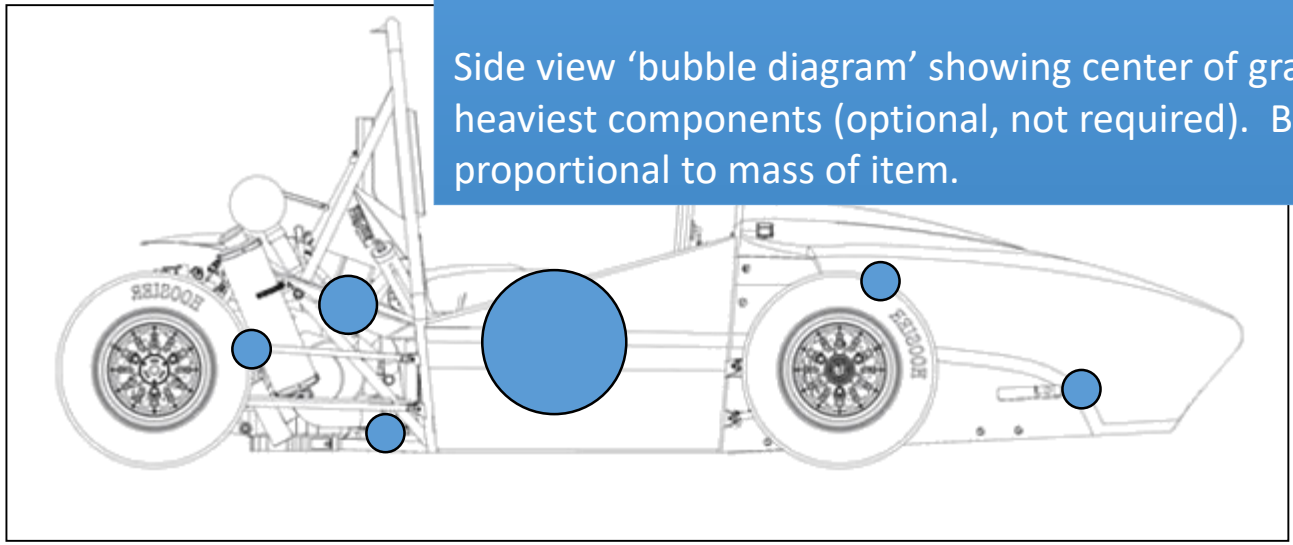
Recommended, but not required, to use the design score sheet system breakdown for pie chart categories.

Side view ‘bubble diagram’ showing center of gravity of heaviest components (optional, not required). Bubble size proportional to mass of item.





Mass without driver 200kg
Mass with driver 270kg



2. Overall Vehicle（8 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

2.5Performance planning（Page5 to 6）

The study of Vehicle Dynamics

Lap Simulation

Performance target

The combination of power, suspension, and aerodynamics

Hardware selection(tier,damper,and others)

2. Overall Vehicle（8 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

Free Display（Page7 to 8）

Two more slides are permitted in this section. Use them to show how you approached the Overall Vehicle topics listed on the Design Event Scoresheet (available on fsaeoneline.com).

You are strongly encouraged to show your organizational chart and your timeline. List specific milestones, including first drive.

Determination of subsystem design specs (goals and tradeoffs) from a whole-vehicle perspective are relevant here.

These are what you should show in the Overall introduction section, after that, we will start discussions with different majors.

3. Vehicle Dynamics (8 Pages Max)

From this part is the information for each group, you can show them in anyway you want. However, the information in this briefing must be reflected.

Should include the following:

- Tire selection;
- Suspension kinematics design;
- Design of suspension stiffness characteristics;
- Design of suspension damping characteristics;
- Steering geometry design;
- Simulation and experimental validation.

4.Aerodynamics (8 Pages Max)

Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

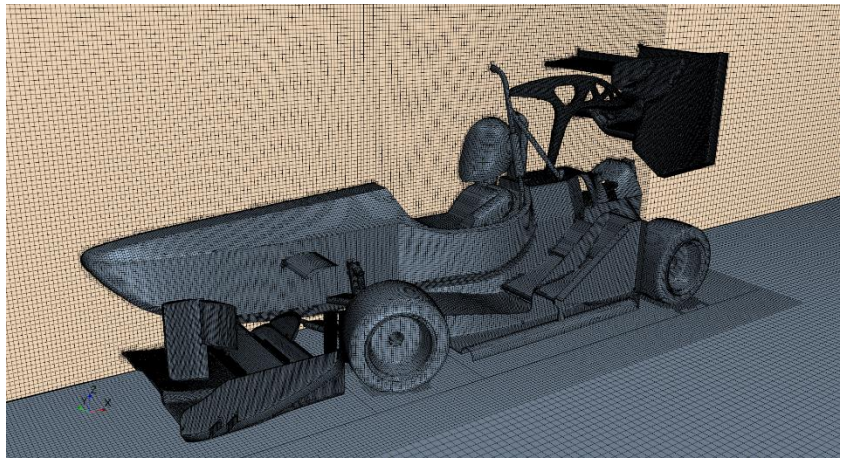
中国大学生方程式系列赛事
FORMULA STUDENT CHINA

4.1 CFD Settings

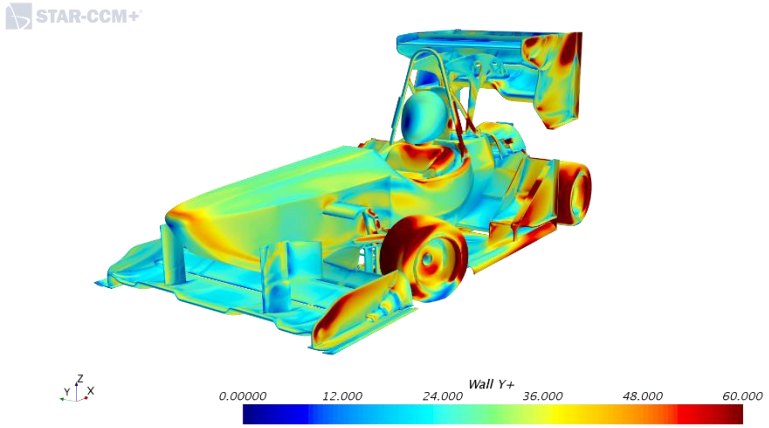
This page is required.

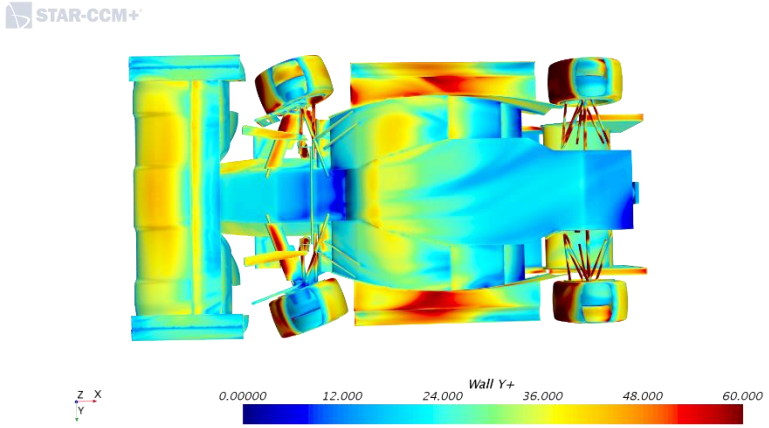
Software	Star ccm+
Mesh type	Trimmer+Prism
Number of element	15 million
Turbulence model	K-epsilon
velocity	20m/s
Total thickness of layers	3~5mm
Number of layers	5
Growth ratio of layers	1.2

Fill the table with what you set in your CFD work.



You should show the result of Y Plus. Both the upper and lower surfaces are required





4.Aerodynamics (8 Pages Max)

Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

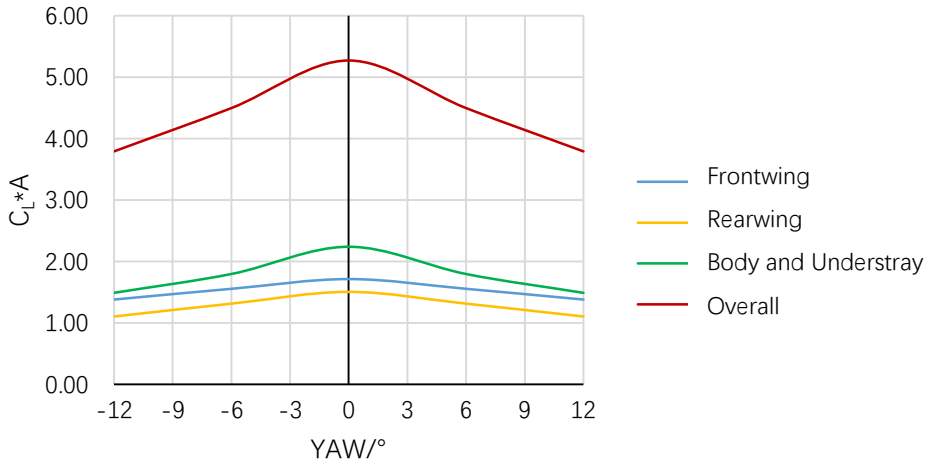
中国大学生方程式系列赛事
FORMULA STUDENT CHINA

4.2 Overall Characteristics Of Aerodynamis

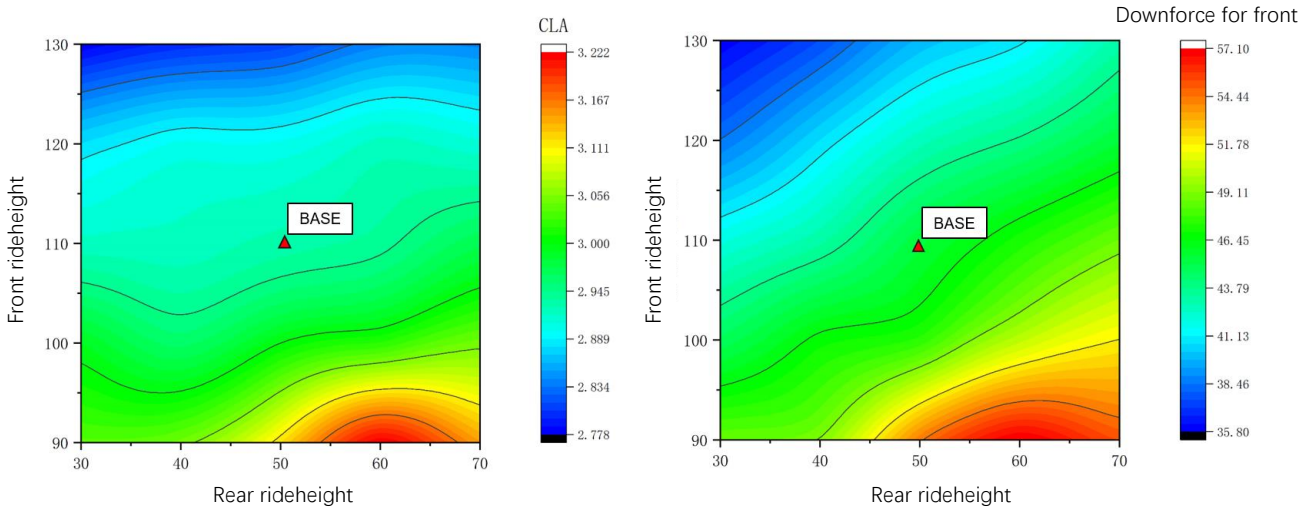
4.2.1 Straight driving conditions (example)

Parameter	Value
C_L*A	5.3
C_D*A	1.8
Downforce for front	48%

4.2.3 YAW （example）



4.2.2 Aeromap Of Pitch & Different Rideheight



These three part of this page must be showed.
If you did the work of ‘Skidpad’， you can also show the result here.
If you use the understray in your car, you should set the tyres with the correct position in the YAW condition.

4.Aerodynamics (8 Pages Max)

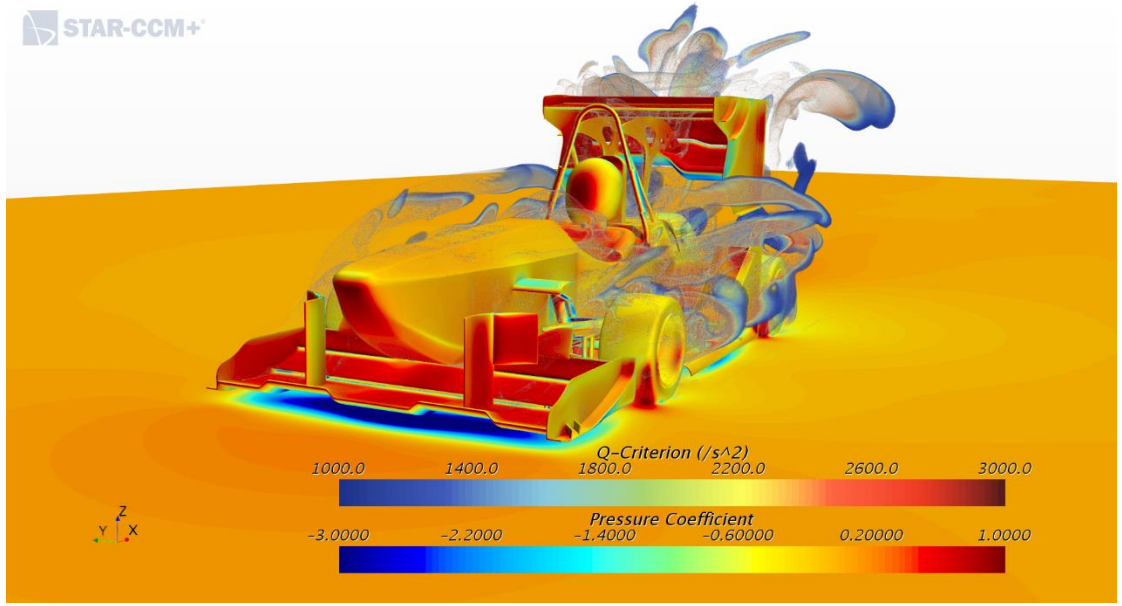
Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

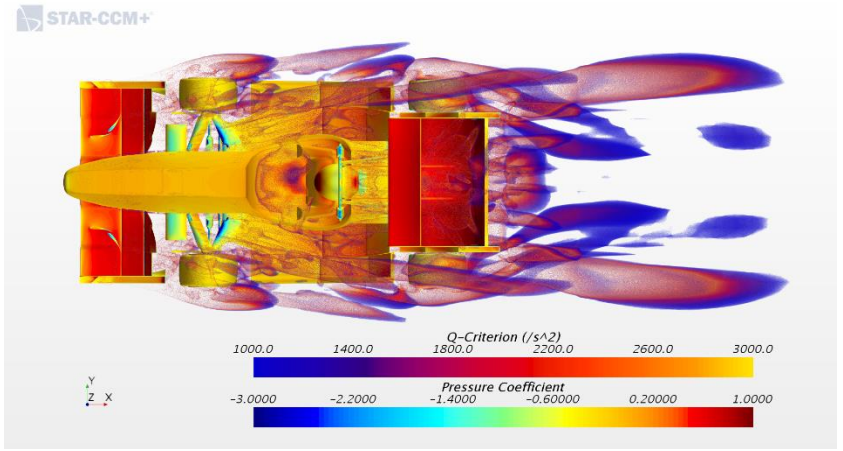
4.3 CFD Result

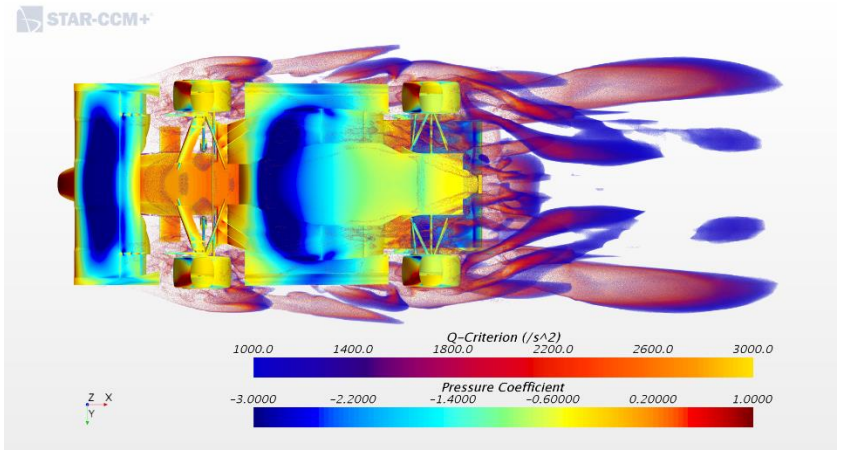
This page is required.You can choose to print out these pictures if the page is not large enough.

You should show the pictures of pressure coefficient and votex



You can show the pictures like these.





4.Aerodynamics (8 Pages Max)

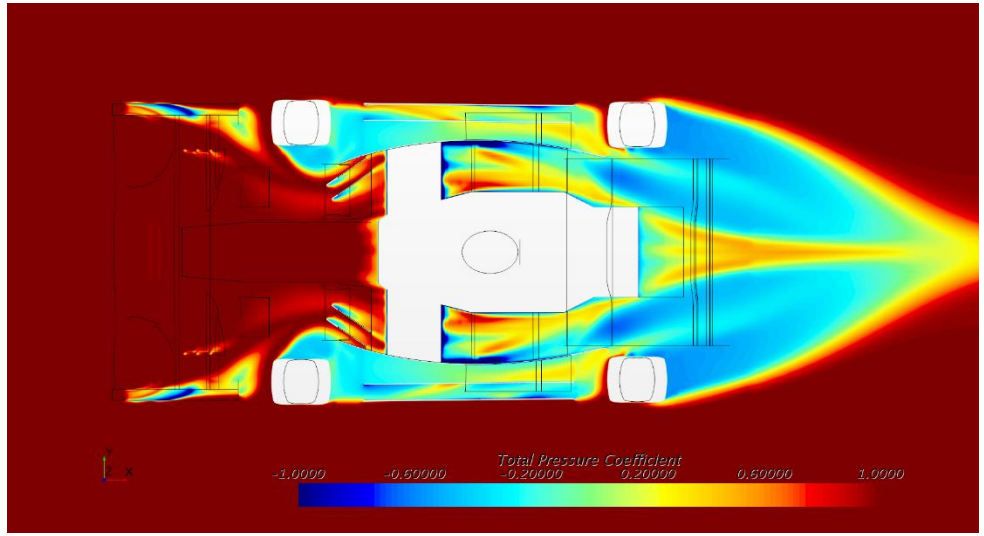
Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

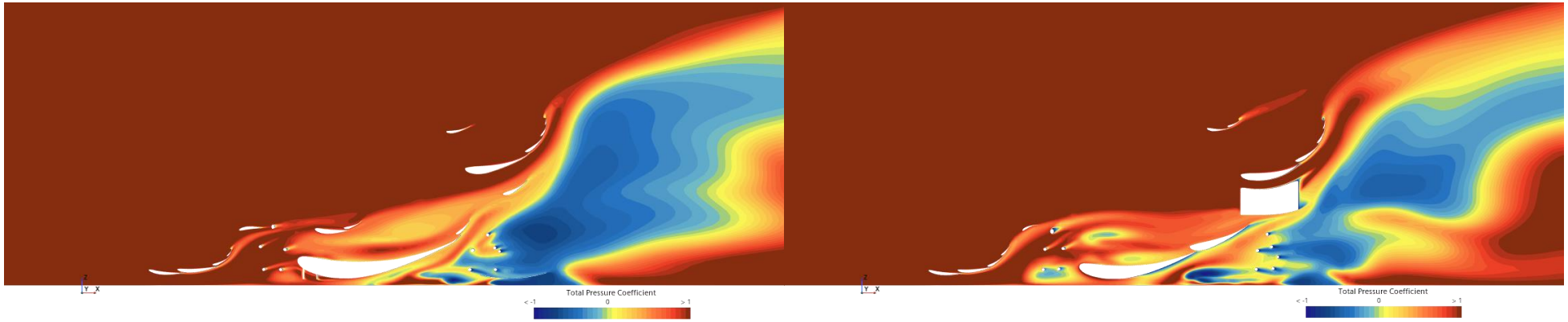
4.3 CFD Result

This page is required.You can choose to print out these pictures if the page is not large enough.

You should show the total pressure coefficient on the XY plane above the ground. The distance between the plane and the ground is 30/40/50mm.



Y=0mm、Y=300mm、Y=400mm、Y=500mm
The total pressure coefficient on these XZ planes.



4.Aerodynamics (8 Pages Max)

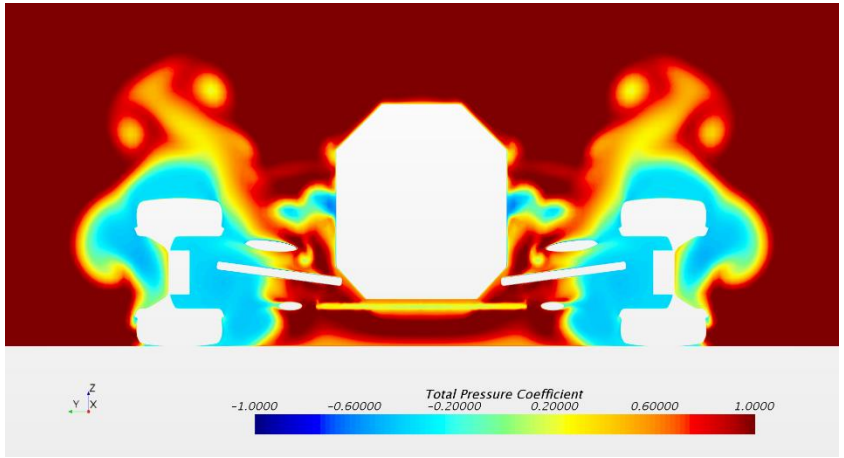
Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

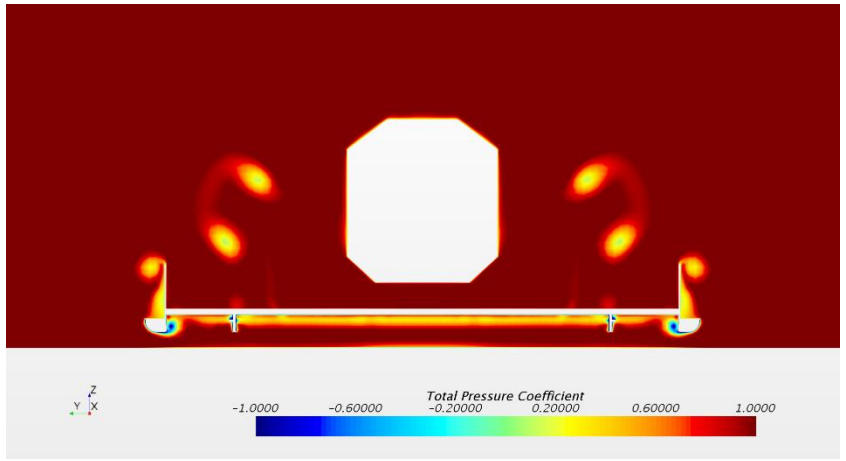
中国大学生方程式系列赛事
FORMULA STUDENT CHINA

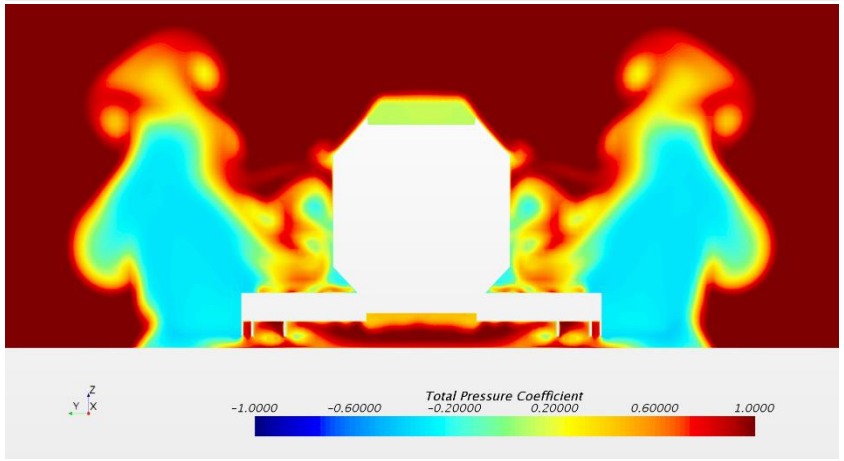
4.3 CFD Result

This page is required.You can choose to print out these pictures if the page is not large enough.

You should set more than 10 cutplanes from front to back, these locations are required:
The endplate of the frontwing;
Near the front tyre;
The entrance of the understray;
Total pressure coefficient on these areas must be checked.







4.Aerodynamics (8 Pages Max)

Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

4.4 Free Display

You can show anything you want in this part. Such as ideas, or something which you think is very successful.

4.Aerodynamics (8 Pages Max)

Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

4.5 Build

This page is required.
Show off your processing method. How to build each part?

4.Aerodynamics (8 Pages Max)

Note:The pictures and tables in this part are unrelated,it is just an example for what you should show in the report.

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

4.6 Testing And Checking

This page is required.
Show the work you have done to prove your design does work.

5. Powertrain (8 Pages Max)

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

5.1 Summary

This page is required. Here you should display the following:

For the fuel/hybrid group -
- Design objectives;
- Engine selection;
- Main parameters of the engine and hybrid system;
- External characteristic curves;
- Technical route or main technical features.

For the electric/driverless group-
- Design objectives;
- Motor and battery selection;
- Main parameters of drive, transmission, energy storage system;
- Technical route or main technical features.

5. Powertrain (8 Pages Max)

The rest of the page content is a free-for-all and is suggested to include the following:

For the fuel/hybrid group -
- Intake and exhaust system design;
- Lubrication and cooling;
- Electronic control system design;
- Injection/ignition strategy;
- Fuel System Design;
- Transmission System Design;
- Simulation and Test Verification;

For the electric/driverless group -
- Power Battery Design;
- Battery management system selection or design;
- Motor controller sizing or design;
- Thermal management design;
- Drive train design;
- Simulation and test verification.

6. Chassis (8 Pages Max)

6.1 Structure Design

This page is required.Here you should show the following:

For trussed frames -
- Design Objectives;
- Frame structure design;
- Frame material selection;
- Bending and torsional stiffness calculation;
- Modal calculation.

For monocoque shells -
- Design Objectives;
- Monocoque Shell Layup Design;
- Structural design of monocoque shells;
- Bending and torsional stiffness calculations;
- Modal calculations.

6. Chassis (8 Pages Max)

6.2 Technology

This page is required. Here you should show the following:

For trussed frames -
- Welding process
- Clamping and Positioning Methods
- Dimensional verification

For monocoque shells -
- Pre-embedding process
- Molding process
- Dimensional verification

6. Chassis (8 Pages Max)

6.3 Safety

This page is required. Here you should show the following:

- Firewall Design
- Pipe through firewall method
- Buffer block design
- Head restraint and seat belt arrangement
- Simulation or test verification of cushion blocks
- Chassis strength calculation or crash simulation, etc.

6. Chassis (8 Pages Max)

The remaining pages are optional. It is recommended that the following be displayed:

- Structural design of key components such as suspension and steering;
- Strength calibration of key components;
- Lightweight design;
- Fatigue and life calculation, etc.

7. Driver Interface & Brakes （6 Pages Max）

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

Recommendations include the following:

- Design objectives of the braking system;
- Parameter matching design of the braking system;
- Design of key components of the braking system;
- Pedal assembly design;
- Basic process of ergonomic design;
- H-point position and H30 dimension;
- Eye ellipse and hand reach and interface;
- Steering wheel and seat design;
- Switch Panel Design.

8. Low Voltage Elec. & Data Acquisition (6 Pages Max)

8.1 Car network

This page is required. Here you should show the topology and baud rate settings of the in-vehicle network and introduce all the node devices that access the in-vehicle network.

8. Low Voltage Elec. & Data Acquisition (6 Pages Max)

8.2 Sensor

This page is required. Here you should list all the sensors on the car.

8. Low Voltage Elec. & Data Acquisition (6 Pages Max)

中国大学生方程式系列赛事
FORMULA STUDENT CHINA

The remaining pages are optional. It is recommended that the following be displayed:

- Low voltage power distribution design;
- Wiring harness design, including cable selection and connector selection for the wiring harness;
- Low-voltage control system, including VCU/ECU selection and main functions;
- Data acquisition and application methods.