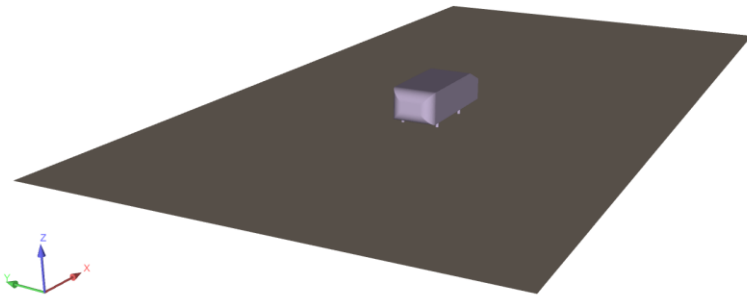- Let us run this case. Go to the directory:

$PTOFC/ahmed_single

- $PTOFC is pointing to the directory where you extracted the training material.

- In the case directory, you will find a few scripts with the extension .sh, namely, `run_all.sh`, `run_mesh.sh`, `run_sampling.sh`, `run_solver.sh`, and so on.

- These scripts can be used to run the case automatically by typing in the terminal, for example,

  - `$> sh run_solver`

- These scripts are human-readable, and we highly recommend you open them, get familiar with the steps, and type the commands in the terminal. In this way, you will get used with the command line interface and OpenFOAM commands.

- If you are already comfortable with OpenFOAM, run the cases automatically using these scripts.

- In the case directory, you will also find the `README.FIRST` file. In this file, you will find some additional comments.

Ahmed body – External aerodynamics

Physical and numerical side of the problem:

- In this case, we are going to solve the flow past the Ahmed body [1].

- In this case, we compare the numerical results obtained with OpenFOAM, against the experimental results obtained in references [2, 3].

- The simulations were conducted for a slant angle of 25 degrees and a velocity of 40 m/s.

- This problem has a lot of experimental data (with a lot variance in the values reported).
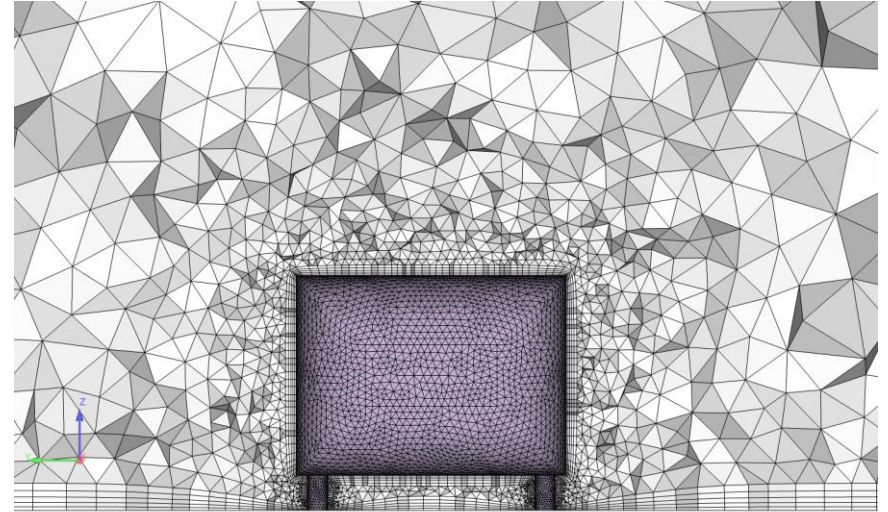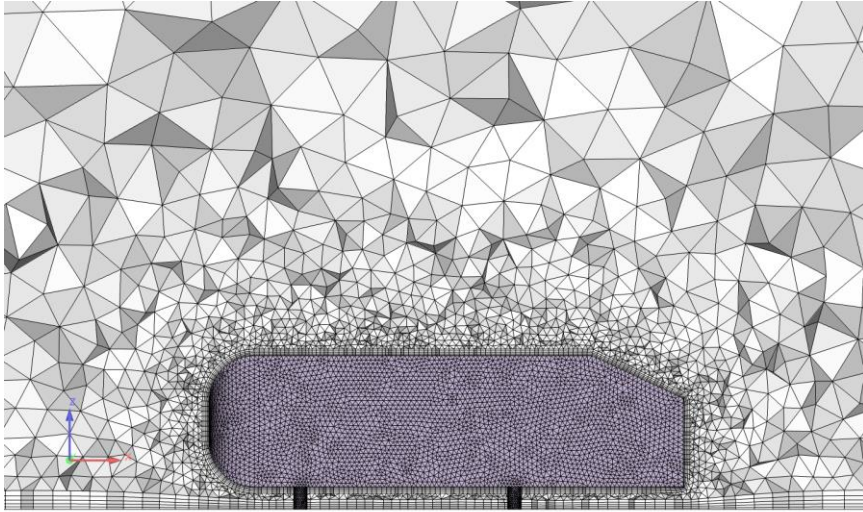
[1] Some Salient Features of the Time-Averaged Ground Vehicle Wake, SAE-Paper 840300, 1984.
[2] Aerodynamic Performance of Vehicles in Platoons: The Influence of Backlight Angles. SAE Technical Paper 2007-01-1547, 2007.
[3] On the Aerodynamic Performance of Automotive Vehicle Platoons Featuring Pre and Post-Critical Leading Forms. R. Pagliarella, PhD Thesis. RMIT University.

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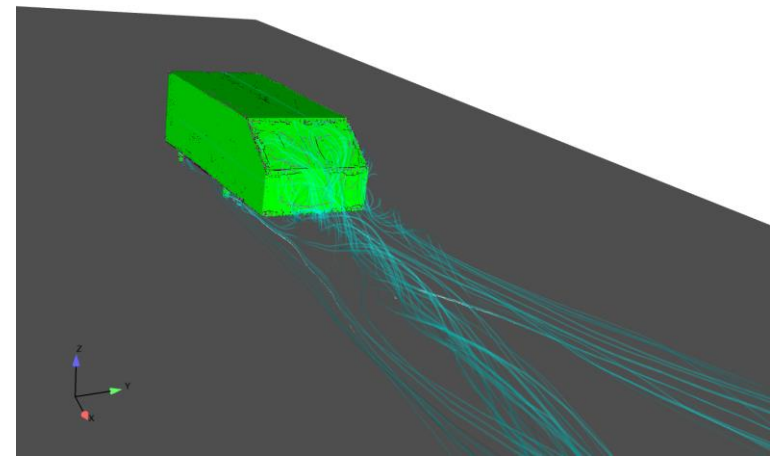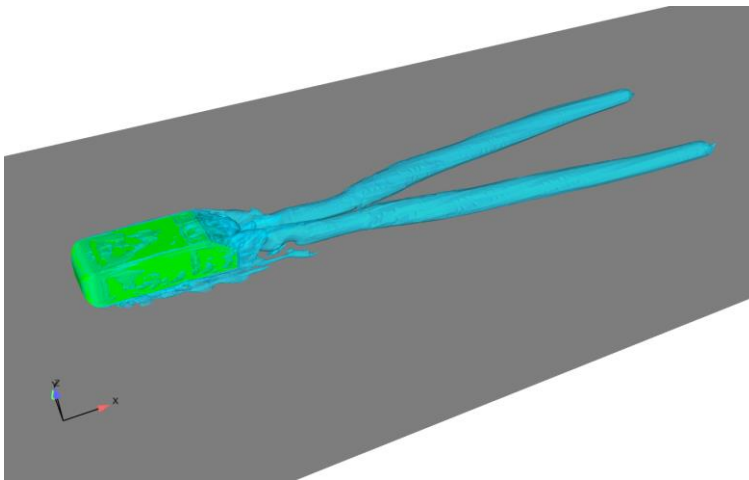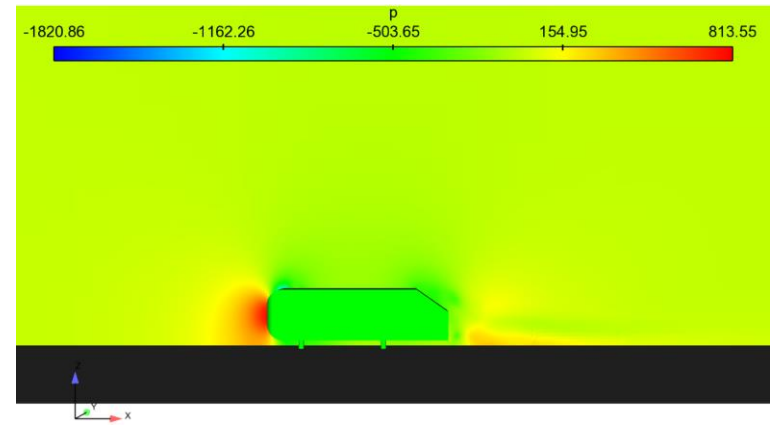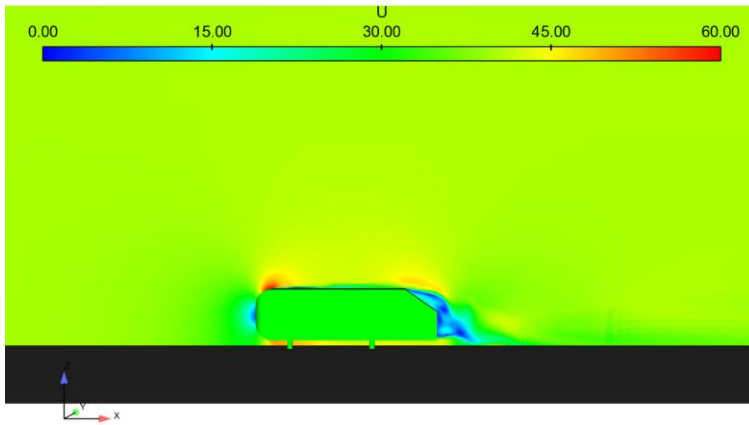
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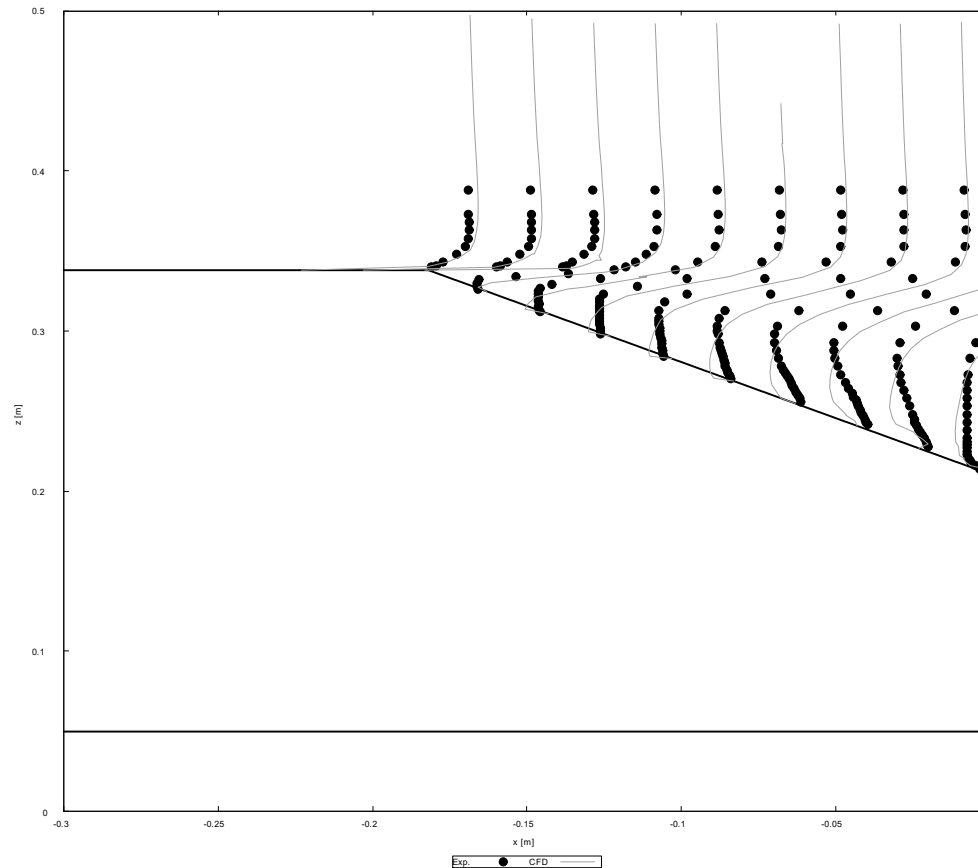

- Some colorful fluid dynamics.

Ahmed body – External aerodynamics

- If you want to go for the extra mile, compare your solution against the experimental data available.
- In the figure, the continuous line represent the CFD solution, and the dots represent the experimental measurements.