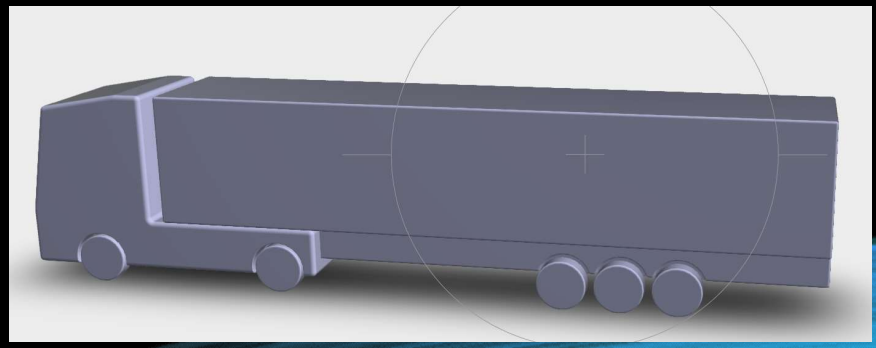
AERODYNAMIC SIMULATION

Of a truck with aerodynamic traier



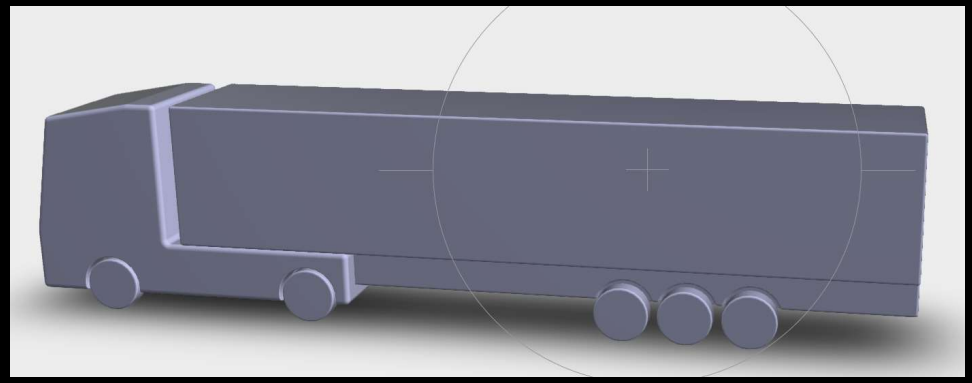
INTRODUCTION

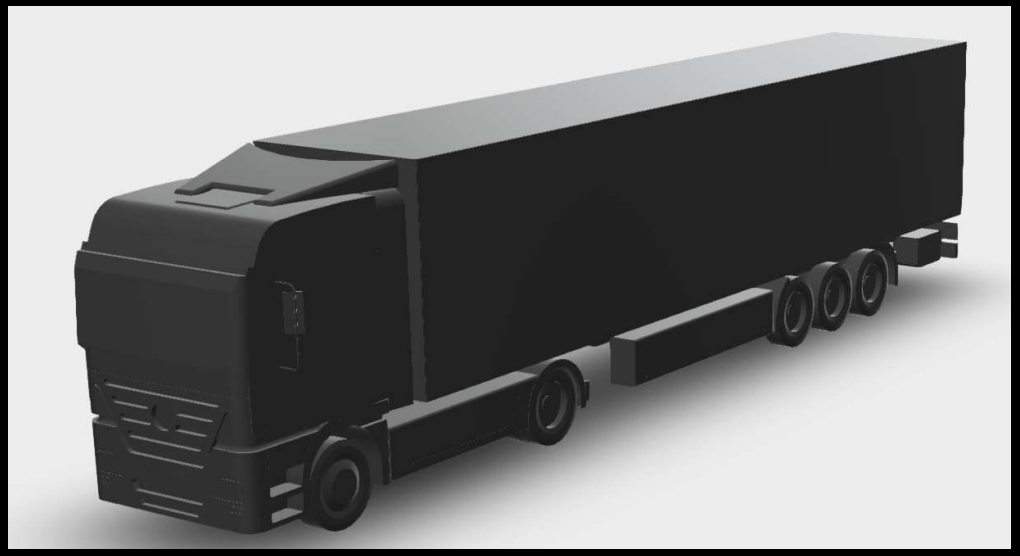
- Hello, I am looking for someone experienced in aerodynamic simulations and that can do some basic 3D changes on existing 3D model.
- I am doing some analysis of aerodynamic trailer for my student work and need the results quite soon. But since model is not complicated i believe meshing and calculating may not be very consuming.
- As I am a student, please be reasonable with price as I cannot afford much.

- **All correspondence can be done at adria.nature@gmx.de**

MODEL CHANGE

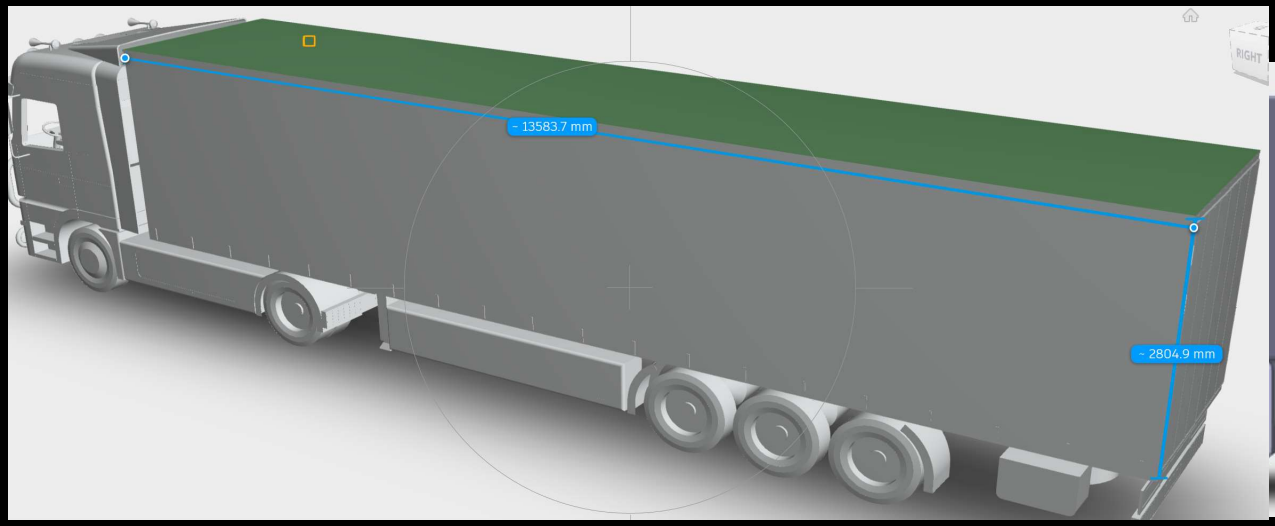
- Change from primitive model to more sophisticated one

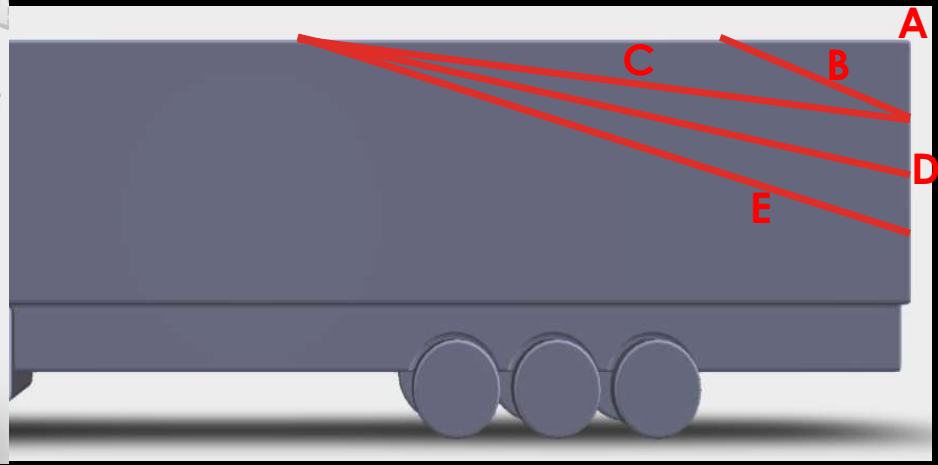




HAVE 5 DIFFERENT SLOPE MODELS

- A Full truck trailer – like in 3D file stp and igs
- B sloped roof 3,5 meter from the back – 0,8 m from the top
- C sloped roof 7m from the back – 0,8 m from the top
- D sloped roof 7m from the back – 1,5 m from the top
- E sloped roof 7m from the back – 2,0 m from the top

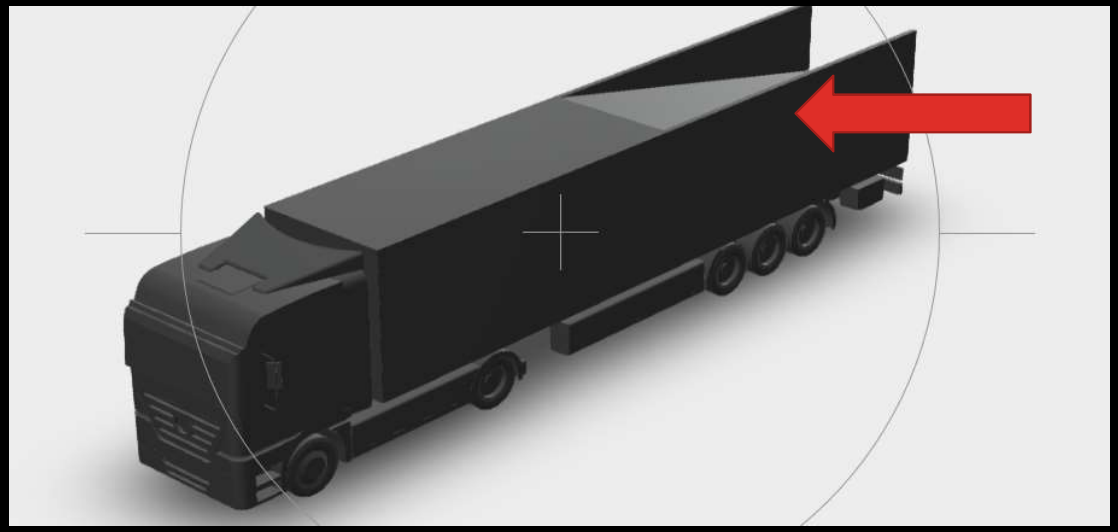




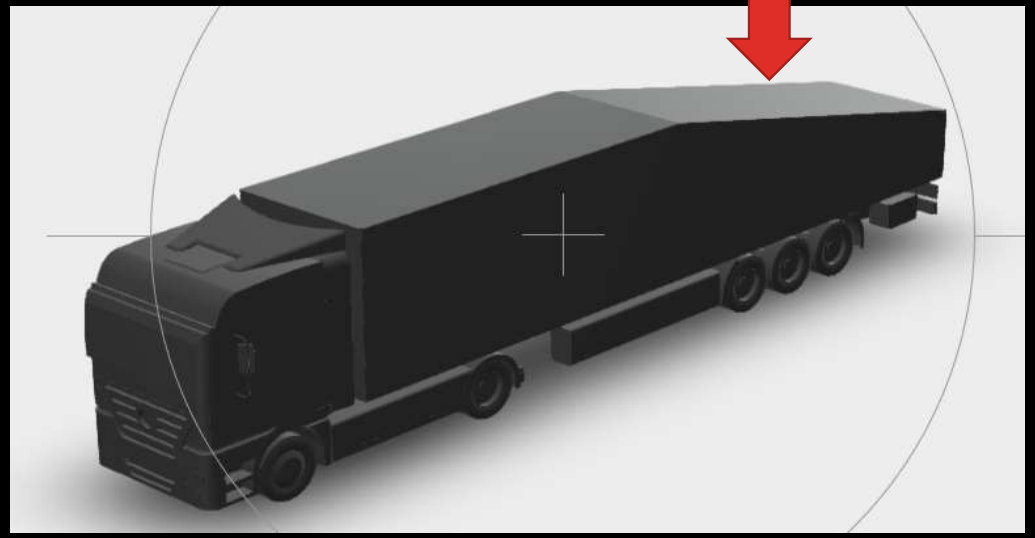
HAVE 2X MORE MODELS WITH AND WITHOUT WALLS

- Each of five versions A...E is done with and without side walls Total 10 versions

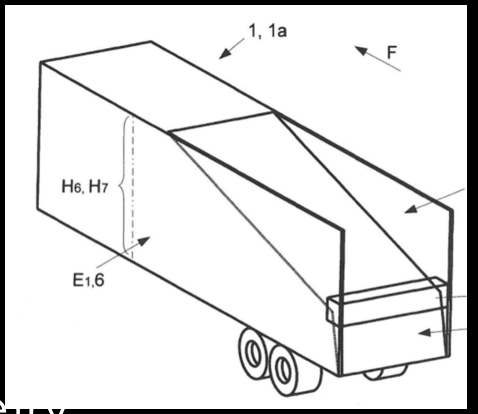
With side walls



Without side walls



BOUNDARY CONDITIONS



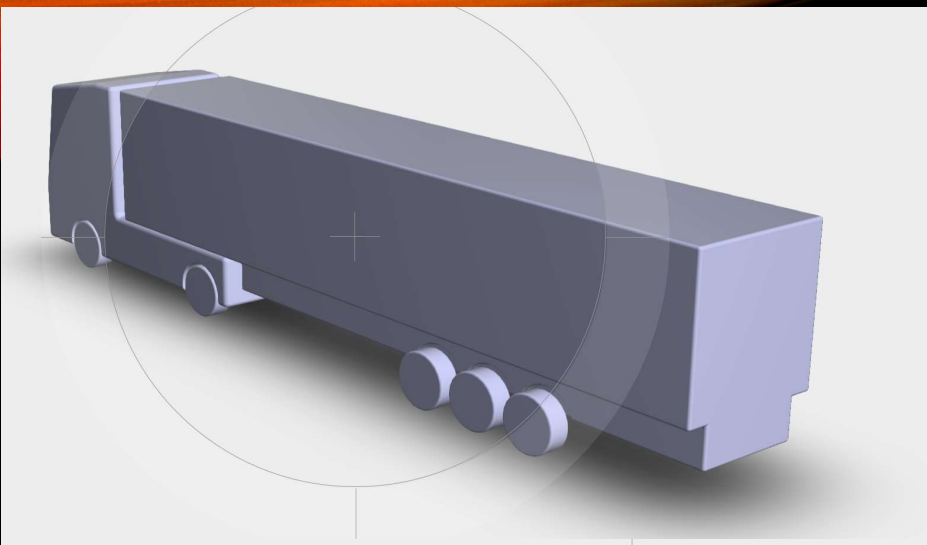
- All simulations have to have same conditions
- 90km/h aerodynamic speed
- 25 degree Celsius
- Roof is foldable – up/down as in sketch
- So Scenarios A,B,C,D,E only change the roof and back geometry

- Need fully converged solution – min ca 500 iterations
- Need a good mesh – min ca 3M cells
- Minimal computing range: 1 truck lenght to the front, 2 lengths to the back, 2 heights in height and 2 widths on each side left and right

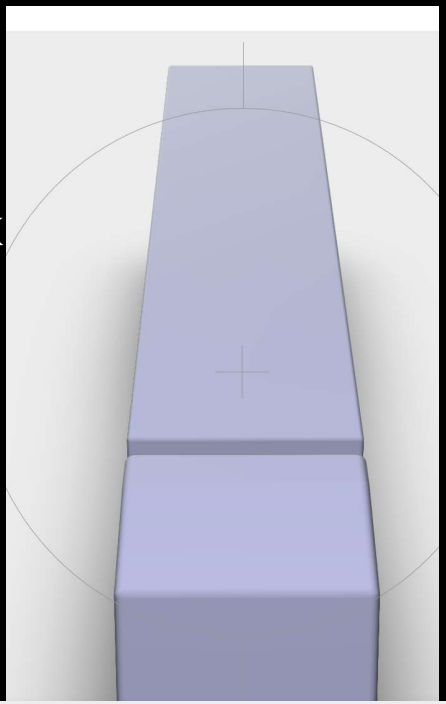
RESULTS

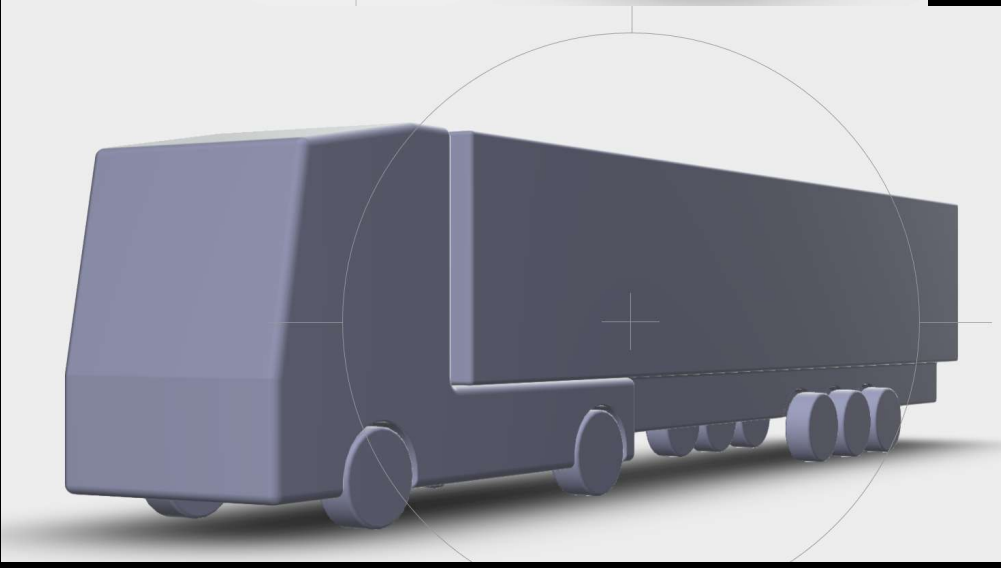
- Need comparison results of aerodynamic drag comparison
- Example: A 100% ; B 95% ; C 86%; D75%
- Need printscreen pictures of aerodynamic flow from each scenario
- Need printscreen pictures of pressure diagram from each scenario

RESULTS



- Airflow and velocity
- Side top back
- Top back
- Side front
- Side





AFTER THAT

- If succesfully simulated, I will ask you for more simulations for a changed 3D model on the front of the truck
- Thank you!

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