

Car Body Pressure Prediction

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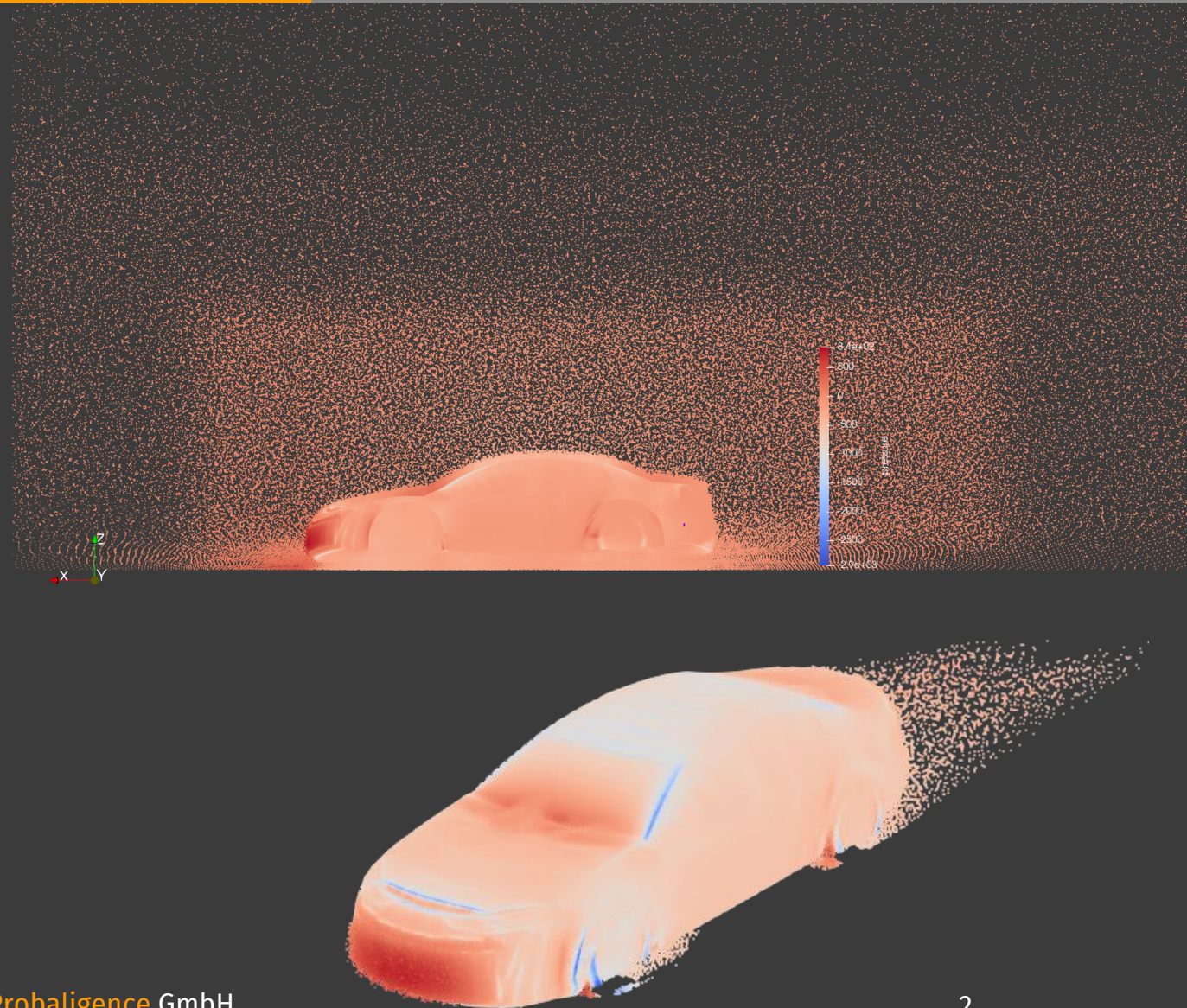
**CAE Senior Engineer
RBF Morph

CADFEM GROUP

rbf™ **Ansys**
SELECT TECHNOLOGY PARTNER

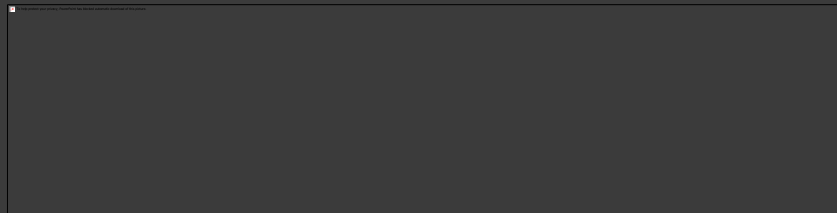
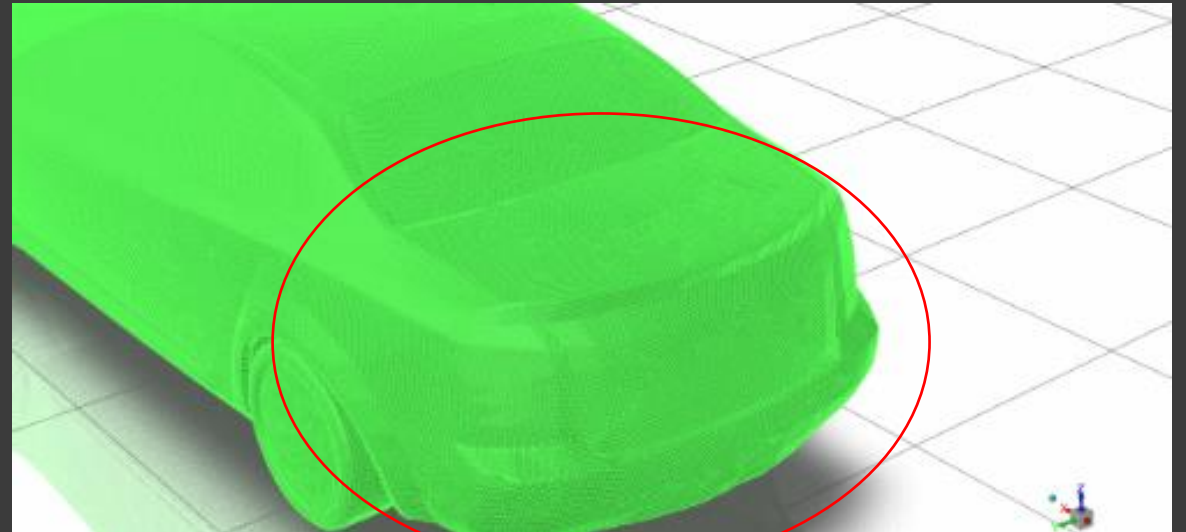
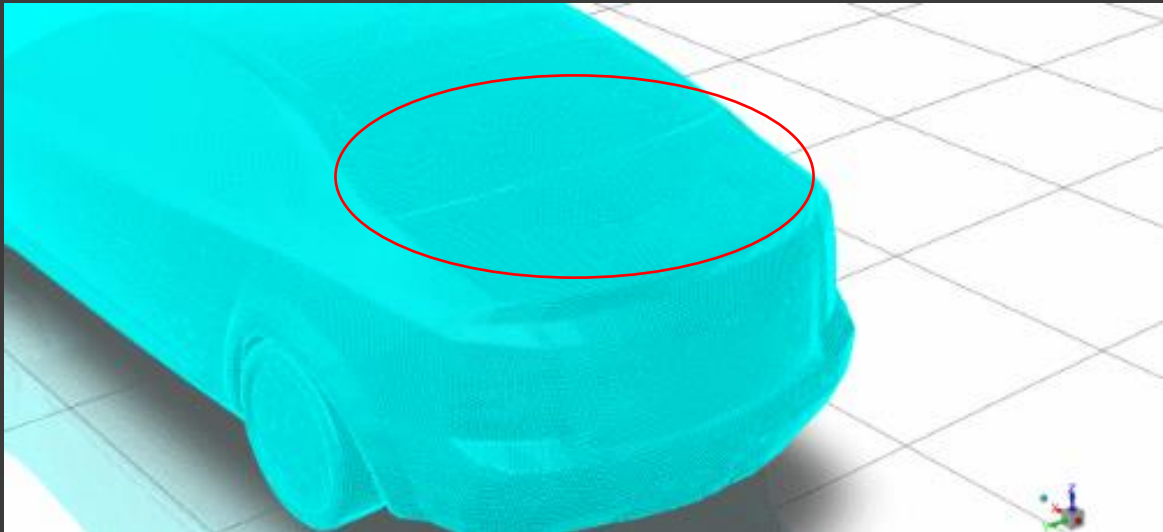
Data overview

- 51 design variants
 - 45 for training / 6 for test
 - 1,542,308 nodes
 - Simulated in Ansys Fluent
- Input parameters:
 - back light angle and boat tail angle (see next slide)
- Output parameters:
 - Pressure at every node on the car body

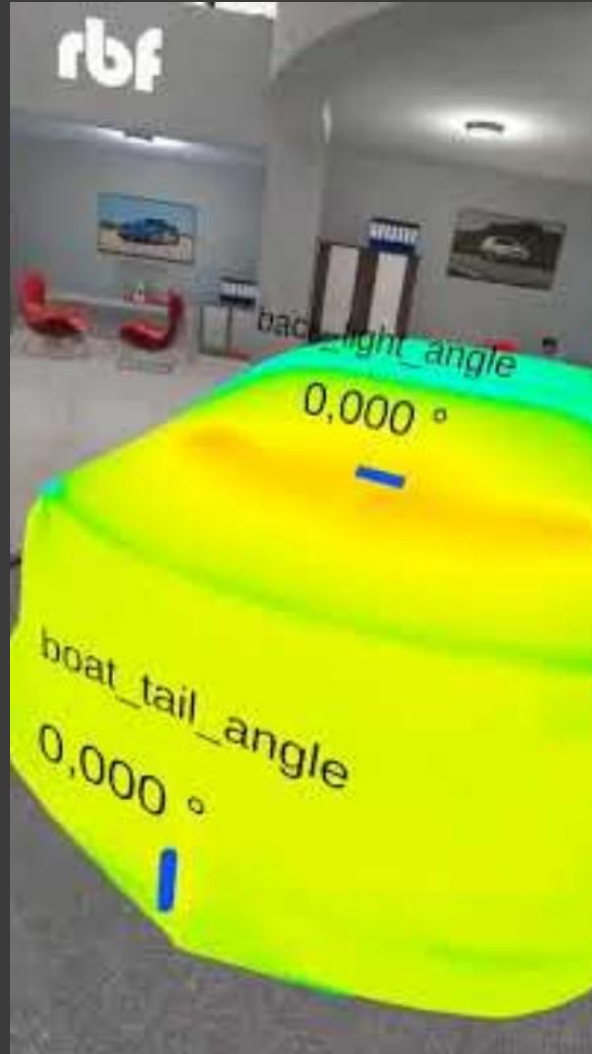


Visualization of the geometric changes

Variation of back light angle and boat tail angle



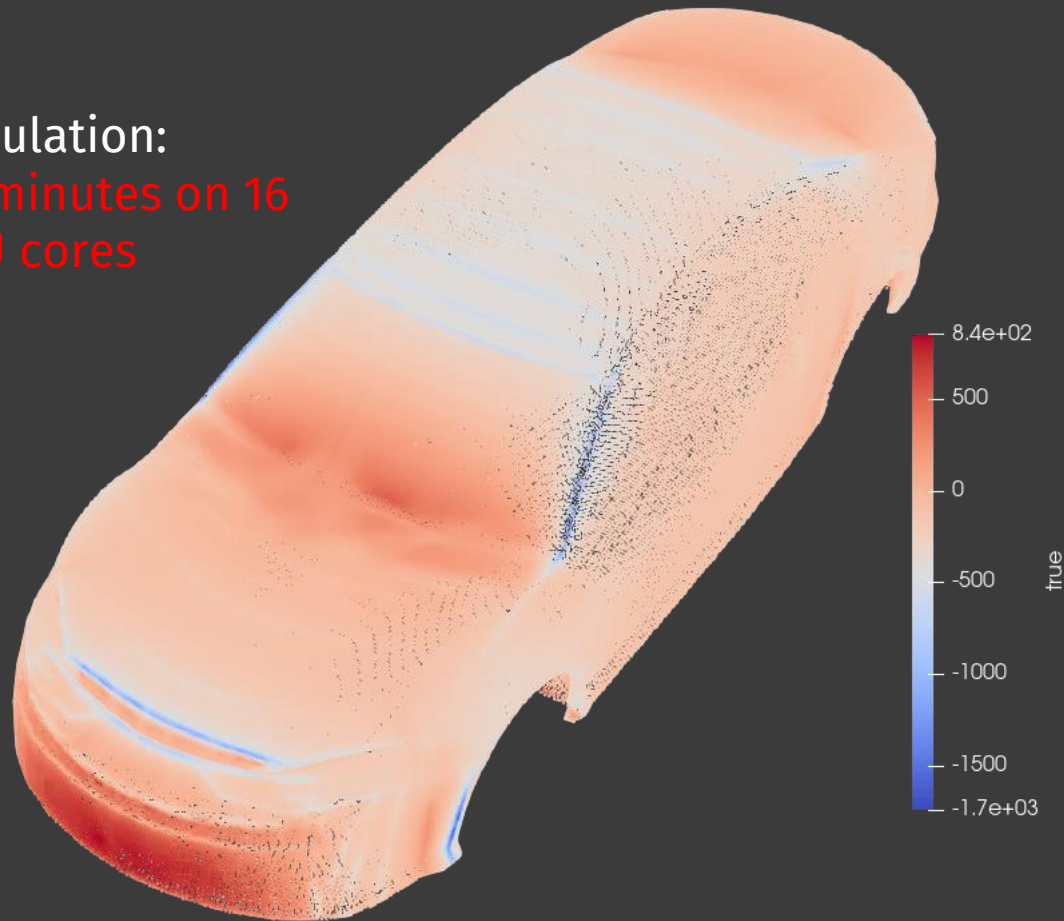
VR – Mesh Morphing



Overview prediction vs. true for a test design

- Training time: 10 seconds (advantage of constant mesh via mesh-morphing)

Simulation:
80 minutes on 16
CPU cores



Prediction
1 second

