

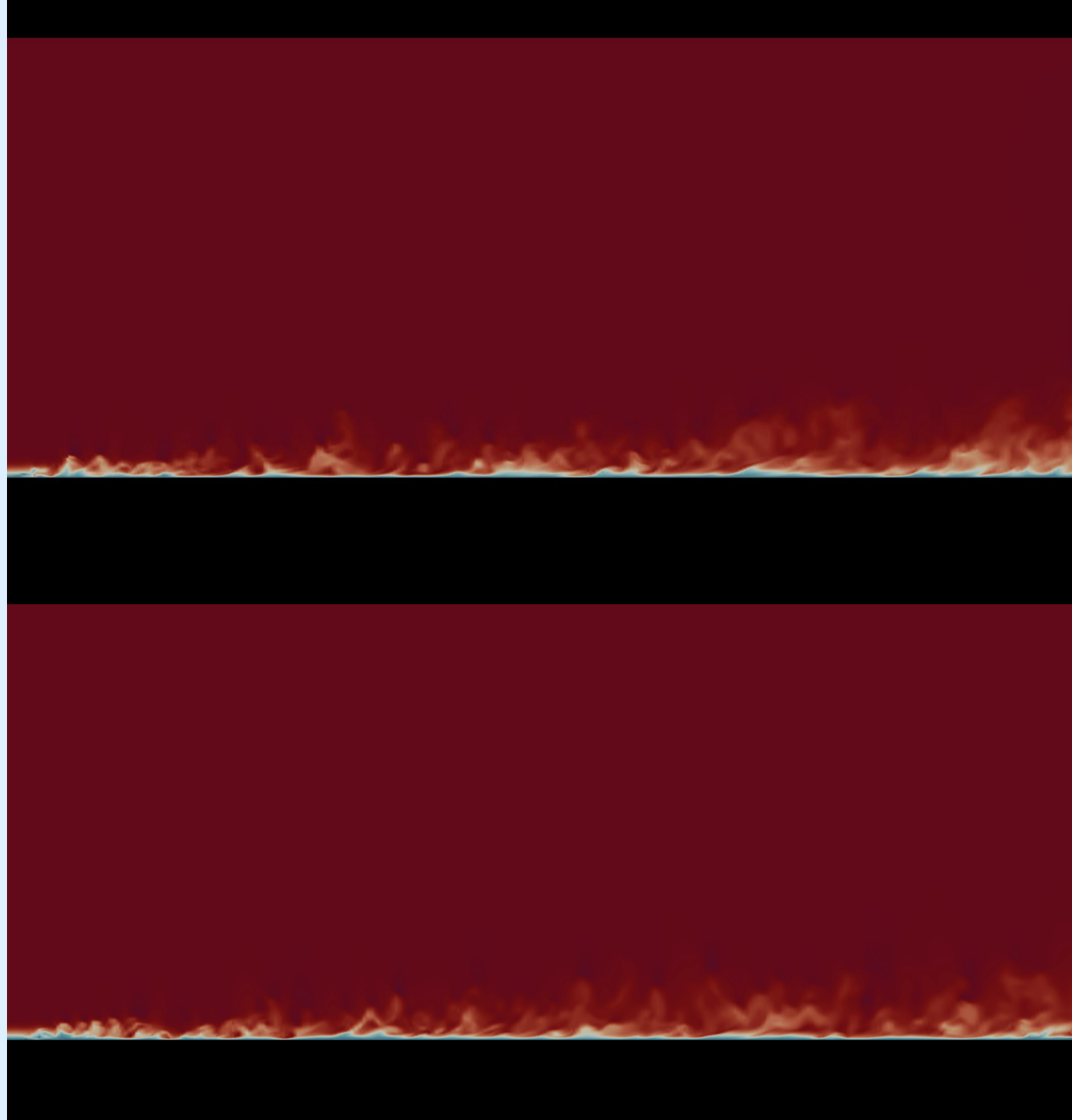


Master's Thesis update from 18.04.2024

Franciszek Walesiak

1st Run on Dardel

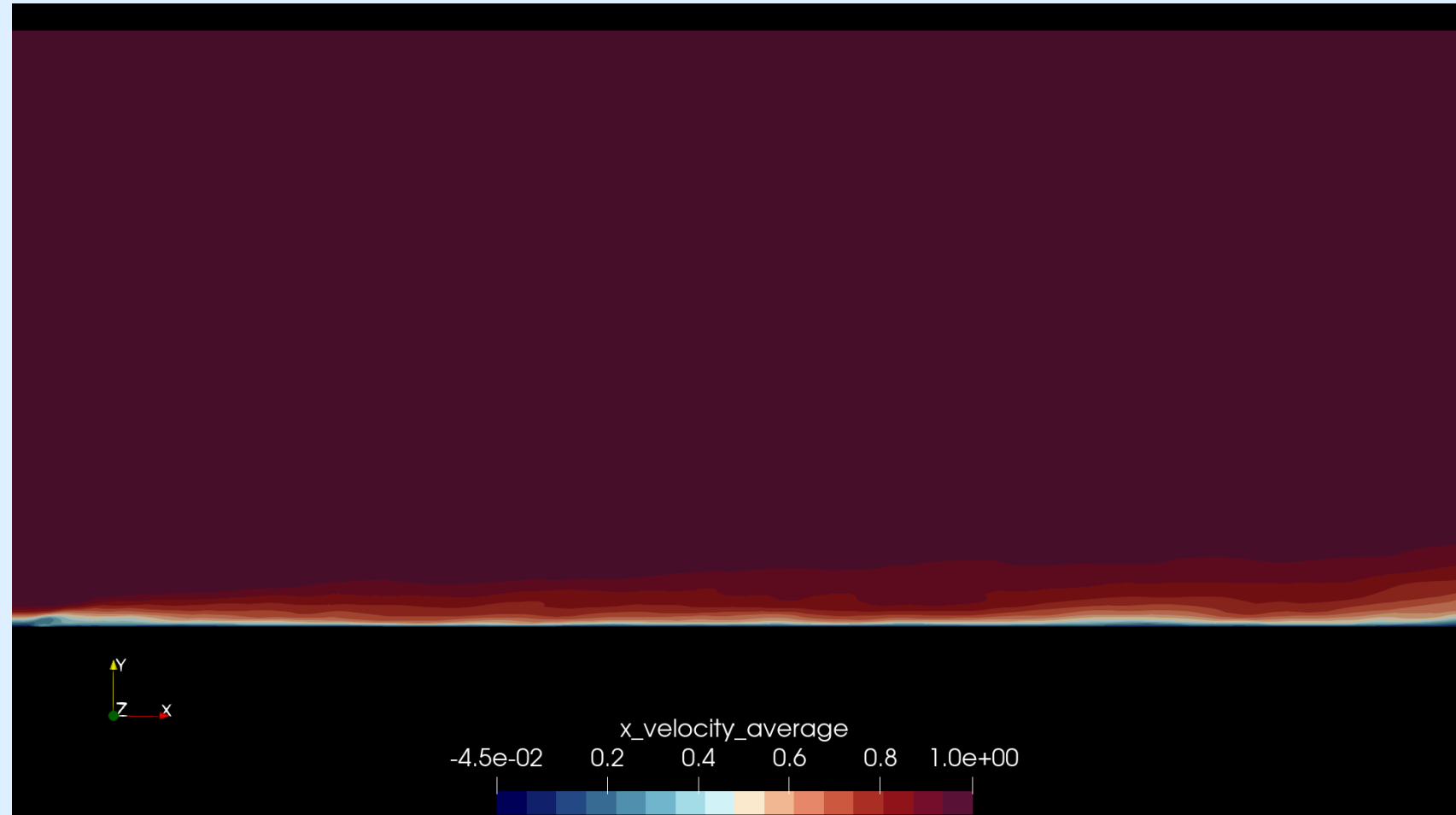
- Got access to the Dardel
- Manage to compile and run it on Dardel
- Two instantaneous fields (Stretched twice in the wall-normal direction) 21 and 25 time unit



Initial Results

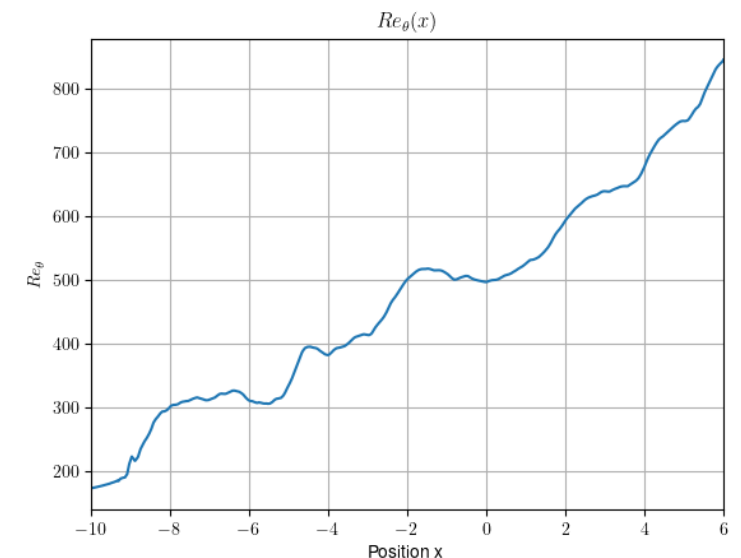
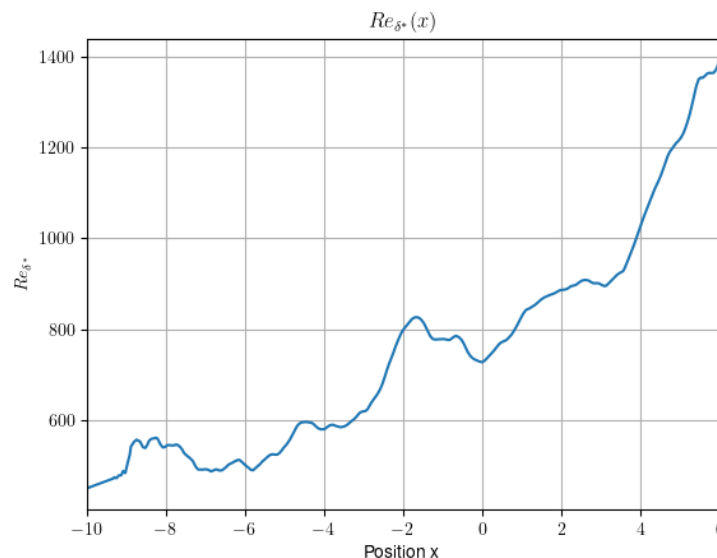
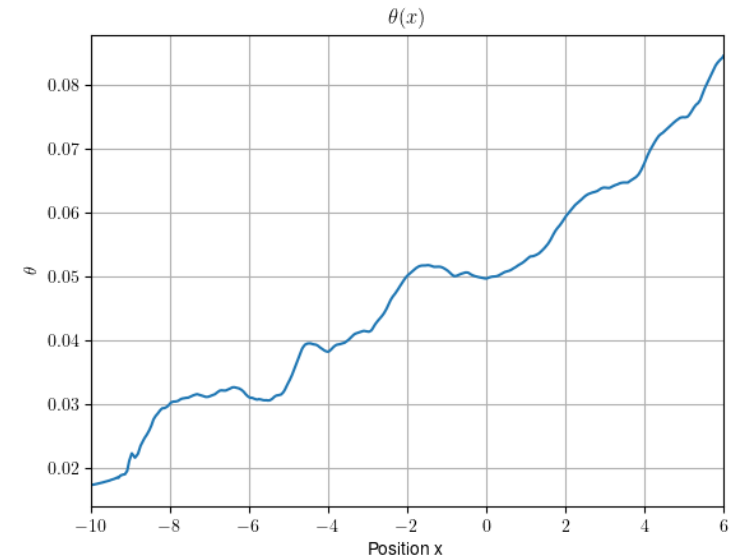
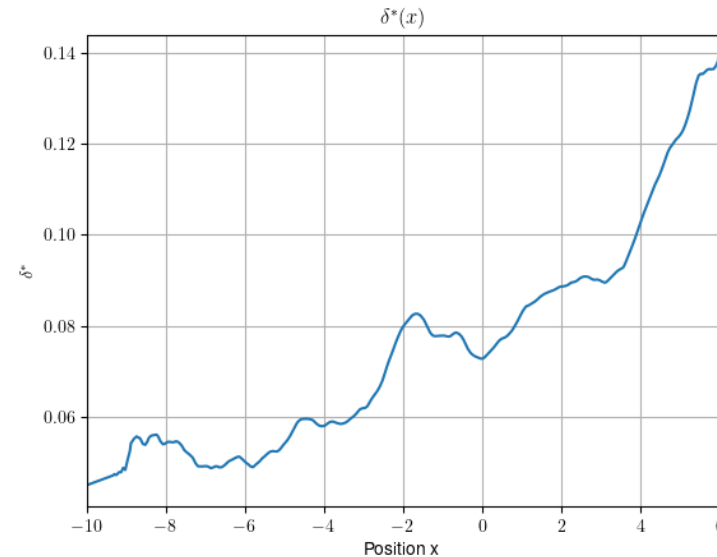
Temporal Averaged field in ParaView:

- 40 timesteps (21 to 25)
- NOT averaged in the spanwise direction



Initial Results

- The temporal averaged field of the middle cross-section was exported to .csv from ParaView
- .csv was imported to Python
- Calculated δ^* and θ from the .csv file using Python and trapezoidal rule
- The obtained Re_{δ^*} for the inlet is equal to 450- \rightarrow correct



Next steps

- Learning usage of Marco's Toolbox
- Continue reading with the main focus on:
 - Eitel-Amor, Georg, Ramis Örlü, and Philipp Schlatter. "Simulation and validation of a spatially evolving turbulent boundary layer up to $Re_\theta = 8300$."
 - R. Pozuelo, Q. Li, P. Schlatter, and R. Vinuesa, "An adverse-pressure-gradient turbulent boundary layer with nearly constant beta similar or equal to 1.4 up to Re_θ similar or equal to 8700,"
 - G. Haller, "Lagrangian Coherent Structures,"