Computational Fluid Dynamics
Comsol Tutorial: 2D cylinder flow
Lecture 3

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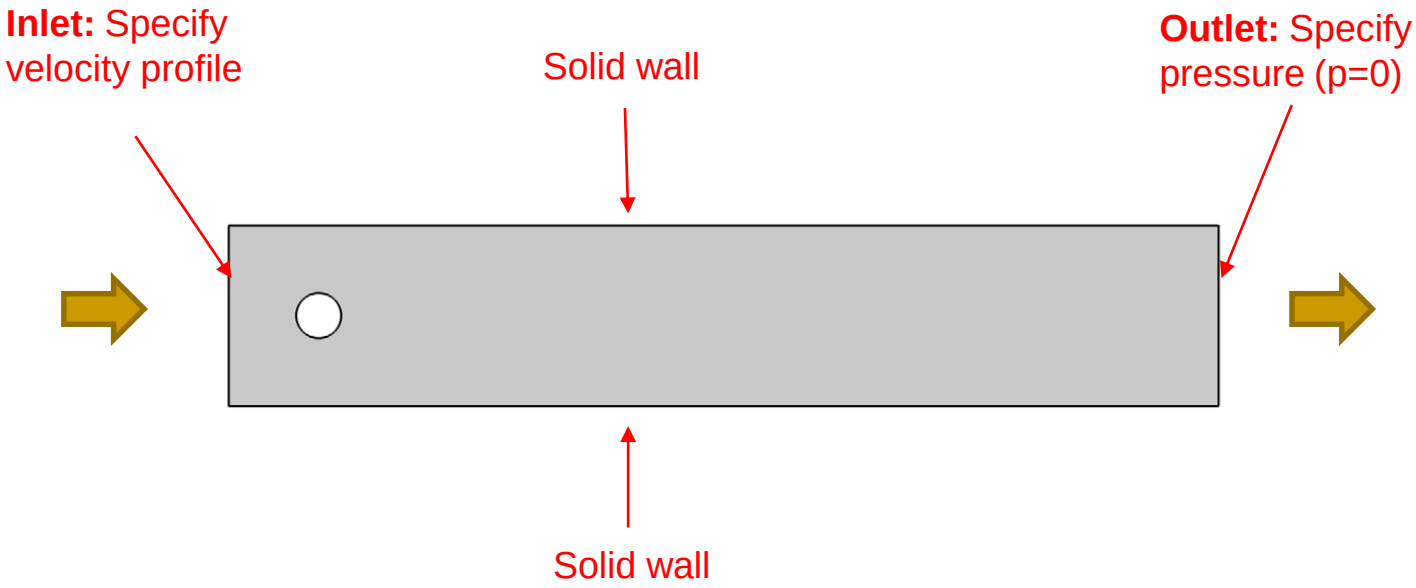
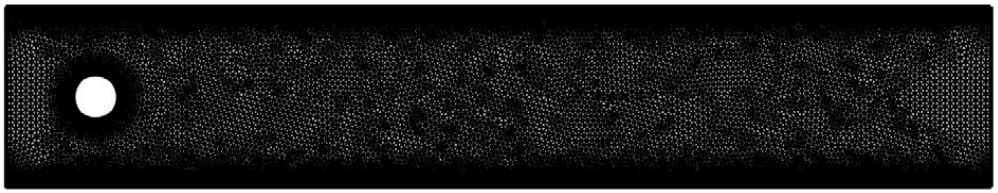
Comsol Tutorial: 2D cylinder flow

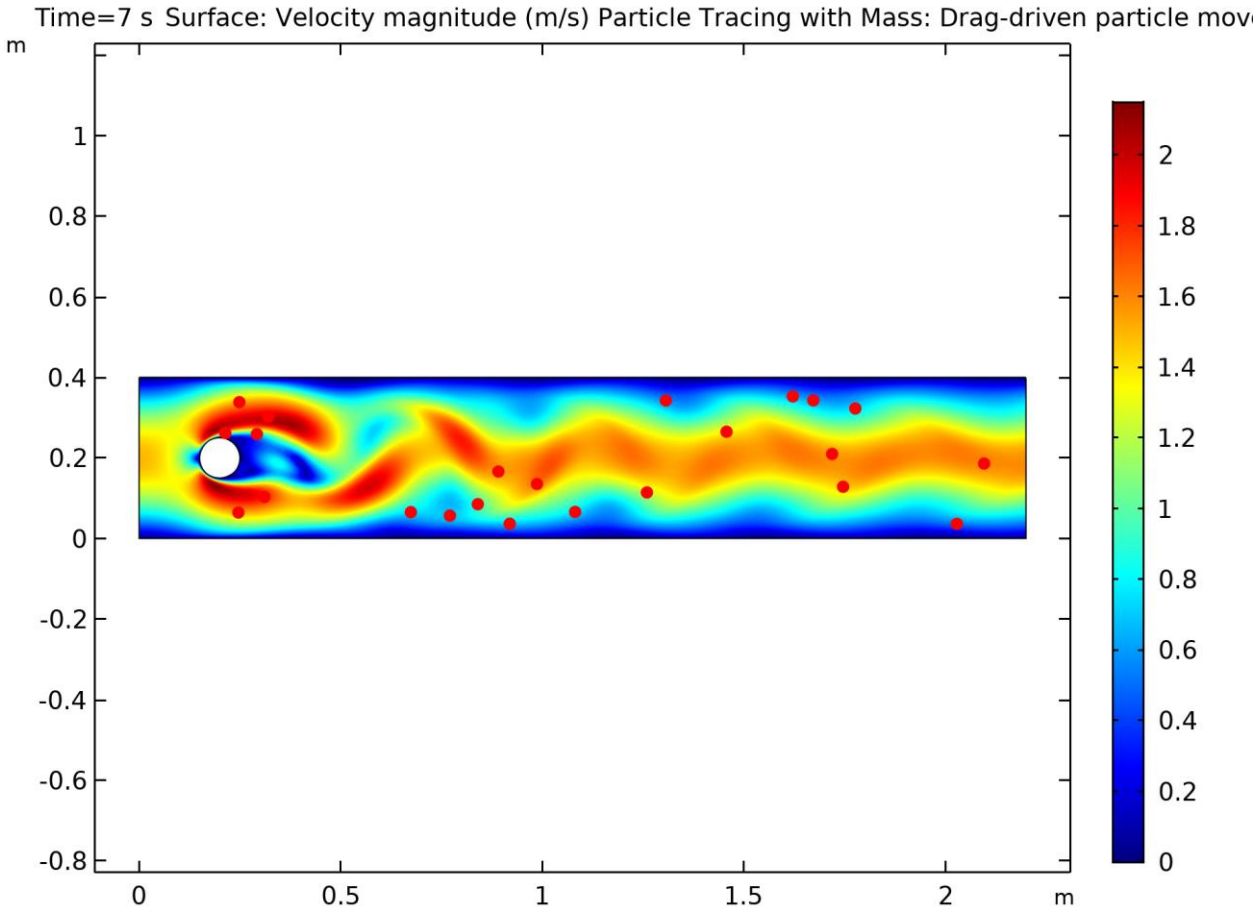
Learning outcome the mandatory lab

- Get experience to Comsol by following a step by step manual
- Learn how to set up and run flow simulations
- Learn how to generate mesh
- Learn how to plot results


Inlet: Specify velocity profile
Solid wall
Outlet: Specify pressure (p=0)
Solid wall

Mesh




Time=7 s Surface: Velocity magnitude (m/s) Particle Tracing with Mass: Drag-driven particle mov
m
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
0.5
1
1.5
2
m
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0

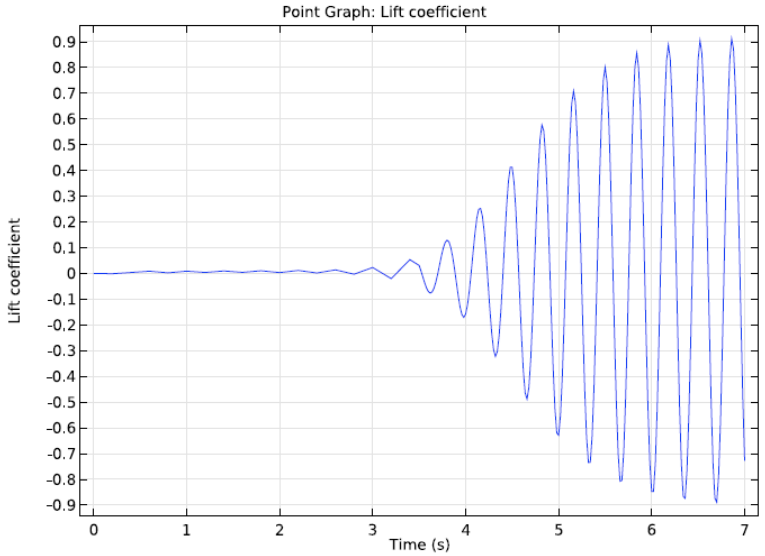


Figure 2: Lift coefficient, C_L, as a function of time.

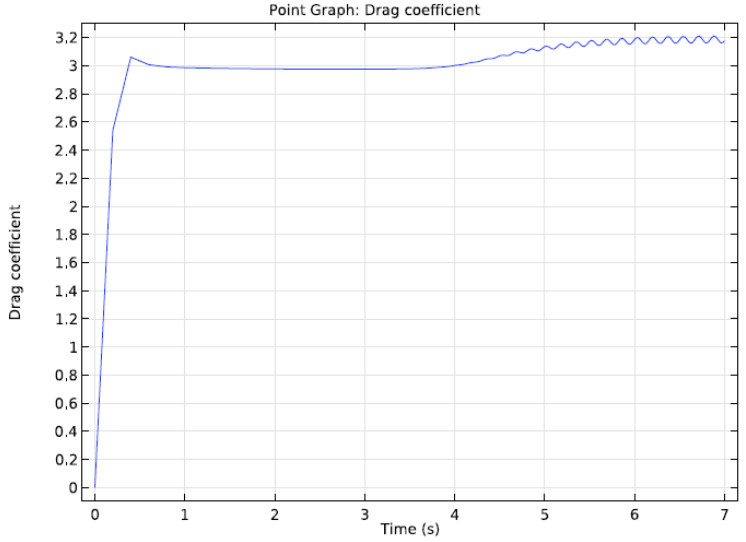


Figure 3: Drag coefficient, C_D, as a function of time.

End of lecture