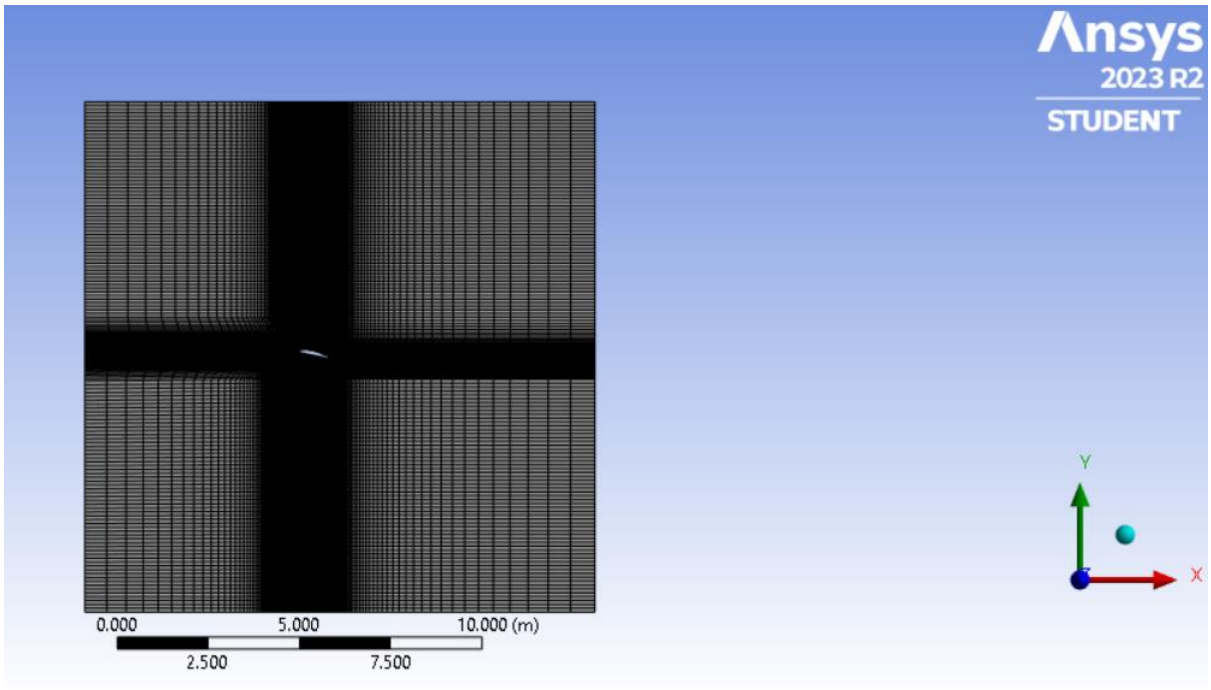
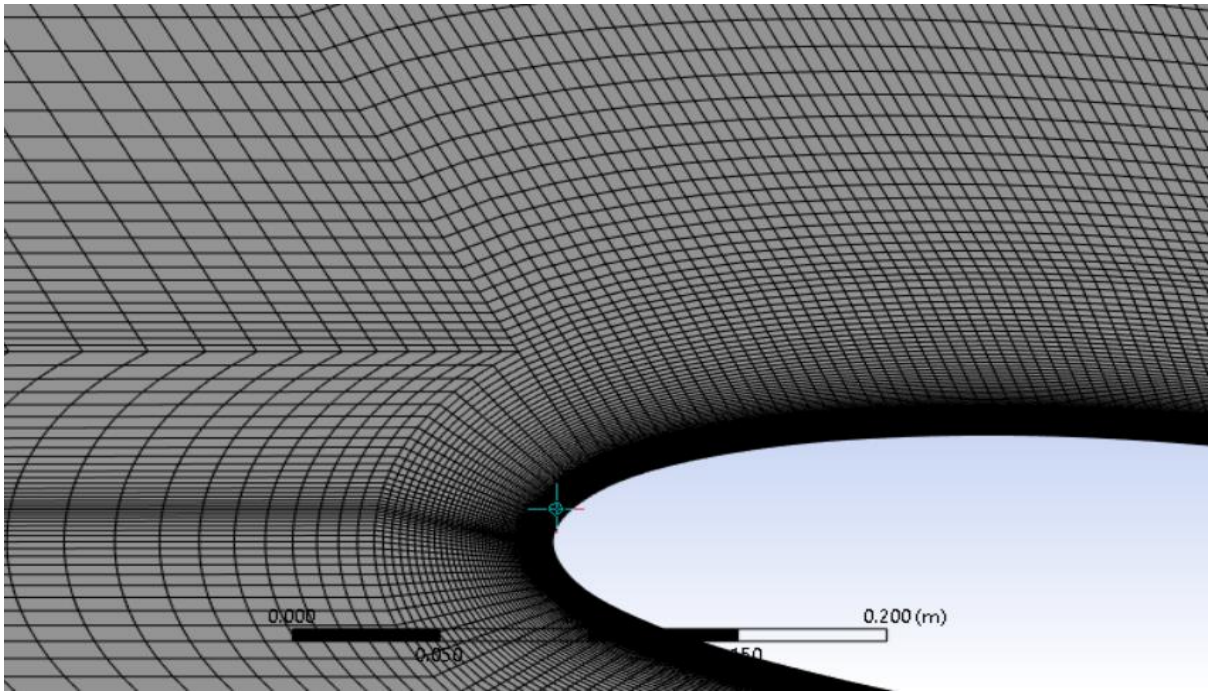
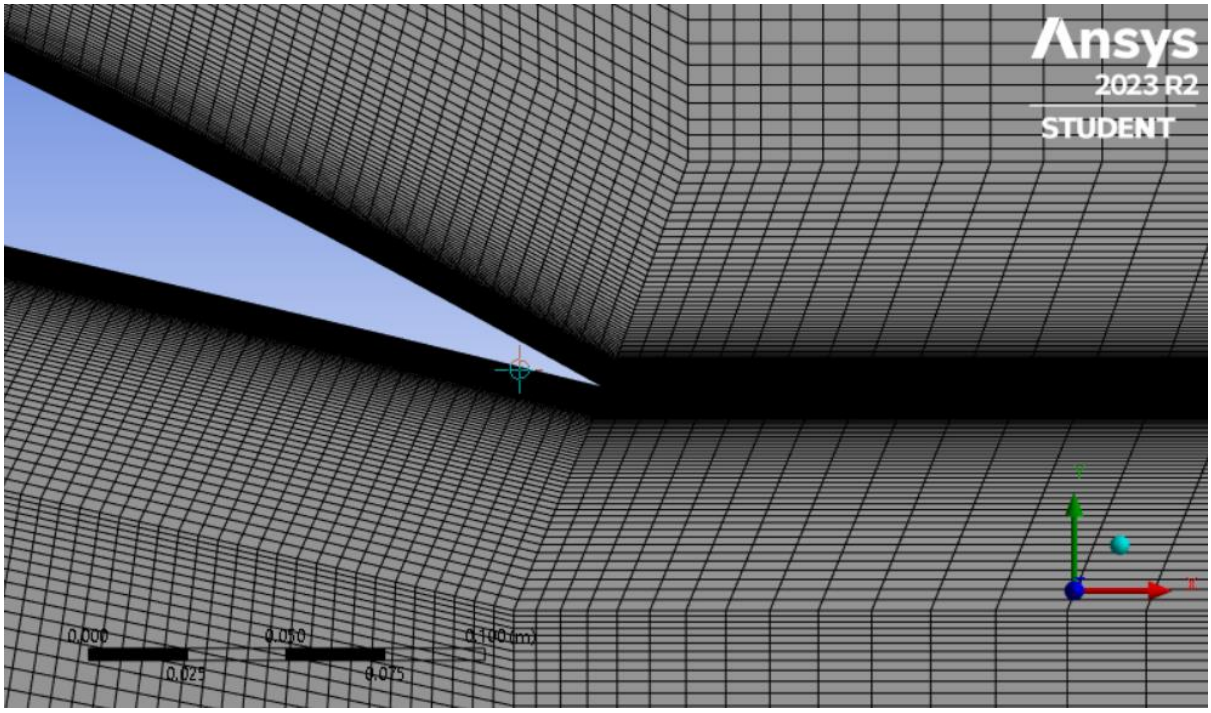
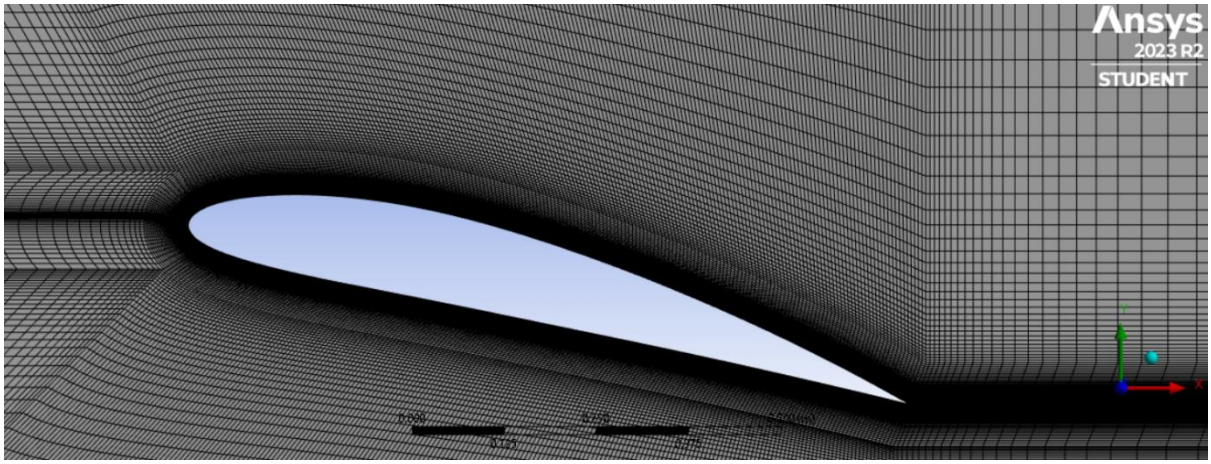
Mesh Modelling:



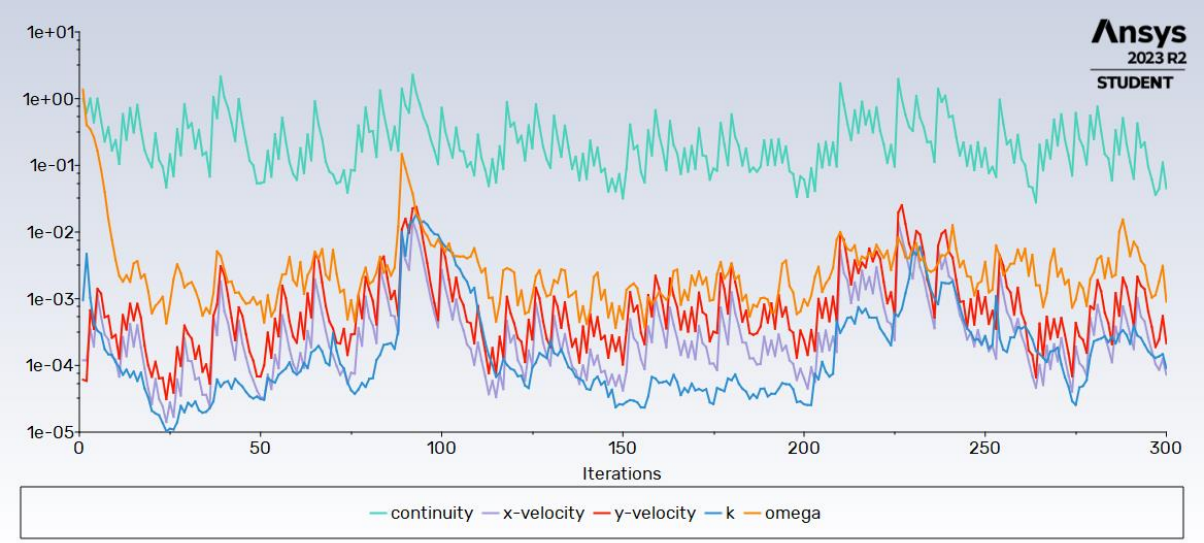



Ansys
2023 R2
STUDENT
0.000
0.050
0.100 (m)
0.025
0.075

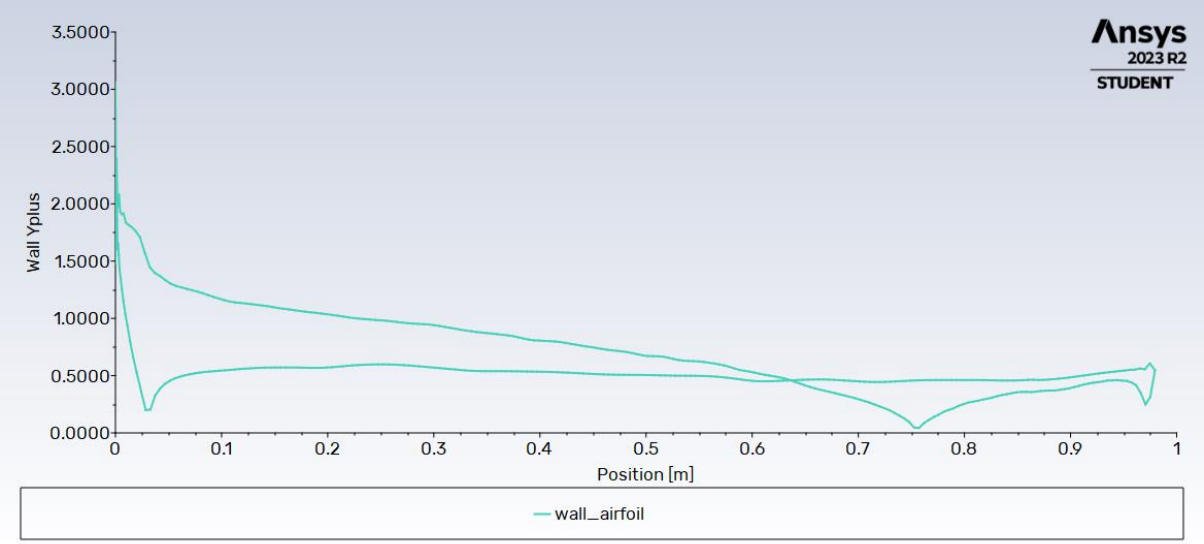

Ansys
2023 R2
STUDENT

K-Omega Modelling:

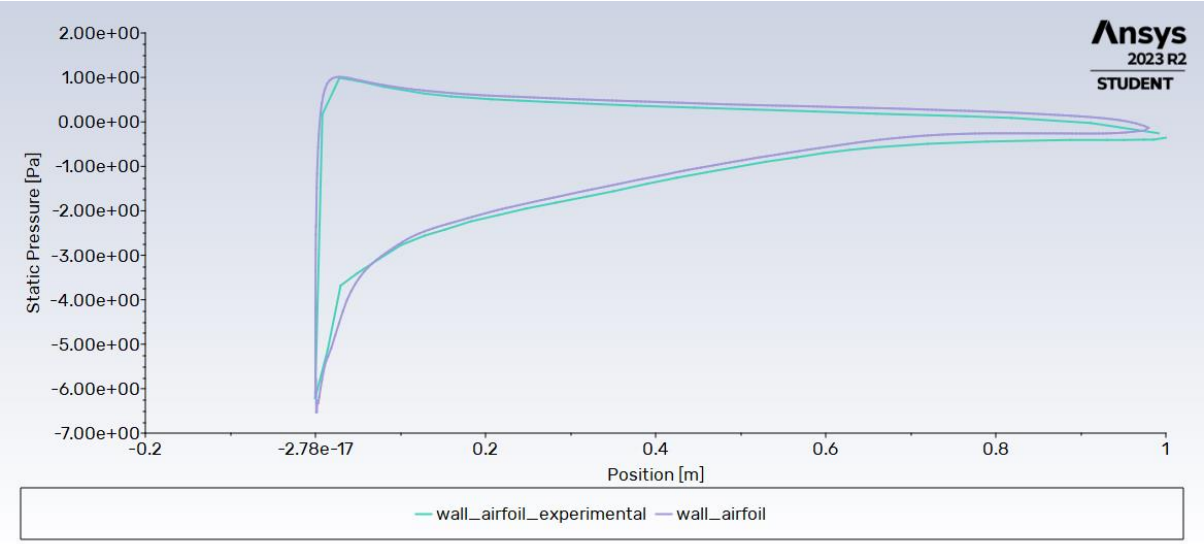
Convergence:



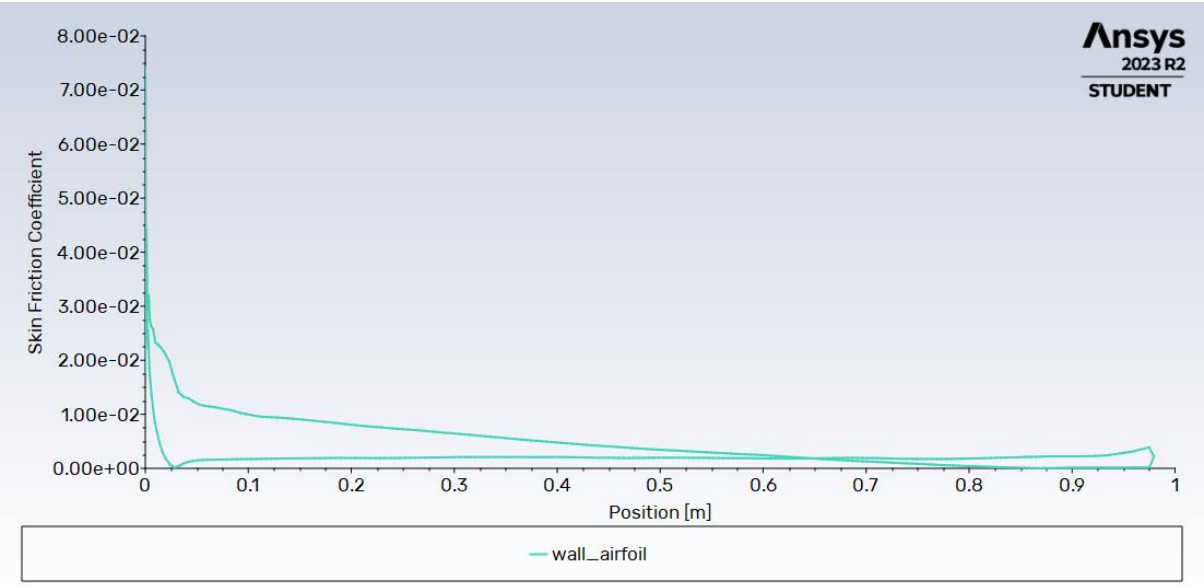
Y-plus:



Comparing Cp with experimental data:



Wall shear forces:

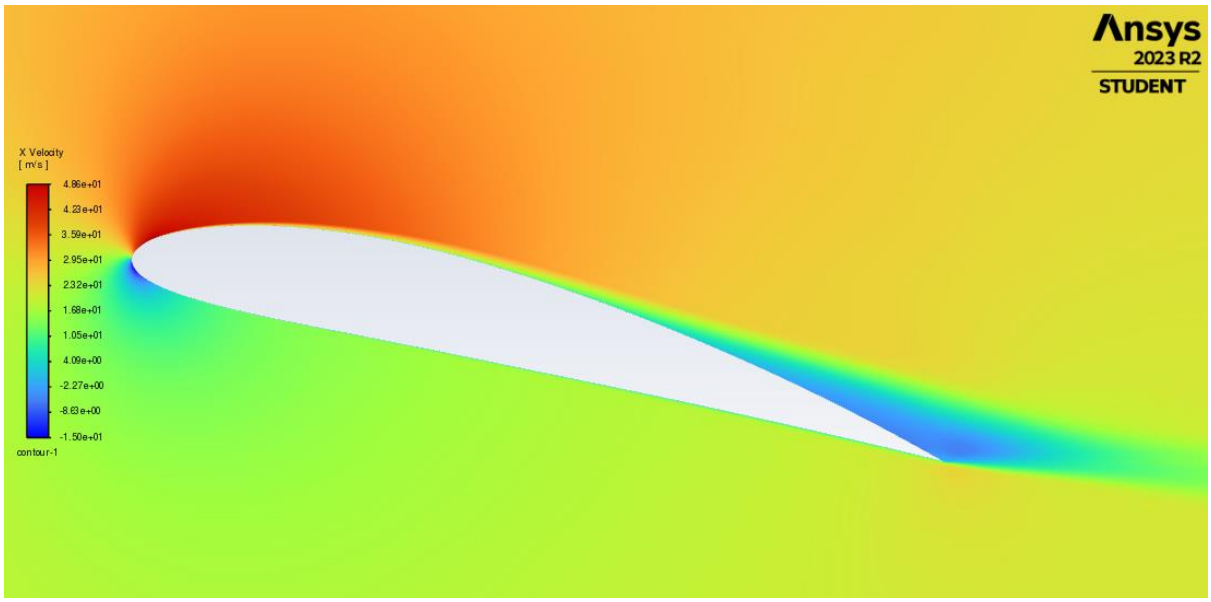


The point at which the shear force is zero is referred as separation point, from the above graph we can see that it occurring at 0.84 of chord. Experimental shows that it is occurring at 0.72 of chord.

Cl and Cd value comparison:

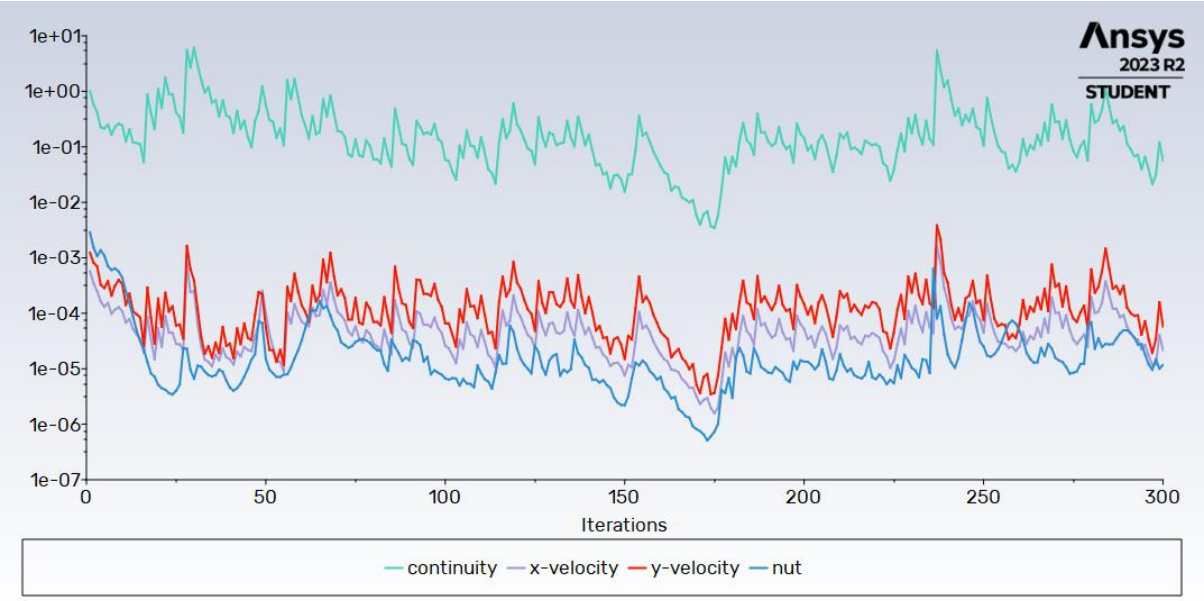
	Experimental	simulated
Cl	1.65	1.664
Cd	0.03	0.045

Velocity Contour:

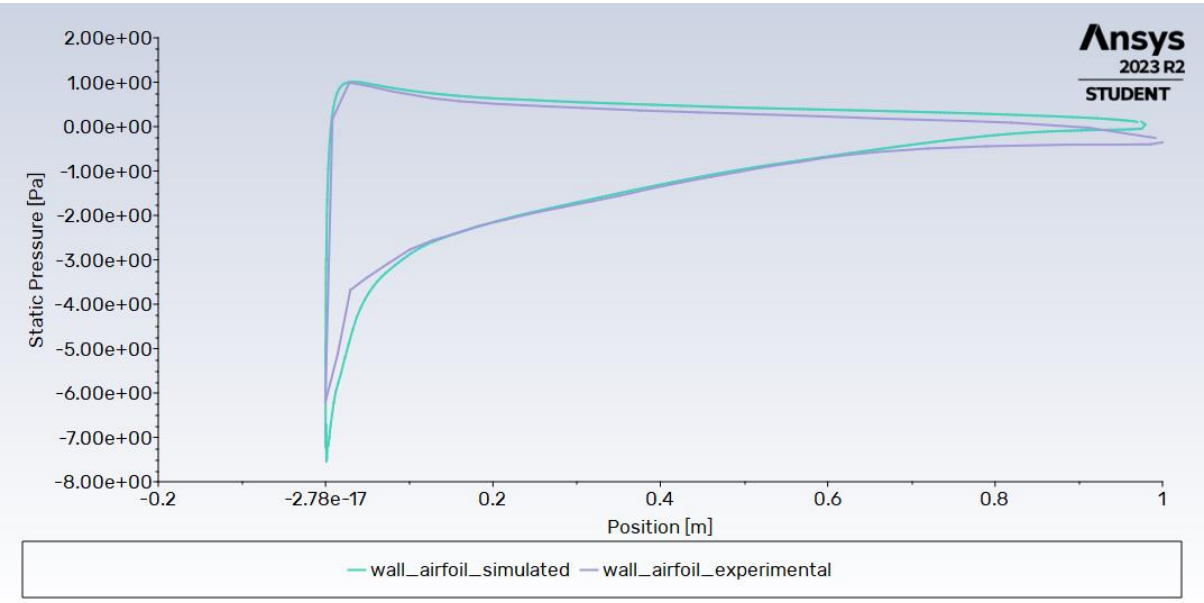


Spalart allarmas model:

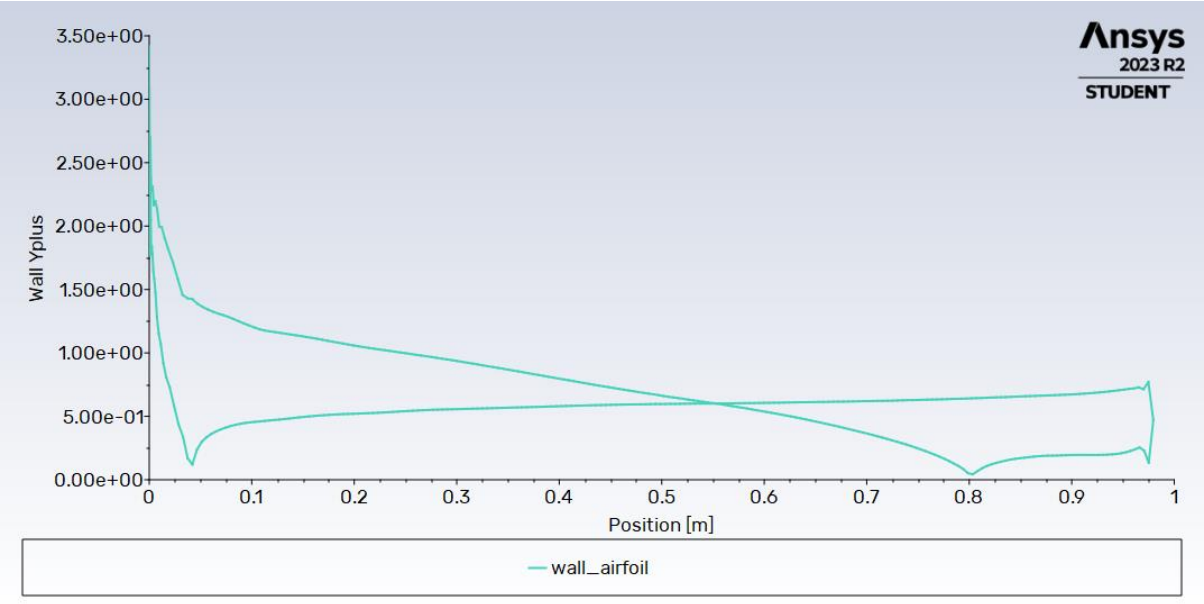
Convergence:



Cp variation:



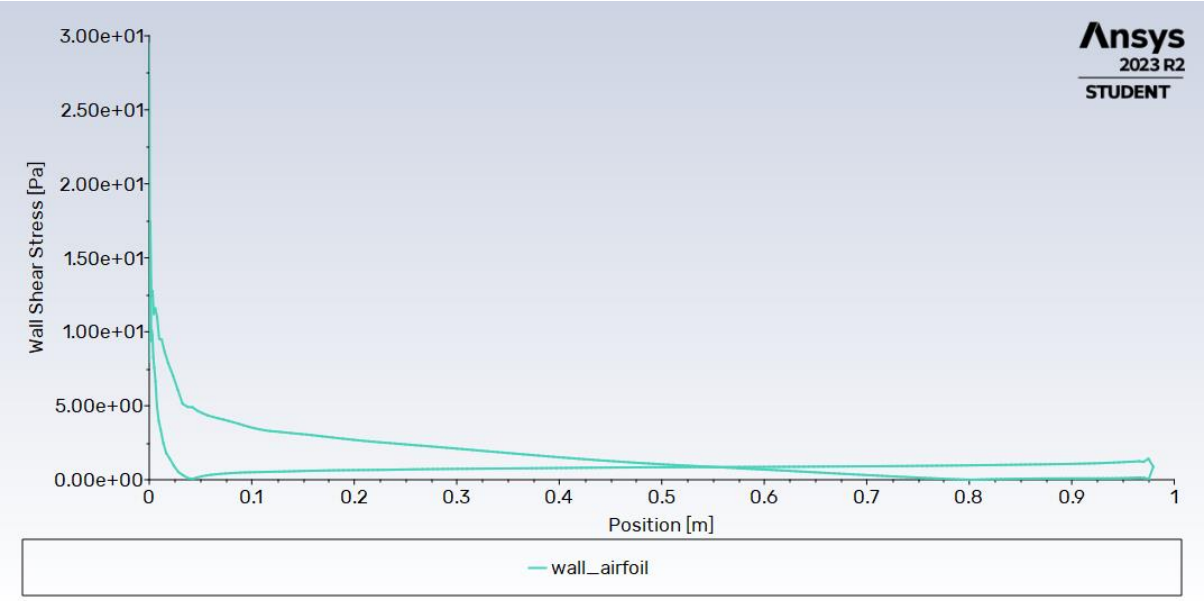
Y-plus:



Cl and Cd value comparison:

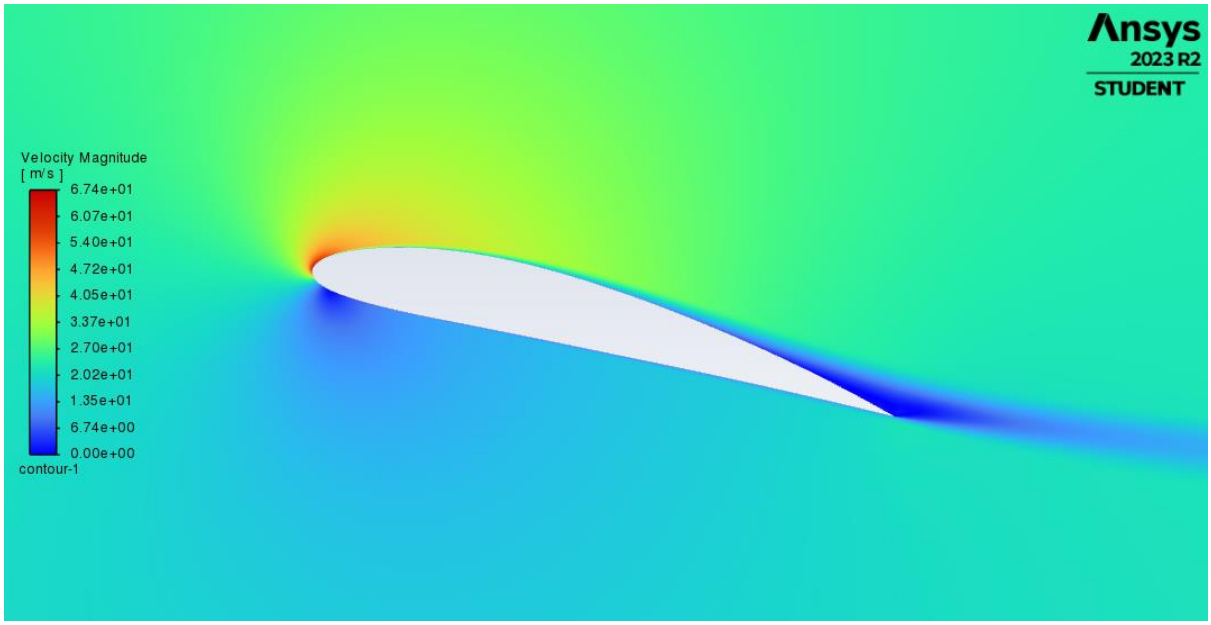
	Experimental	simulated
Cl	1.65	1.7572
Cd	0.03	0.039

Wall shear stress:



The point at which the shear force is zero is referred as separation point, from the above graph we can see that it occurring at 0.81 of chord. Experimental shows that it is occurring at 0.72 of chord.

Contour:


Ansys
2023 R2
STUDENT
Velocity Magnitude
[m/s]
6.74e+01
6.07e+01
5.40e+01
4.72e+01
4.05e+01
3.37e+01
2.70e+01
2.02e+01
1.35e+01
6.74e+00
0.00e+00
contour-1