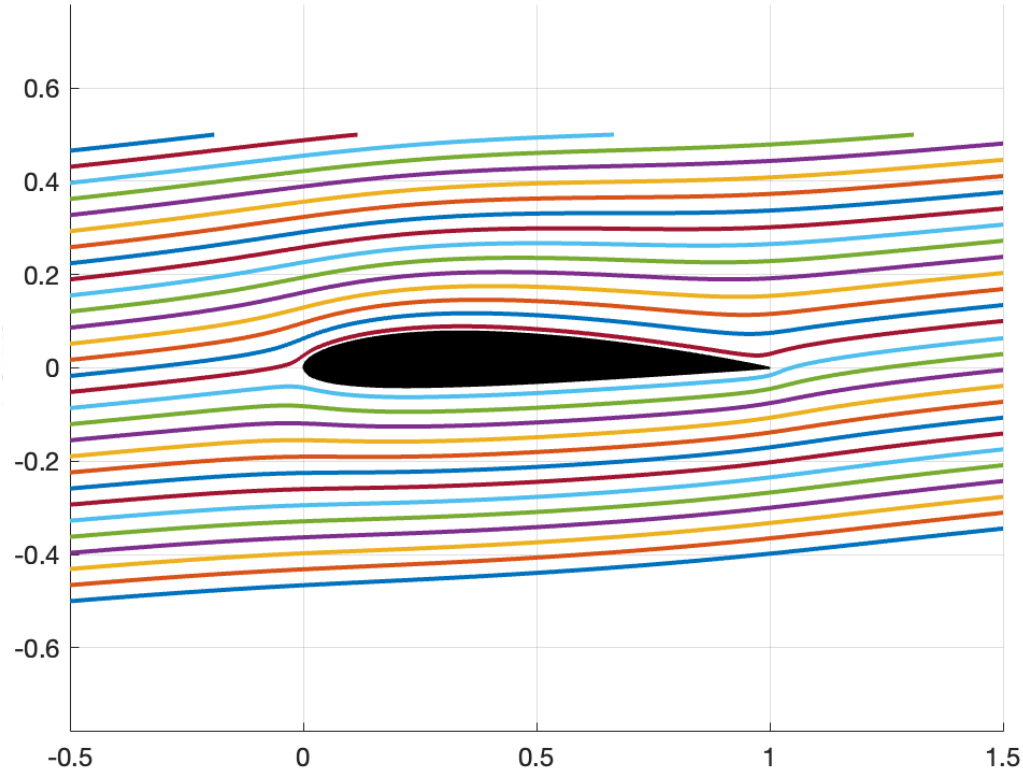
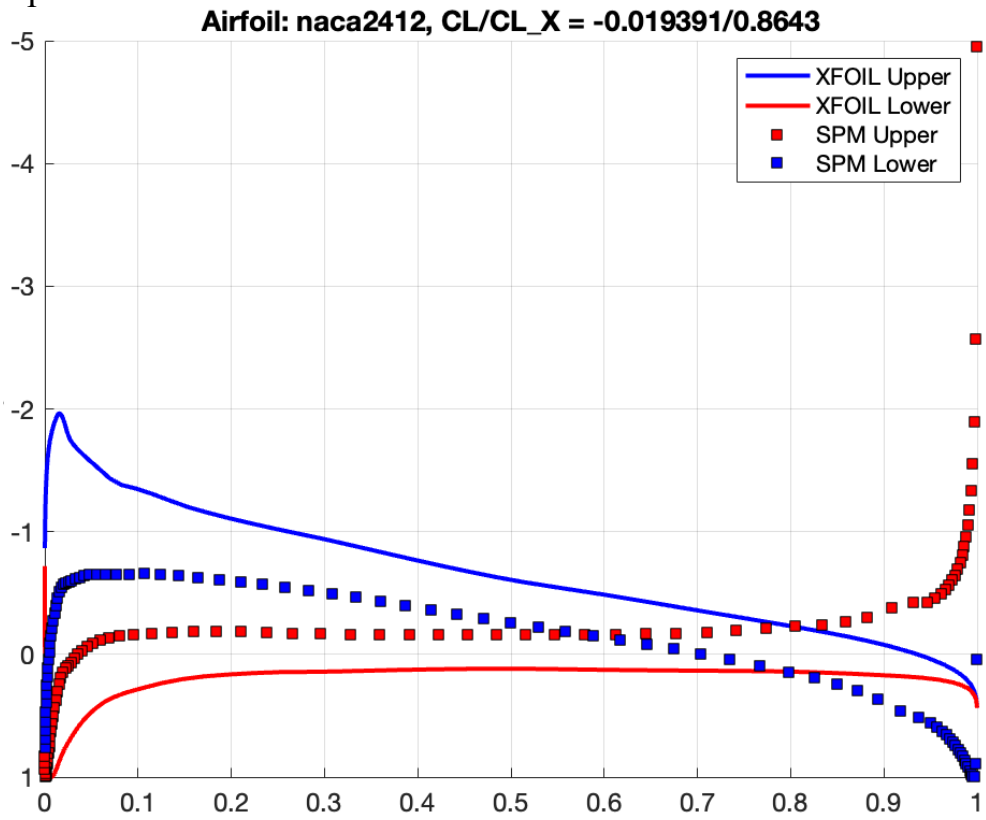
NACA 2412 AIRFOIL
Plots of Streamlines and Cp vs x, used to analyse the 3 panel methods:

1. SPM
   A. Streamlines

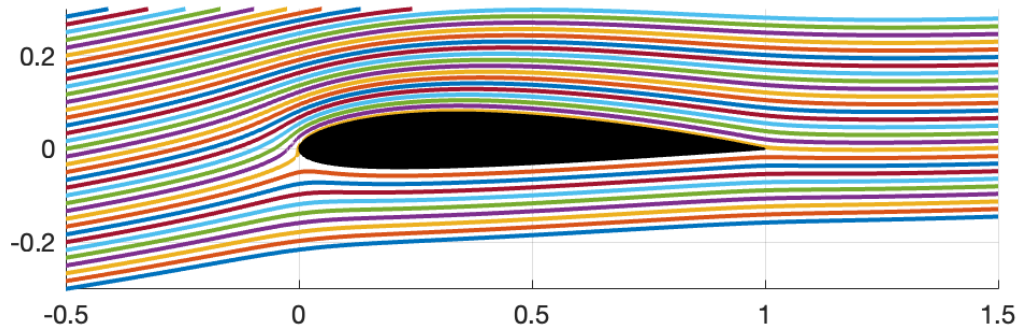


   B. Cp vs x

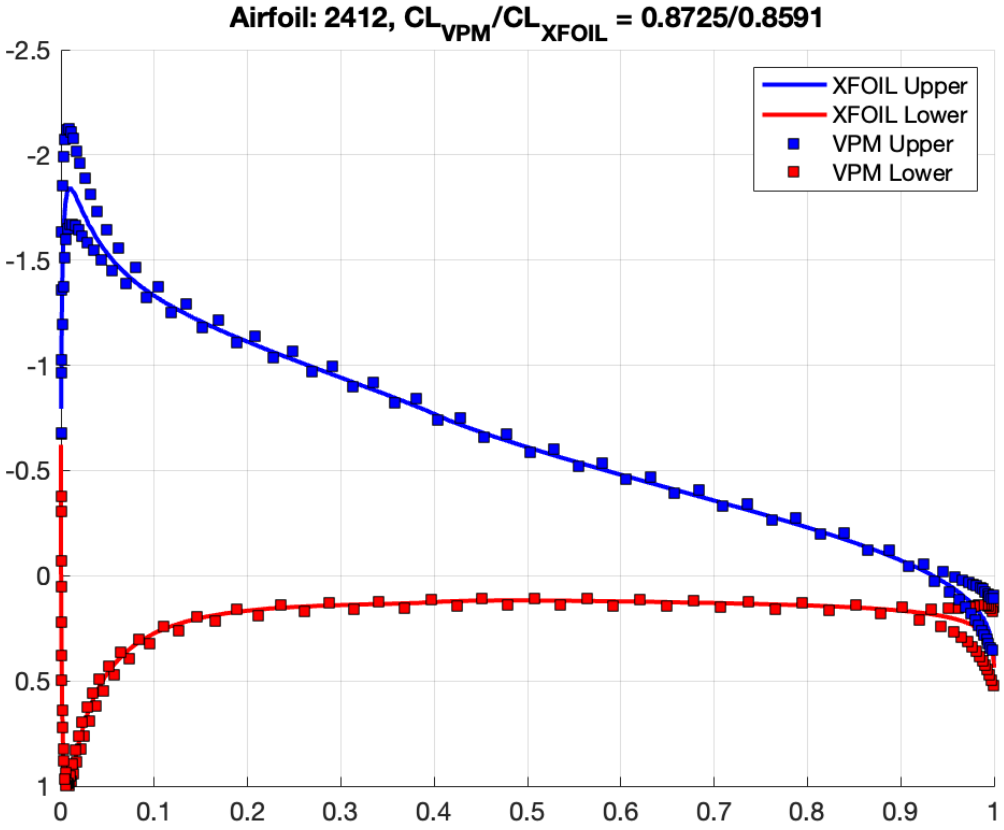


Conclusions : we see that there is a lot of deviation when we compare the cp graph to the theoretical values obtained from xfoil. The solution at the trailing edge is completely off. This is because the kutta condition has not been satisfied for the airfoil. Since it is an unsymmetric airfoil, that impacted the solution and we get inaccuracies, especially at the trailing edge.

2. VPM
   A. Streamlines



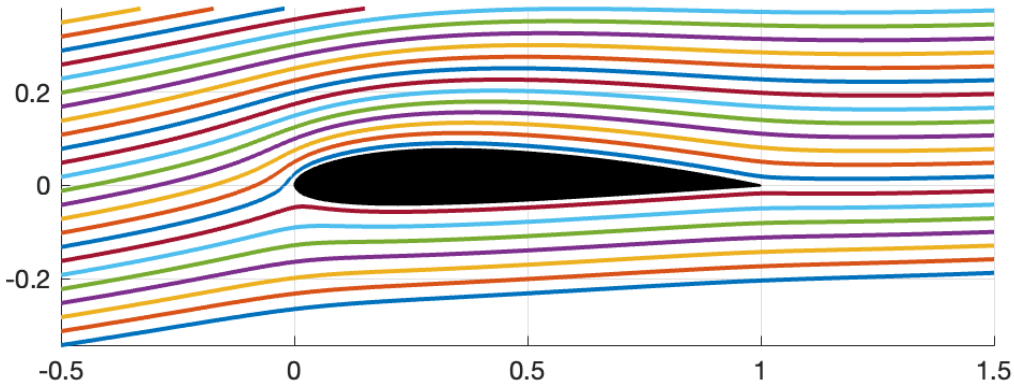
   B. Cp vs x



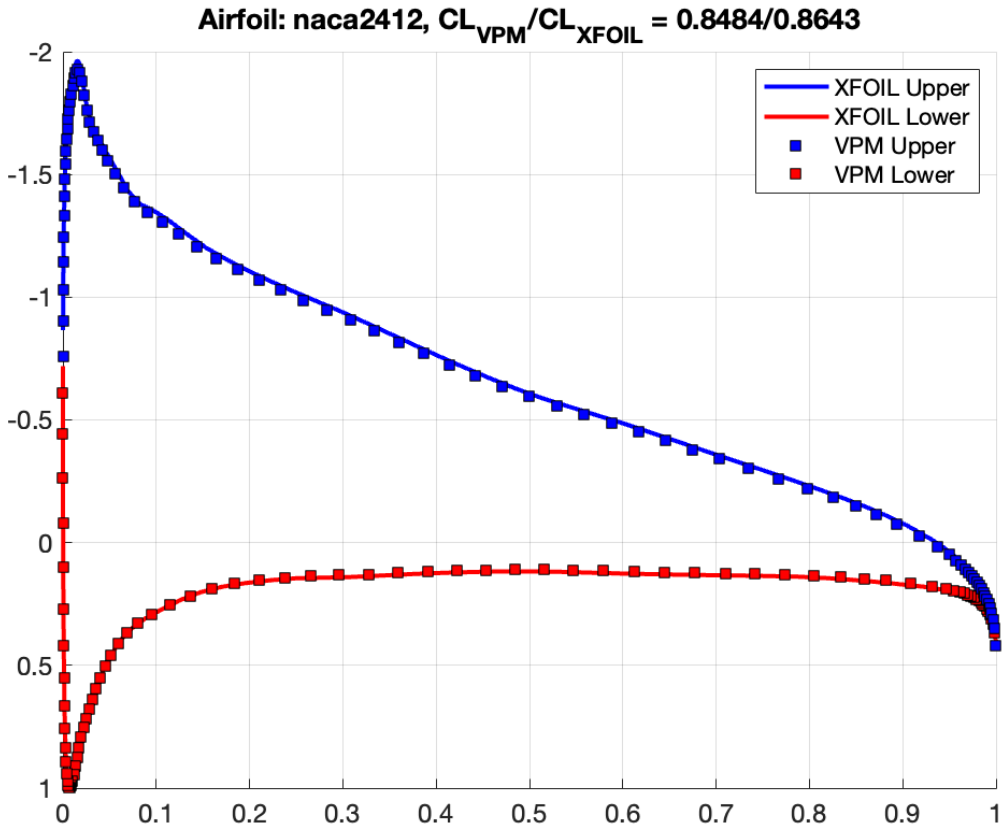
Conclusions: Here, we have incorporated the Kutta condition, and we see that the cp graph matches the xfoil values much better. The

solution still has some deviations, which have been dealt with in the next method.

3. SPVP
   A. Streamlines



   B. Cp vs x



Conclusions : The plot fully matches the theoretical values obtained from xfoil in SPVP method. The kutta condition has also been incorporated.