

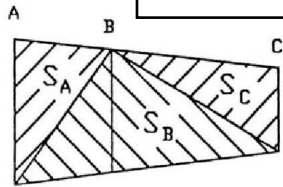
# Test Class

- LSAerodynamicsManager.CalcCLvsAlphaCurve theCLArrayCalculator = theLSAnalysis.new CalcCLvsAlphaCurve();
- cLWingArray = theCLArrayCalculator.nasaBlackwellCompleteCurve(alphaMin, alphaMax, nValueAlpha);
- cLSAerodynamicsManager.CalcCLAtAlpha theCLWingCalculator = theLSAnalysis.new CalcCLAtAlpha();
- cLIsolatedWing = theCLWingCalculator.nasaBlackwellAlphaBody(alphaBody);
- theLSAnalysis.PlotCLvsAlphaCurve(subfolderPath);

# CalcCLvsAlphaCurve

# nasaBlackwellCompleteCurve

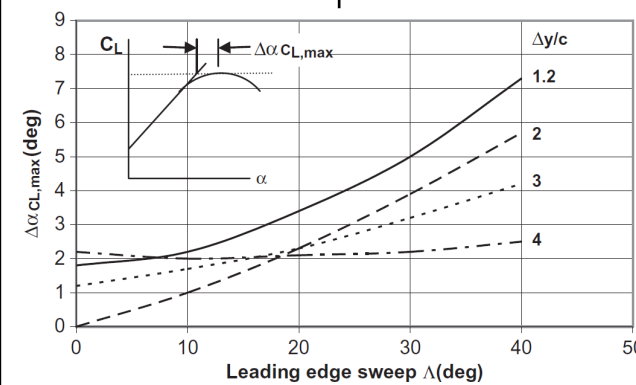
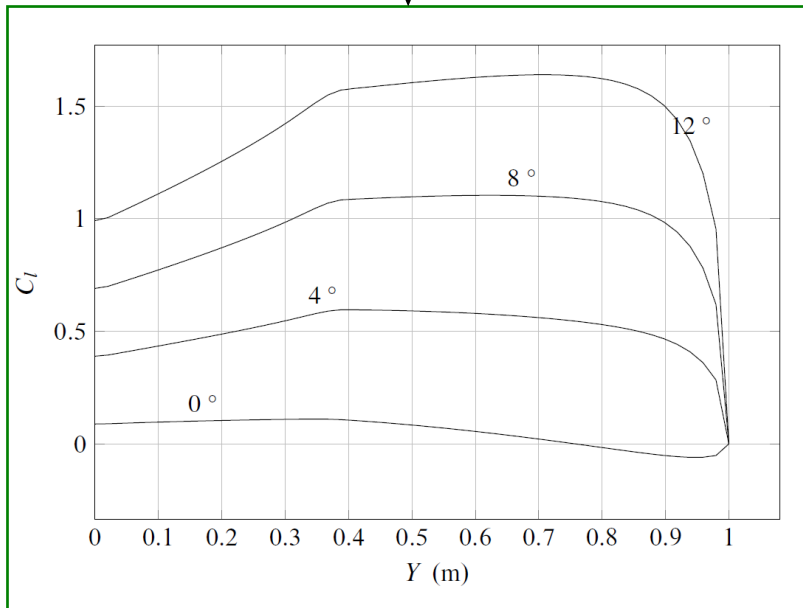
This method manage the calculation of cl at an array of alpha



Mean Airfoil

Nasa Blackwell method

# NasaBlackwell



# LSAerodynamicManager

# CalcCLAtAlpha

# nasaBlackwellCompleteCurve

This method calculate CL at alpha given as input. It uses values of field filled before. So in order to evaluate the lift coefficient with this class it's necessary to call other method before.

# LiftCalc

# calculateCLvsAlphaArrayNasaBlackwell

This method calculates CL at alpha given as input. This method calculates both linear trait and non linear trait. It use the NasaBlackwell method in order to evaluate the slope of the linear trait and it builds the non-linear trait using a cubic interpolation.

# CalcCLMaxClean

This nested class uses NASA-Blackwell method in order to estimate the lifting surface CLmax through the stall path.

$\alpha_{max}$

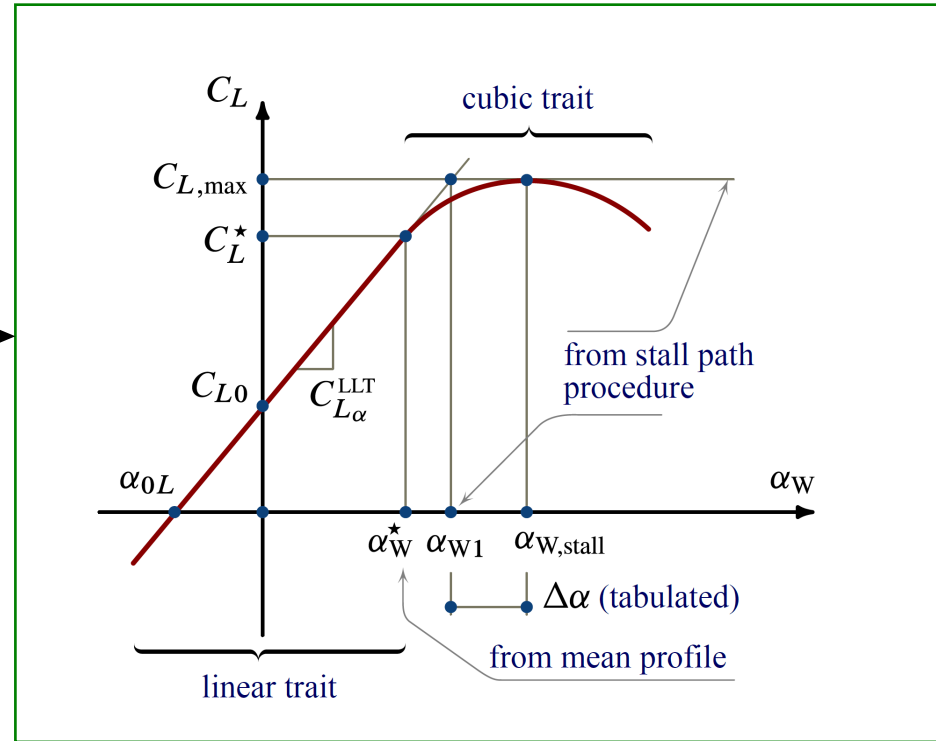
CL\_max

# plot

This method draws the CL vs alpha plot

# Output

CL at alpha



plot