**Airfoil Design with SolidWorks**

* **choose and find an airfoil design file**

Get it from the web :

<http://airfoiltools.com/> has a nice database

* choose yours
* download the dat file
* change the file type from ".dat" to ".txt"; for exemple : "fg2.dat" 🡪 "fg2.txt"
* edit (text editor) the file to remove the comments and add a 3rd column of 0 for the z axis;
* **Using our profile with solidworks**
* open SolidWorks and create a new part
* use the curve by x,y,z points from the curve sub-menu of the insert menu



* use the curve by x,y,z points from the curve sub-menu of the insert menu
* use the .txt file you just made

You should now have an airfoil curve in the x,y plane



* Sketch drawing:
* enter the sketch drawing mode on the front plane
* select the curve and use the convert entity button 

*For an easy work it's best to create an extruded surface  from middle planewith this sketch*



* Now you can move/rotate/resize your surface body to match what you want

*Ex:*



* I moved the surface to have the middle chord on the origin
* I scale the surface to 15 mm (as usually the .dat file give a 1 unit chord airfoil)
* I rotate the airfoil to 15°

*I usually use the body delete on all used surface so later my CFD soft will not use them*

* create the solid, 2 methods :
1. using surfaces
* close the surface with planes  both sides
* sew the faces and try to make a solid 
1. using solids
* enter the sketch drawing mode on the front plane
* select the surface and use the intersection button 
* extrude to get your solid with  or  if you serch for non rectilign and/or twisted airfoil

**Et voila!**

