

Results and Discussions

- The dimensions of the plane as well as the dynamics of the plane were calculated using the software XFLR5 in an iterative method.

Fig.1 (a) C_L vs α
(b) C_D vs α
(c) C_L/C_D vs α of NACA 4415 for Wing

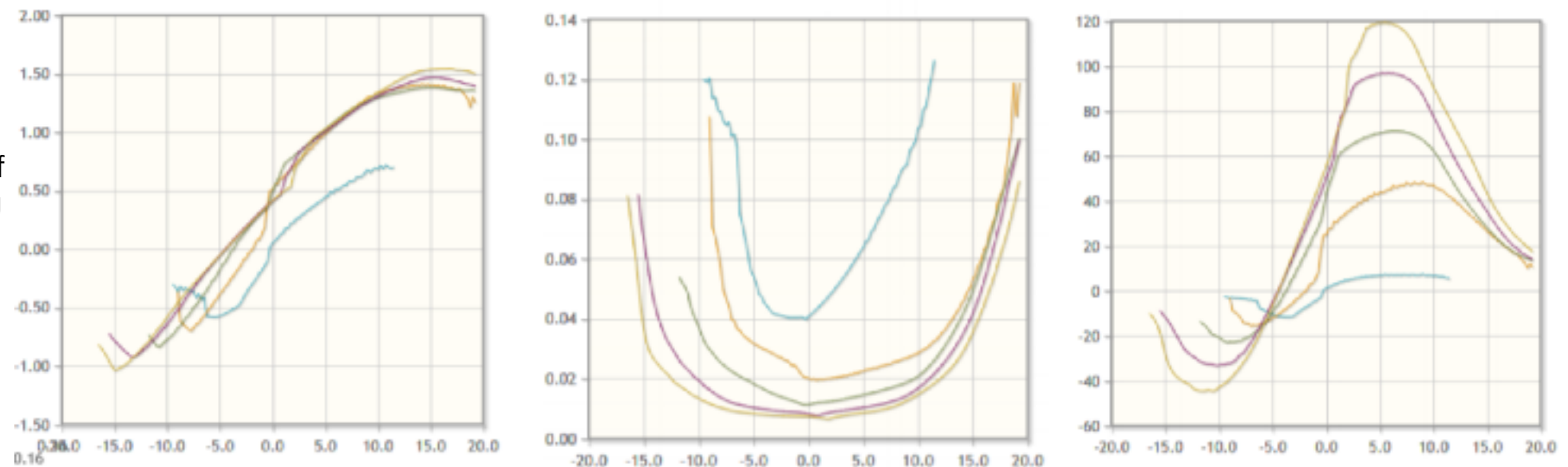
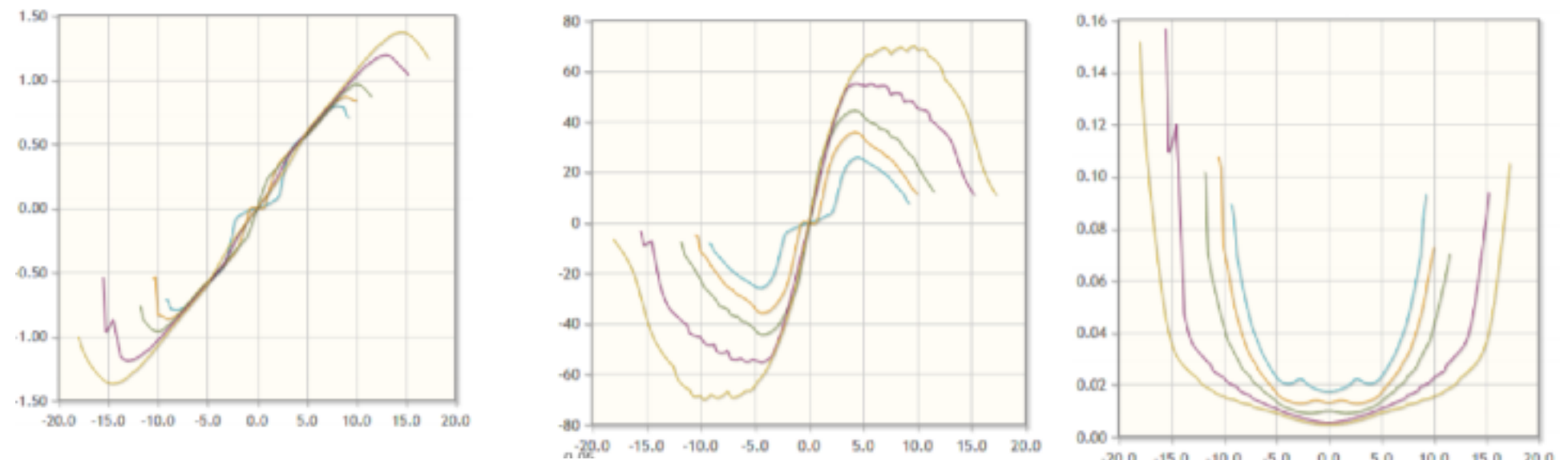


Fig.2 (a) C_L vs α
(b) C_D vs α
(c) C_L/C_D vs α of NACA 0010 for Tail



- For stability analysis 3 constraints were iterated and finally the dimensions that gives a Static margin of 12% was selected for a stable flight.
- Final Plane Dimensions were as follows:

PLANE									
span	chord	Area	Cl	Alpha	Lift(Kg)	A.R	Xcg	Xnp	SM
151	19	2869	0.7616	5	4.424687	7.947368	7.8	10.1	0.121053
HORIZONTAL TAIL									
Sh	Ch	A	Leading D	Lh	Vh	C/4			
50	15	750	46	42.95	0.590936	4.75			
VERTICAL TAIL									
Sv	Cv	A	Leading D	Lv	Vv				
12	15	180	35	31.95	0.013275				

