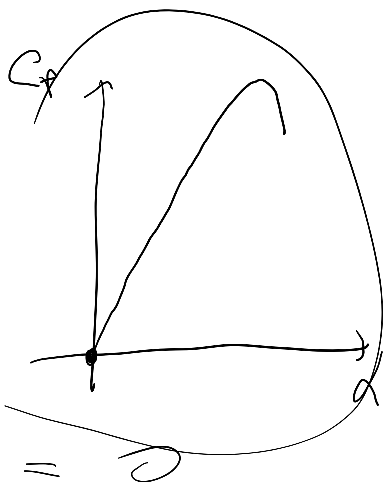
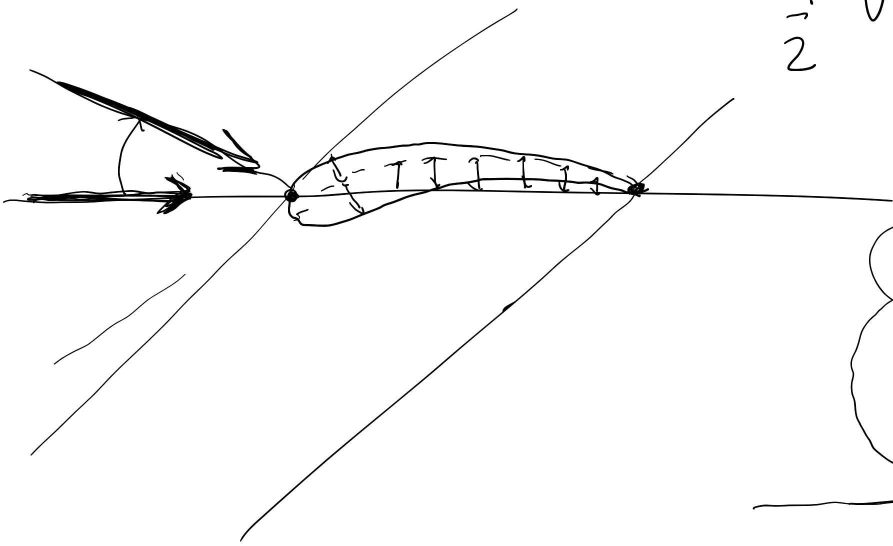
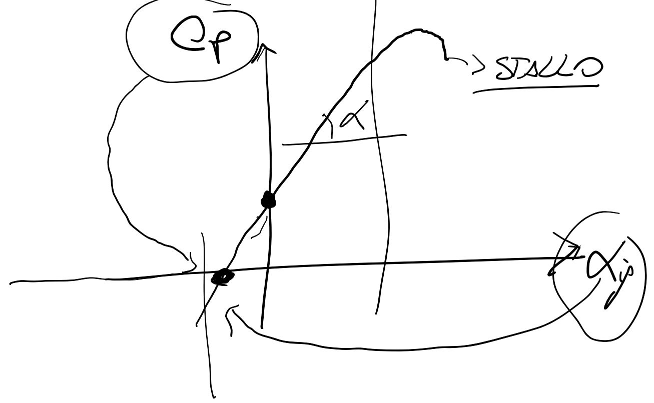
$\alpha_{ij} = 0 \Rightarrow P = 0 \Rightarrow C_p = 0$



$$C_p = \frac{P}{\frac{1}{2} V^2 S \rho} = 0$$



$P \neq 0 \Rightarrow C_p \neq 0$



$\tan\alpha =$

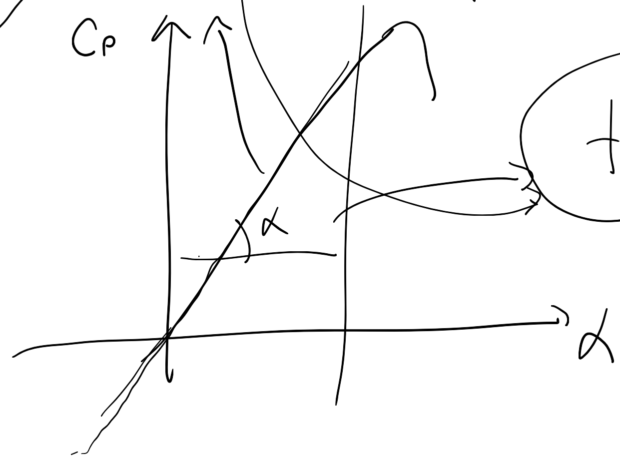
$C_p \propto \alpha$

$C_p = q\,\alpha$ ⟹ COEFFICIENTE ANGOLARE di PORTANZA

$\dfrac{dC_p}{d\alpha} =$

$C_p(\alpha)$

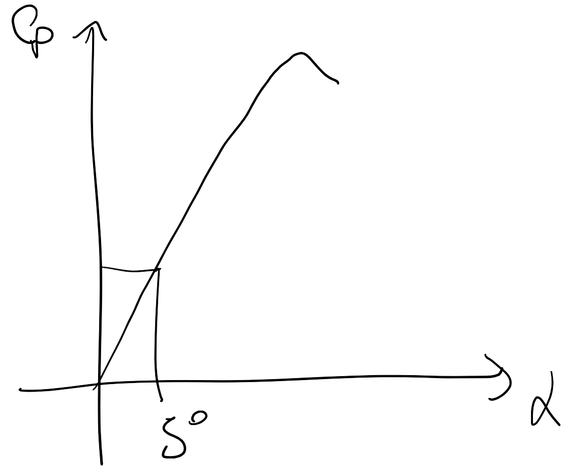
$C_p'(\alpha) = q$



$\tan\alpha = q$

$$\tan\alpha = q = 5.73$$

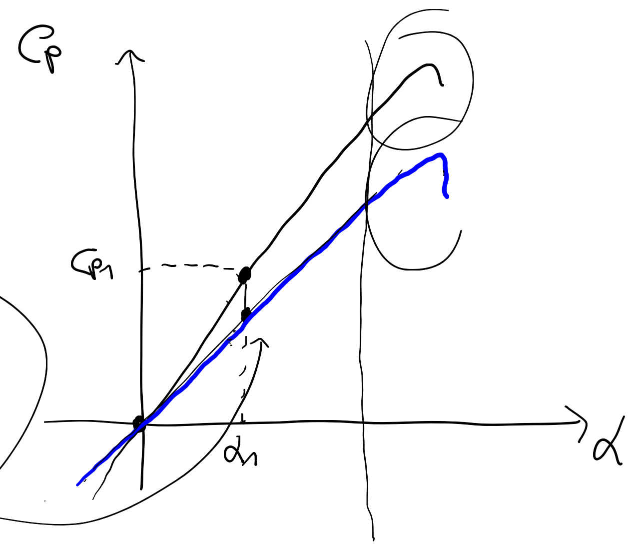
$$C_p = q\,\alpha = 5.73\,\alpha$$



$$C_p = 5.73 \cdot 5^\circ \cdot \frac{\pi}{180}$$

$$C_p = C_p'\,\alpha$$

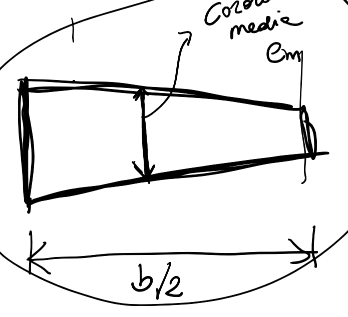
$$C_p' = \frac{5.73}{1 + \frac{5.73}{\pi \lambda}}$$



λ : RAPPORTO di ASPETTO
o ALLUNGAMENTO dell'ALA

$$\lambda = \frac{b}{c_m} = \frac{b}{c_m}\cdot\frac{b}{b} = \frac{b^2}{S}$$

SEMI ALA



λ : secondo PRANDTL vale per un profilo di forma ellittica → ha determinato analiticamente la resistenza indotta

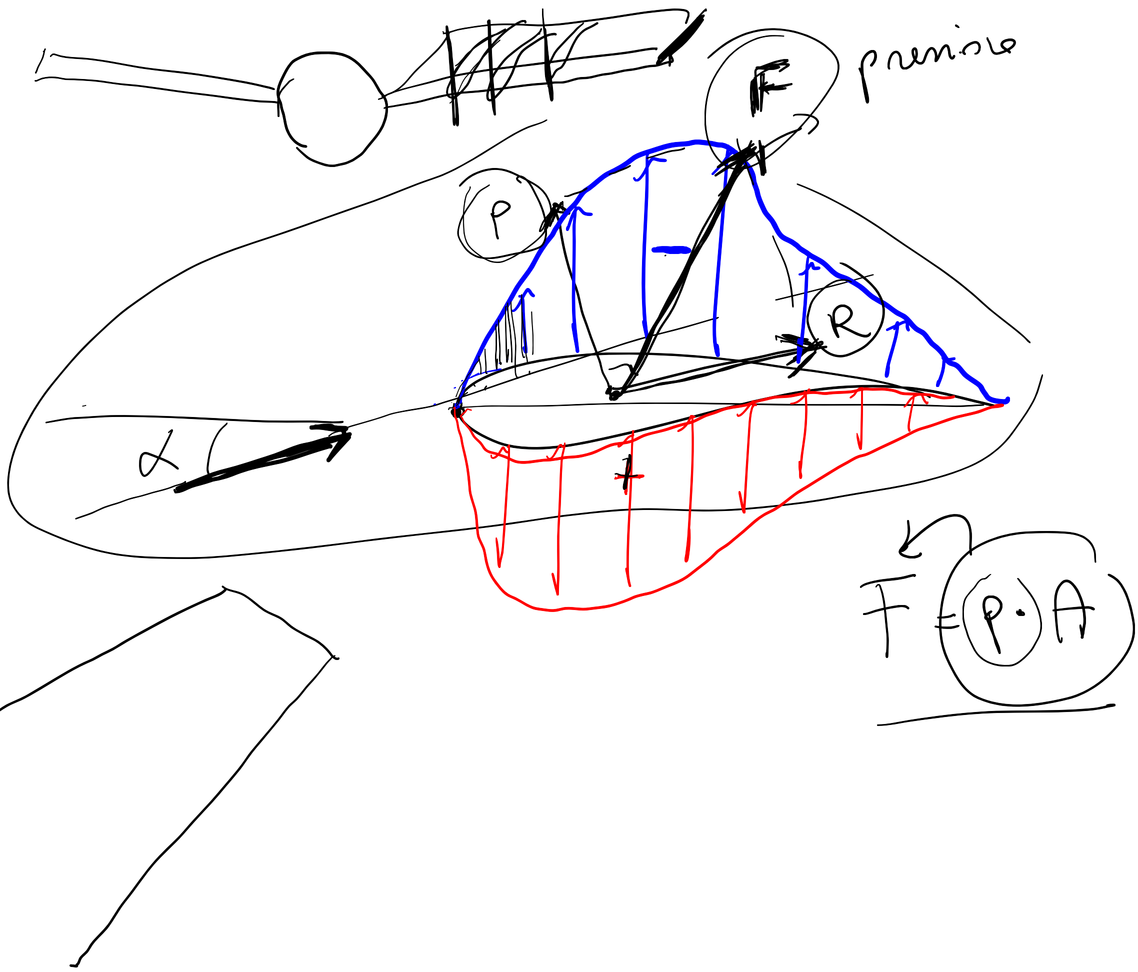
Se il profilo non è ellittico devo considerare

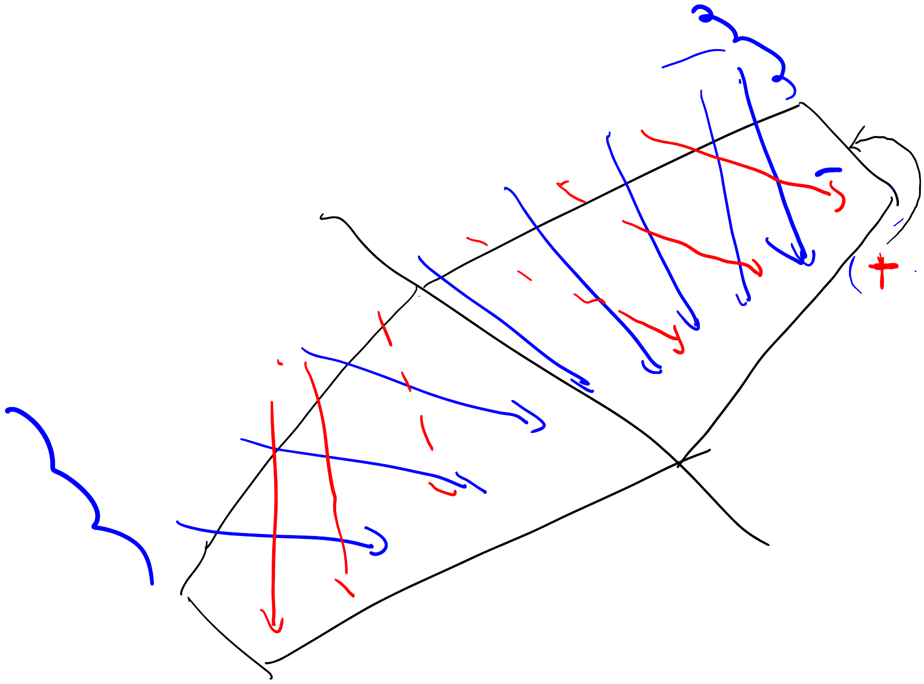
$\lambda_{eff} = \mu \cdot \lambda$

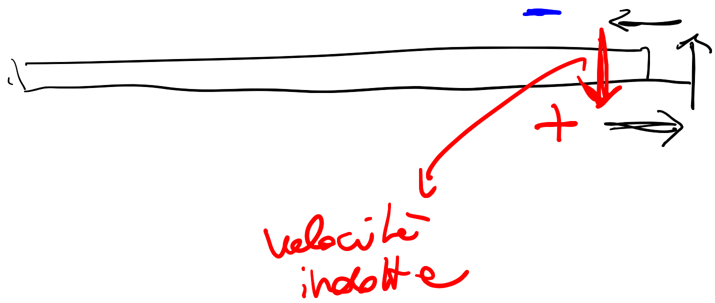
λ_{eff}: EFFETTIVO

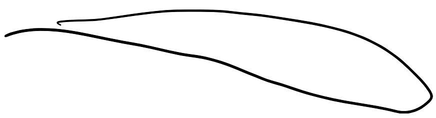
μ: COEFFICIENTE CORRETTIVO (di ANDERSON) che vale ~ 0.8 ÷ 0.9

ALA FINITA









RESISTENZA INDOTTA

RESISTENZA di SCIA

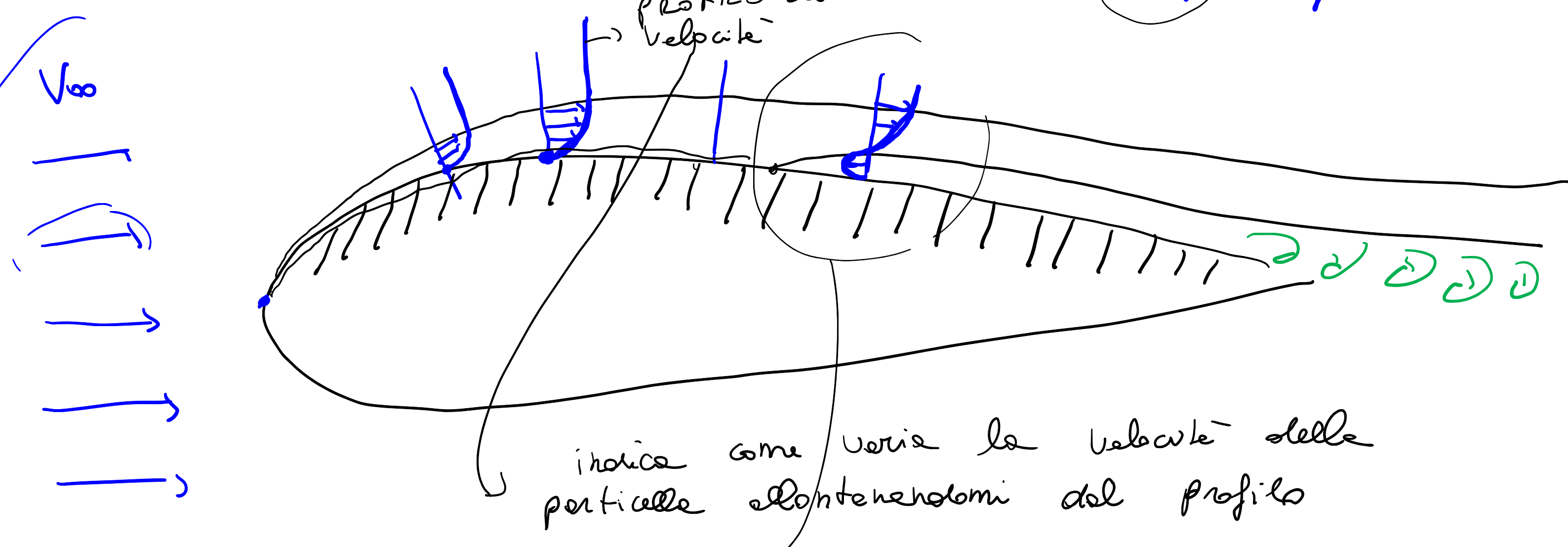
$$Re = \frac{V \cdot x}{\nu}$$

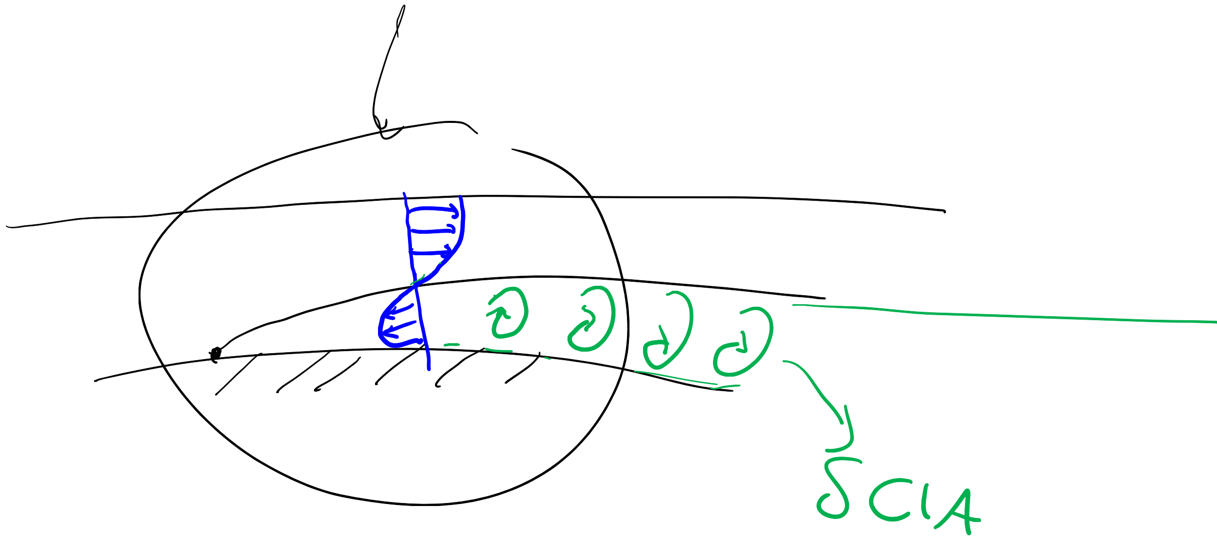
Re → NUMERO di REYNOLDS

ν : VISCOSITÀ CINEMATICA

V : velocità

x : lunghezza

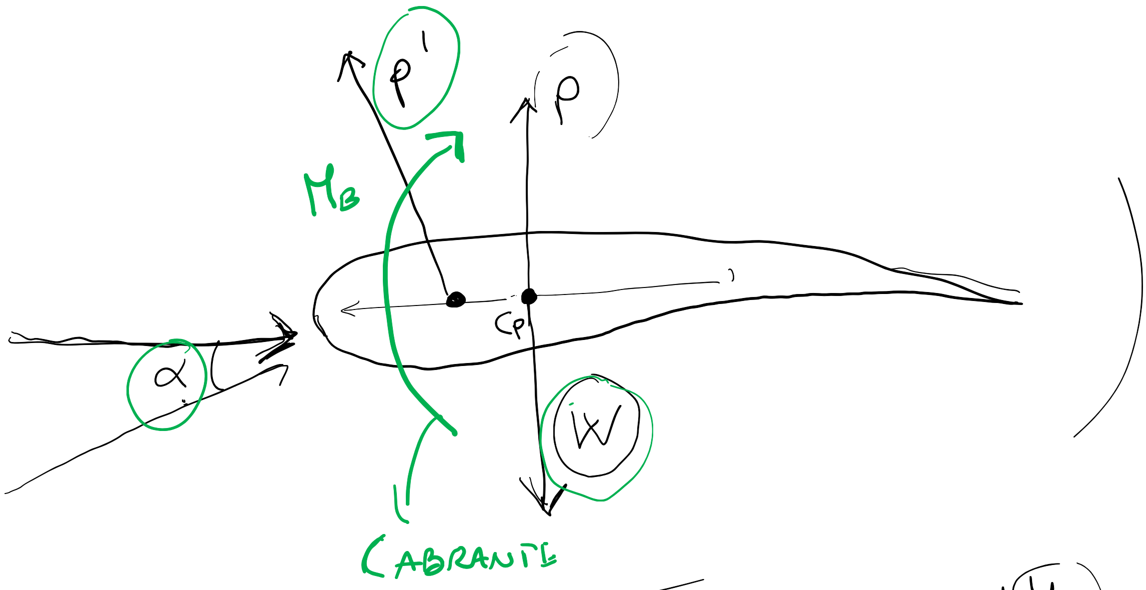




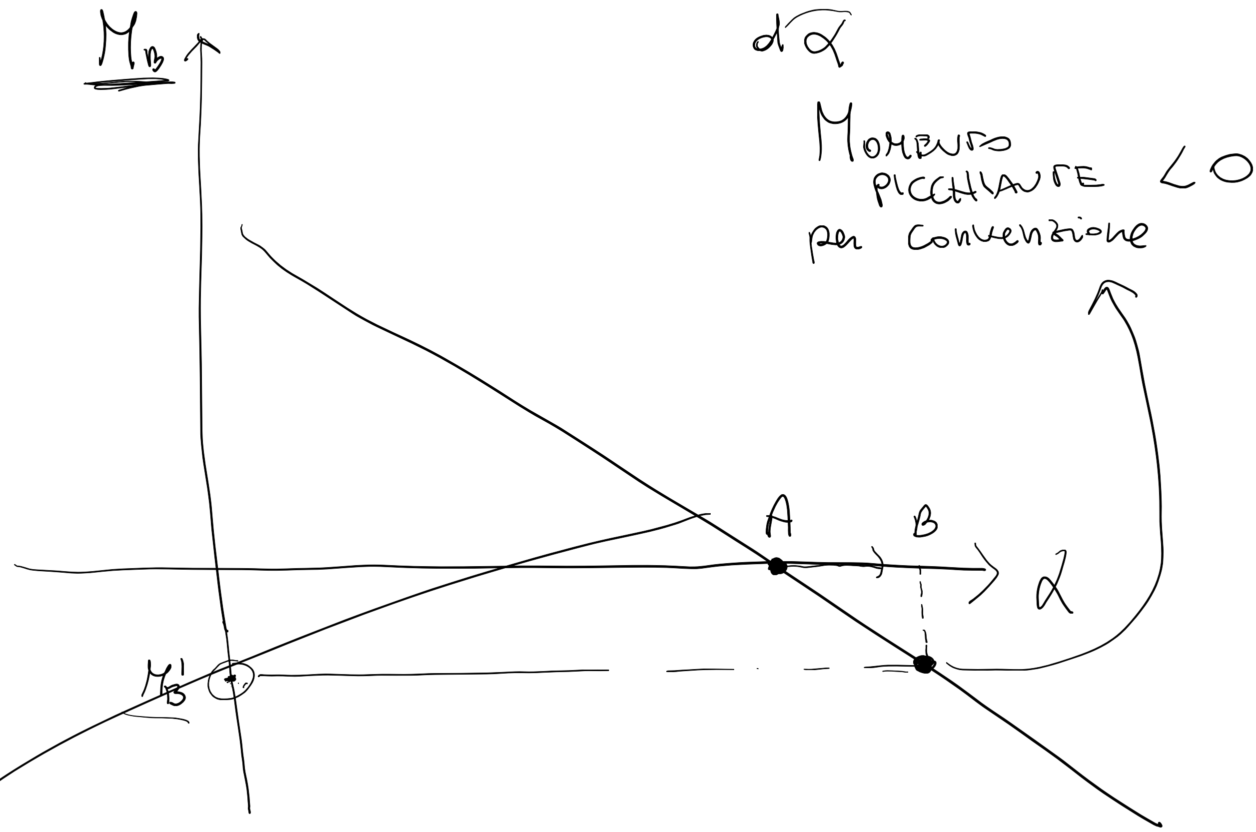
RESISTENZA di ATTRITO → Re

$f(Re)$

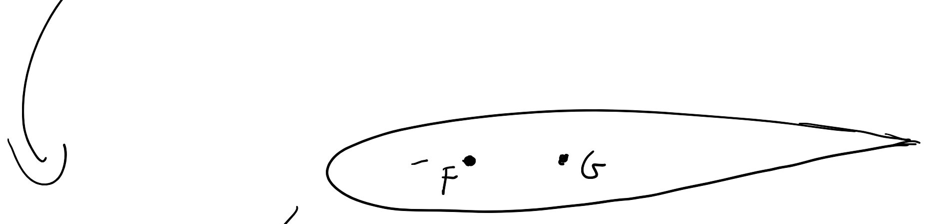
RESISTENZA $\begin{cases} \text{ATTRITO} \\ p \end{cases}$



$$\frac{dM_B}{d\alpha} < 0$$



Momento picchiante < 0 per convenzione



NON STABILE

Se G è posizionato davanti al fuoco.