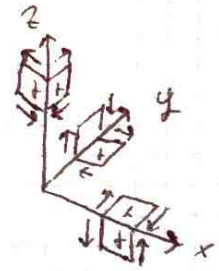
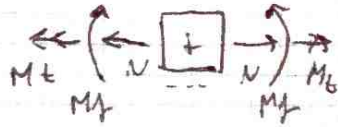
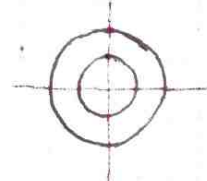


$F = G = 1000 \text{ N}$
 $a = 1000 \text{ mm}$

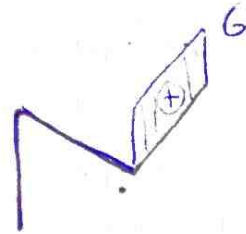
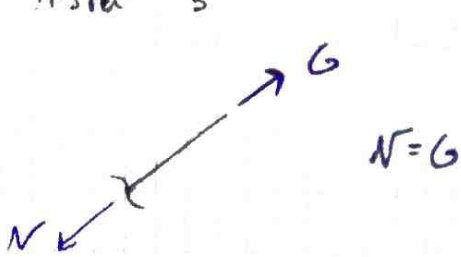


- Calcolo del punto più sollecitato della sezione trascurando taglio e M_x
- Considerare una sezione circolare cava



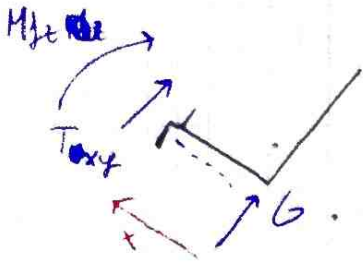
Effetto forza G

Asta 3

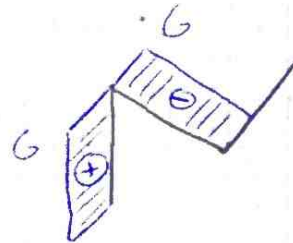


N

Asta 2

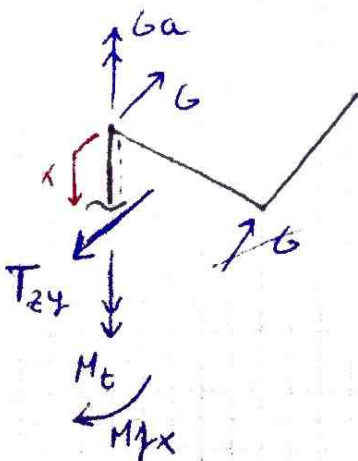


$M_{yz} = Gx$
 $T_{xz} = -G$

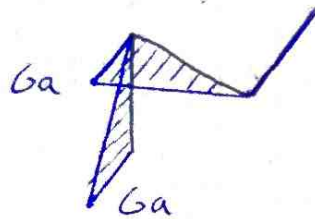


T

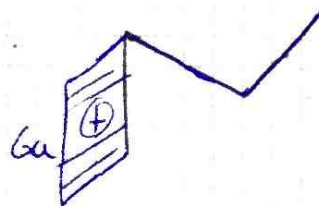
Asta 3



$M_{yz} = Ga$
 $T_{zy} = G$
 $N_x = -Gx$



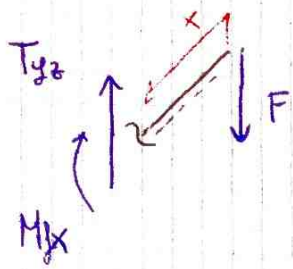
M_y



M_x

Efeito fora F

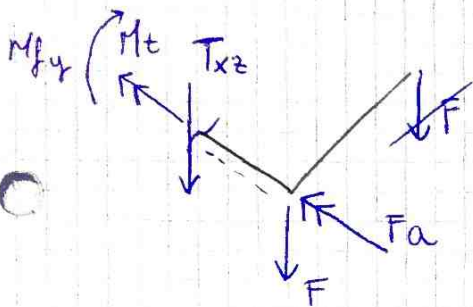
Asta 3



$$T_{yz} = F$$

$$M_{fx} = -Fx$$

Asta 2

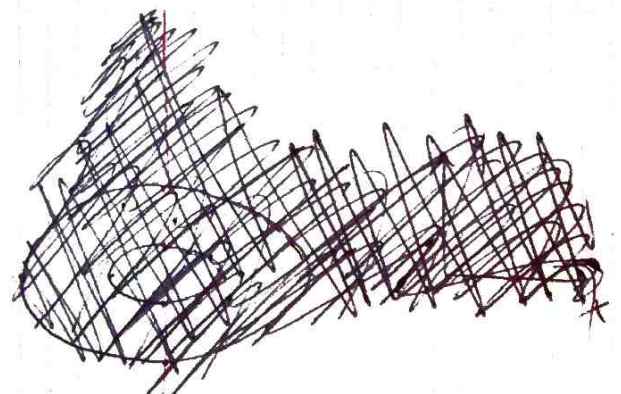
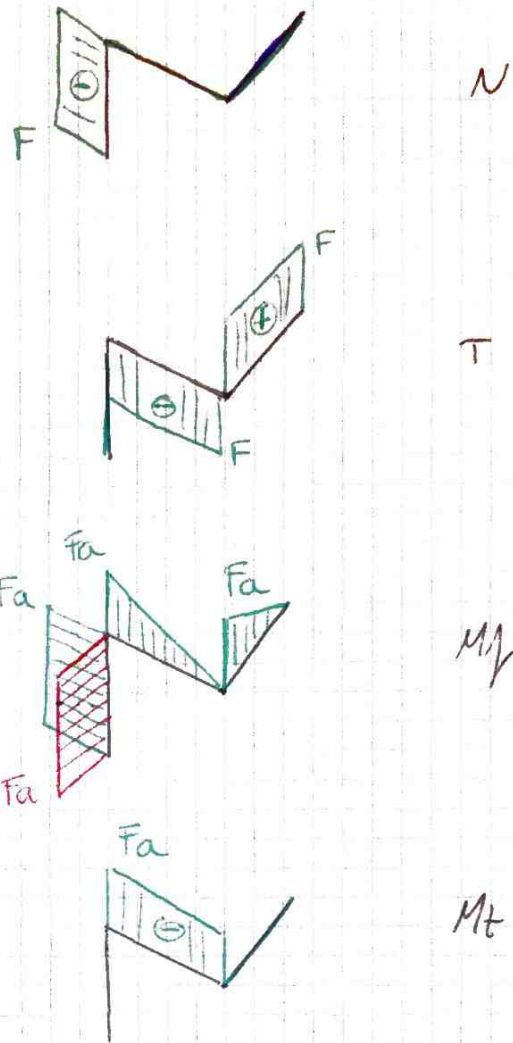
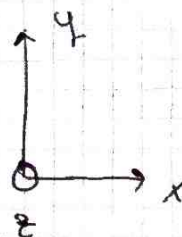
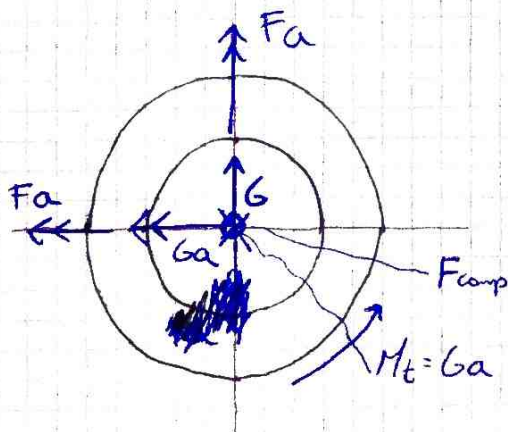
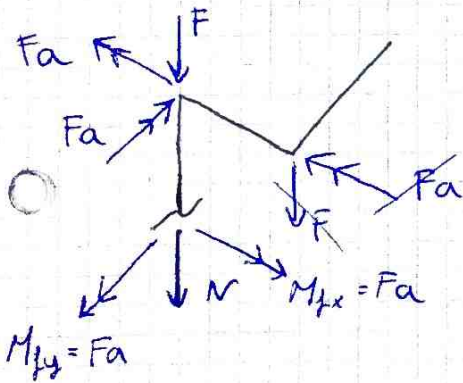


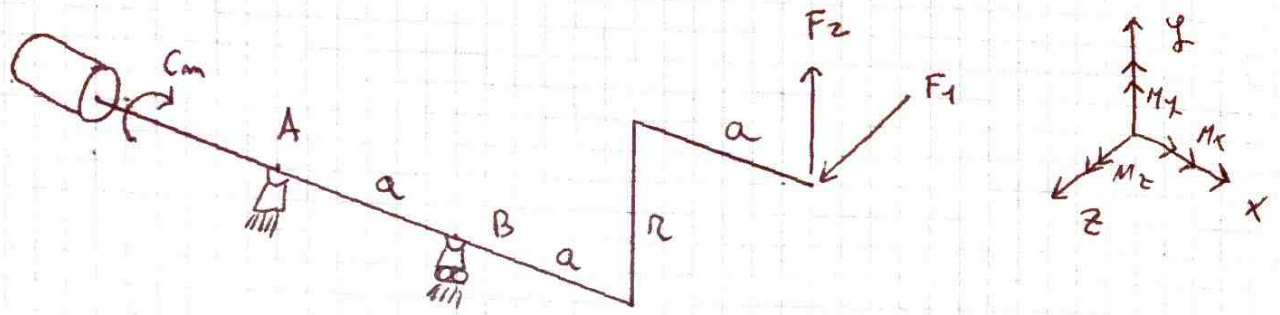
$$M_t = -Fa$$

$$T_{xz} = -F$$

$$M_{fy} = -Fx$$

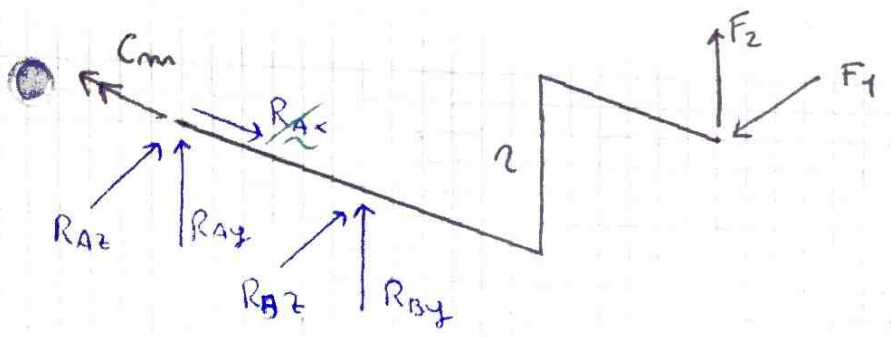
Asta 1





Struttura che ruota a velocità costante (tutte le forme ruotano in modo sincronizzato)

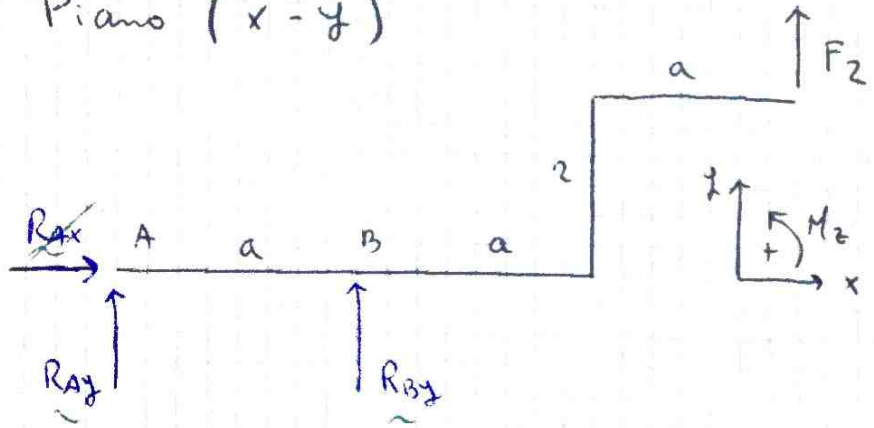
Per le azioni vincolari analizziamo piano per piano.



$$\begin{aligned} \sum F_x &= 0 \quad (x-y) \\ \sum F_z &= 0 \quad ((z-x)) \\ \sum F_y &= 0 \quad (x-y) \\ \sum M_z &= 0 \quad (x-y) \\ \sum M_x &= 0 \\ \sum M_y &= 0 \quad ((z-x)) \end{aligned}$$

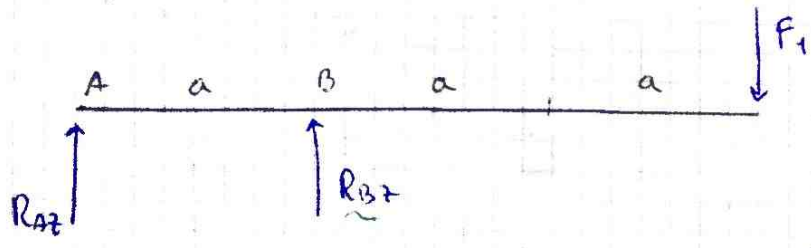
Applicare le 6 equazioni più tutte compilate in 3D.
 → Praticamente ad applicarle su piano

Piano (x-y)



$$\begin{aligned} \sum F_x &= 0 \quad R_{Ax} = 0 \\ \sum M_A &= 0 \\ R_{By} a + F_2 3a &= 0 \\ R_{By} &= -3 F_2 \\ \sum F_y &= 0 \quad R_{Ay} + R_{By} + F_2 = 0 \\ R_{Ay} &= -R_{By} - F_2 = 2F_2 \end{aligned}$$

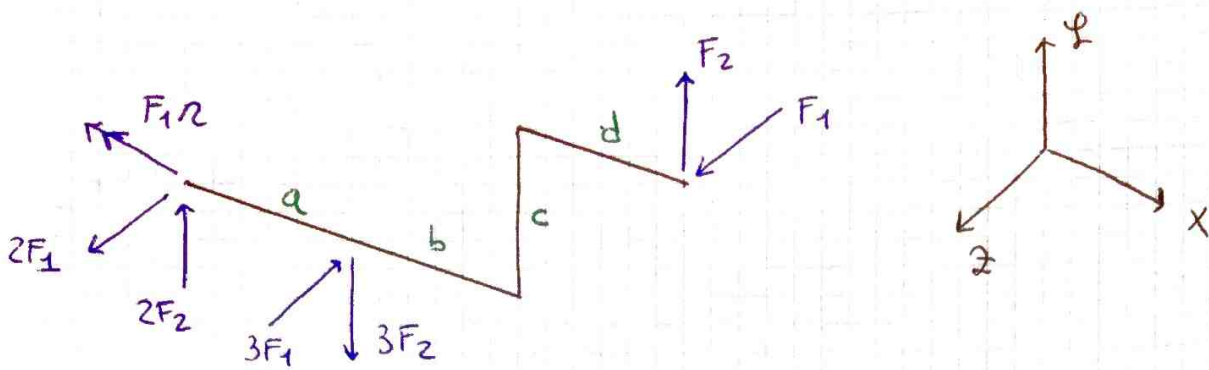
Piano (z-x)



$$\begin{aligned} \sum M_A &= 0 \\ R_{Bz} a - F_1 3a &= 0 \\ R_{Bz} &= 3F_1 \\ \sum F_z &= 0 \quad R_{Az} + R_{Bz} - F_1 = 0 \\ R_{Az} &= F_1 - R_{Bz} = -2F_1 \end{aligned}$$

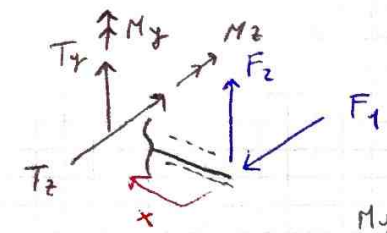
Piano (y-z)

$$-C_m + F_1 z = 0 \quad C_m = F_1 z$$



Tratto d

F_1 e $F_2 \perp$ ass. dove \Rightarrow No N

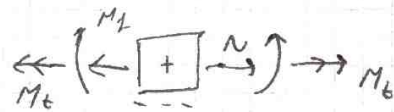
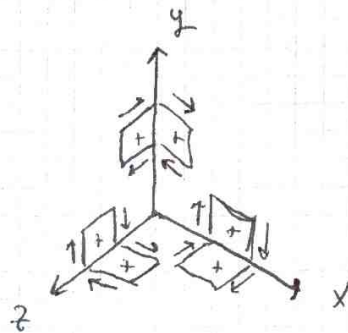
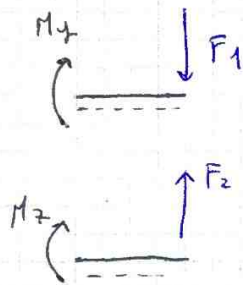


$$T_y = -F_2$$

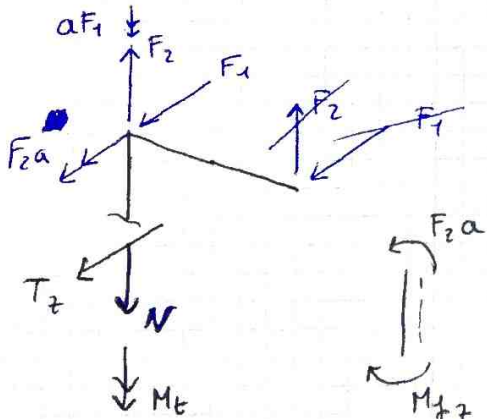
$$T_z = F_1$$

$$M_y = -F_1 x$$

$$M_z = F_2 x$$



Tratto c

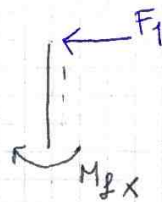


$$N = F_2$$

$$M_t = -F_1 a$$

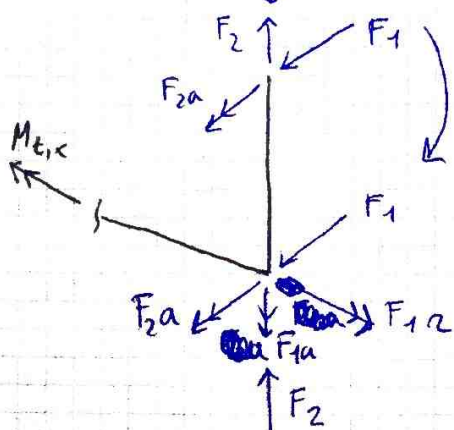
$$T_z = -F_1$$

$$M_{y,z} = F_2 a$$

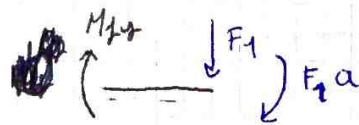


$$M_{t,x} = F_1 x$$

Tratto b

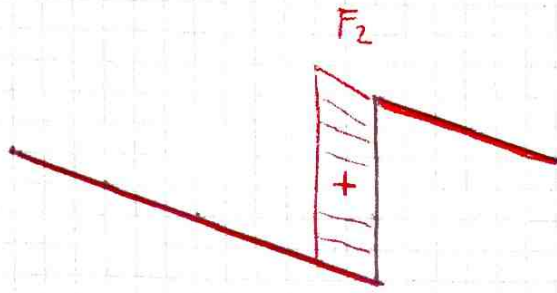


$$M_{t,x} = +F_1 a$$

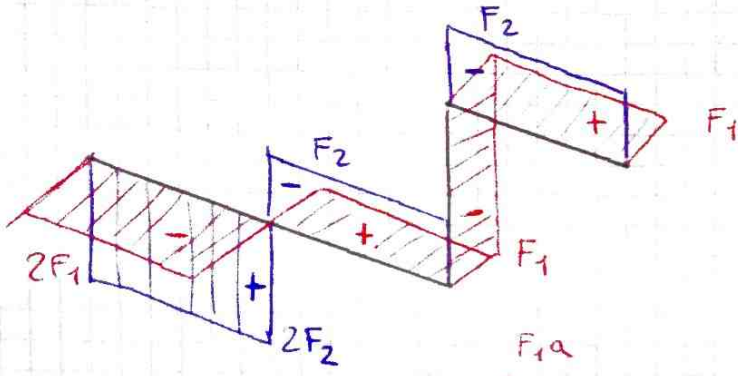


$$-M_{y,y} - F_1 x - F_2 a = 0$$

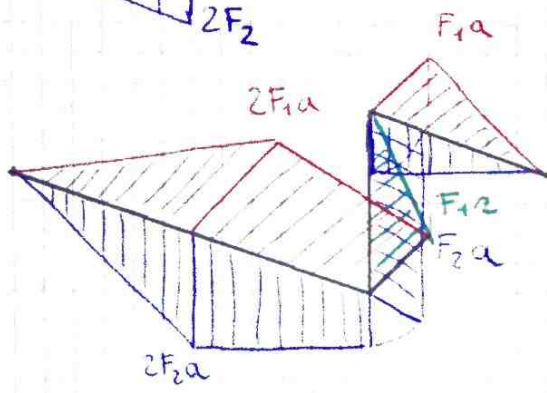
$$M_{y,y} = -F_2 a - F_1 x$$



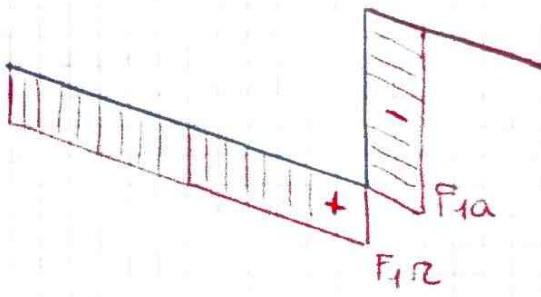
N



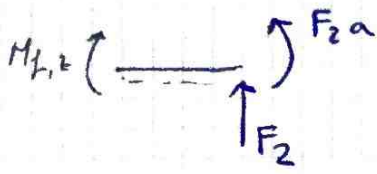
T



M_x

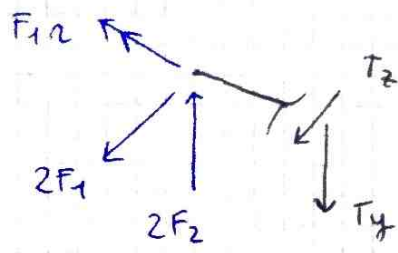


M_y



$$M_{x,z} = F_2 a + F_2 x$$

Tronco a



$$T_z = -2F_1$$

$$T_y = 2F_2$$