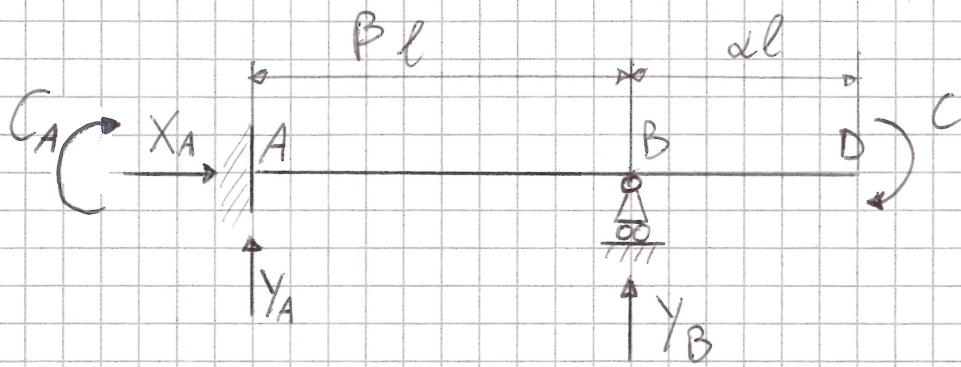
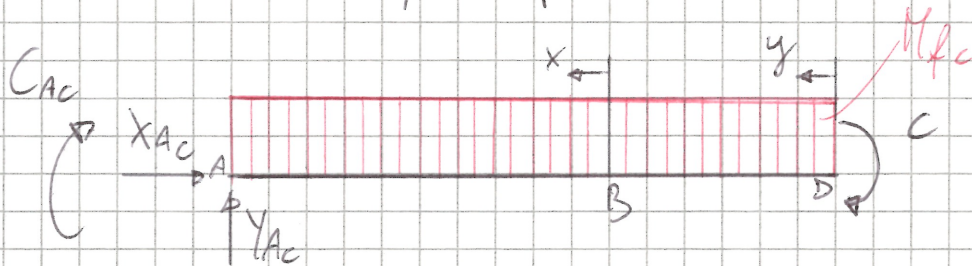


Esercizio 2.05.



Considero la struttura principale caricata dal solo carico C.



Calcolo le reazioni vincolari.

$$\rightarrow] X_{AC} = 0$$

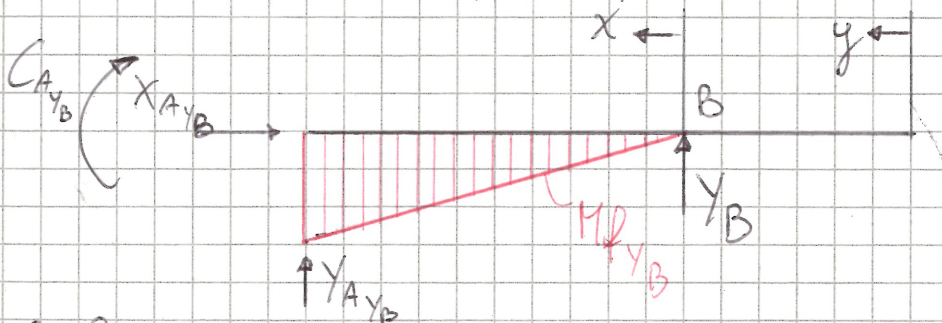
$$\uparrow] Y_{AC} = 0$$

$$\curvearrowright] C_{AC} = -C$$

$$M_{fc}(x) = C$$

$$M_{fc}(y) = C$$

Considero la struttura principale caricata dalla sola reazione Y_B .



Calcolo le reazioni vincolari

$$\rightarrow] X_{AYB} = 0$$

$$\uparrow] Y_{AYB} = -Y_B$$

$$A) C_{AYB} = Y_B \cdot l \cdot \beta$$

$$M_{f_{YB}}(x) = -Y_B \cdot x$$

$$M_{f_{YB}}(y) = 0$$

Ora uso il carico esplorativo al posto di Y_B , e ricavo direttamente $M_{f_1}(x)$ e $M_{f_1}(y)$

$$M_{f_1}(x) = -1 \cdot x ; M_{f_1}(y) = 0$$

Applico il PLV.

$$h_e = 1 \cdot \delta'' = 0 \rightarrow h_i = h_e = 0$$

$$h_i = \int_0^{pl} \frac{(M_{f_{YB}}(x) + M_{f_c}(x))}{ES} \cdot M_{f_1}(x) dx + \underbrace{\int_0^{pl} \frac{(M_{f_{YB}}(y) + M_{f_c}(y))}{ES} \cdot M_{f_1}(y) dy}_{=0} =$$

$$= \int_0^{pl} \frac{1}{ES} \cdot (-Y_B \cdot x + C) \cdot (-x) dx = \frac{1}{ES} \left[Y_B \cdot \frac{1}{3} \cdot pl^3 - C \cdot \frac{1}{2} \cdot pl^2 \right]$$

$$h_i = 0 \rightarrow Y_B = C \cdot \frac{1}{l} \cdot \frac{1}{\beta} \cdot \frac{3}{2}$$

$X_A = 0$ (non è una variabile iperstatica)

$$Y_A = 0 - Y_B = -C \cdot \frac{3}{2\beta}$$

$$C_A = Y_B \cdot l \cdot \beta - C = +C \cdot \frac{3}{2} - C = +\frac{1}{2}C$$