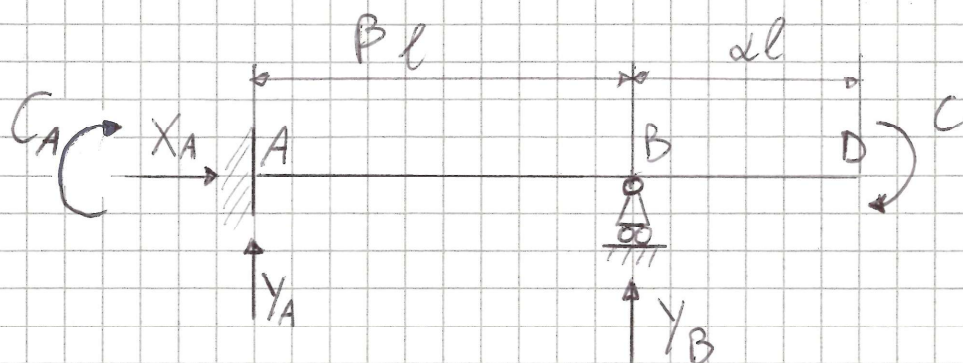
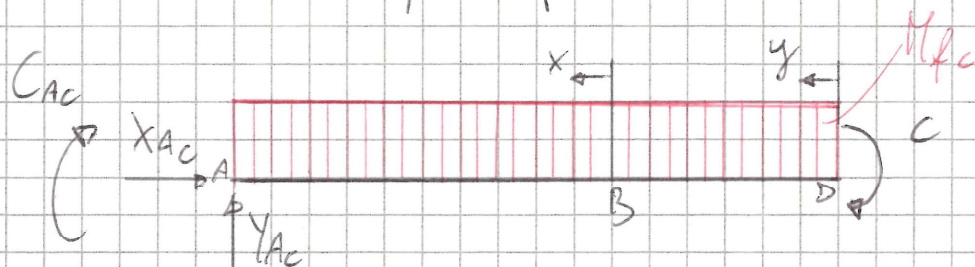


Esercizio

2.19



Considero la struttura principale caricata dal solo carico C.



Calcolo le reazioni vincolari.

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

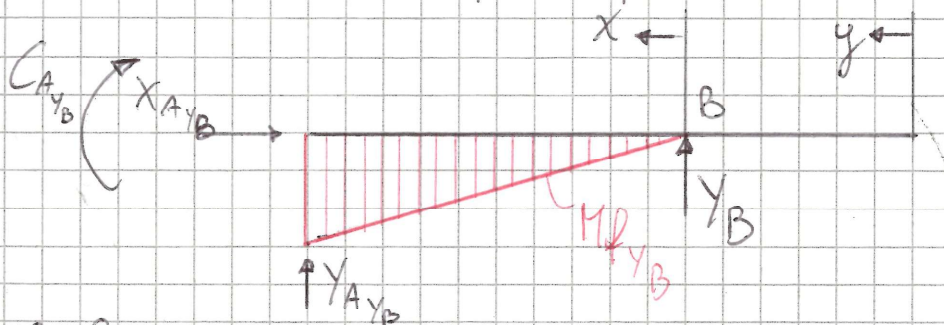
$$\uparrow] Y_{AC} = 0$$

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

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

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

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.

$$L_e = 1 \cdot \delta'' = 0 \rightarrow L_i = L_e = 0$$

$$L_i = \int_0^{Pl} \frac{(M_{f_{YB}}(x) + M_{f_c}(x))}{EJ} \cdot M_{f_1}(x) dx + \underbrace{\int_0^{dl} \frac{(M_{f_{YB}}(y) + M_{f_c}(y))}{EJ} \cdot M_{f_1}(y) dy}_{=0} =$$

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

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