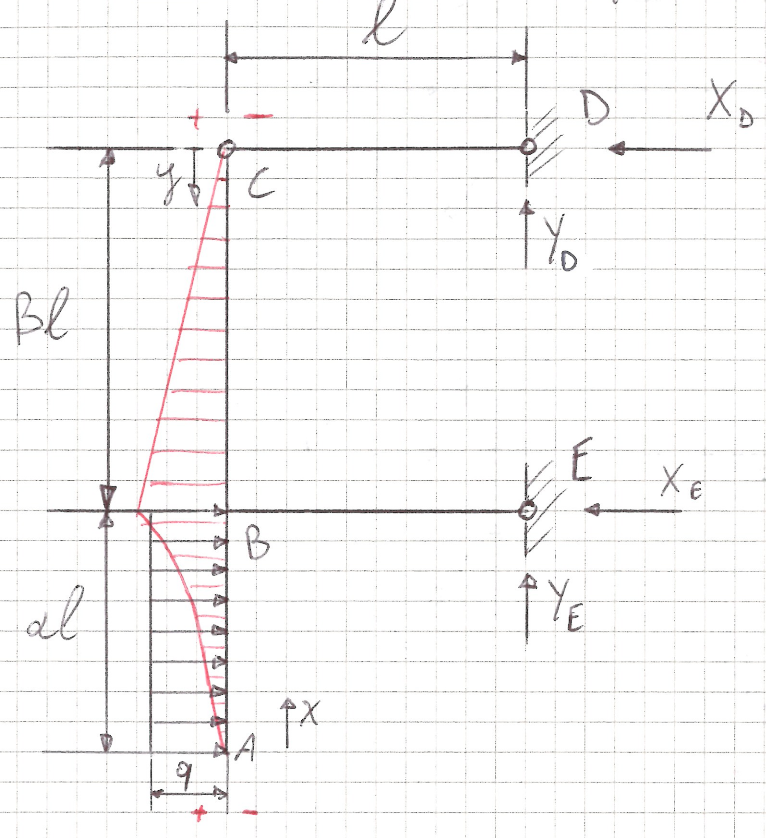
Esercizio 1.23.

Considero ora solo il carico distribuito q:



Uso le equazioni di equilibrio per determinare le reazioni vincolari:

$\rightarrow +]\quad q \cdot \alpha l - X_D - X_E = 0 \overset{(2)}{\rightarrow} ql \cdot \alpha - X_D - ql \cdot \left(\alpha + \frac{\alpha^2}{2\beta}\right) = 0 \rightarrow X_D = ql \cdot \frac{-\alpha^2}{2\beta}$

$\uparrow +]\quad Y_E + Y_D = 0 \overset{(4)}{\rightarrow} Y_E = 0$

$+\overset{\frown}{D}]\quad q \cdot \alpha l \cdot \left(\beta l + \frac{\alpha l}{2}\right) - X_E \cdot \beta l = 0 \overset{(1)}{\rightarrow} X_E = q \cdot l \cdot \left(\alpha + \frac{\alpha^2}{2\beta}\right)$

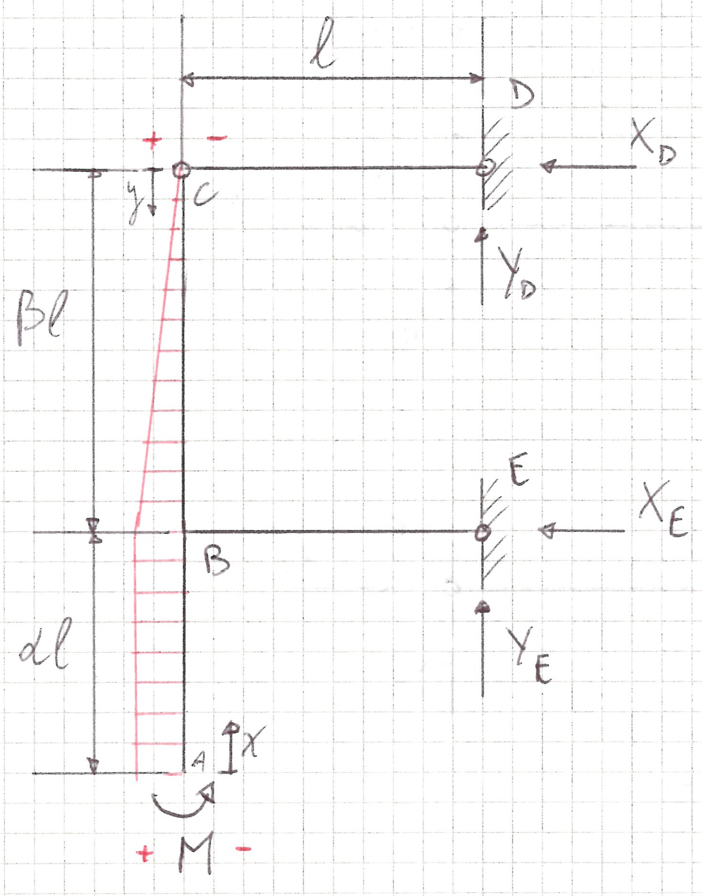
Mi serve una quarta condizione $\rightarrow$ C–D bielletta$]^{(3)}$ $Y_D = 0$

Calcolo i momenti flettenti:

$Mf_q(x) = q\frac{x^2}{2}$

$Mf_q(y) = -\left(-ql\,\frac{\alpha^2}{2\beta}\right) \cdot y = ql\,\frac{\alpha^2}{2\beta} \cdot y$

Considero ora la sola coppia M.



Calcolo le reazioni vincolari:

$\rightarrow^{+}]\quad -X_D - X_E = 0 \quad \xrightarrow{(2)} \quad X_D = -\dfrac{1}{\beta}\cdot\dfrac{M}{l}$

$\uparrow^{+}]\quad Y_D + Y_E = 0 \quad \xrightarrow{(4)} \quad Y_E = 0$

$\overset{+}{\circlearrowleft}_D]\quad +M - X_E\cdot\beta l = 0 \quad \xrightarrow{(1)} \quad X_E = \dfrac{1}{\beta}\cdot\dfrac{M}{l}$

Mi serve una quarta condizione: C—D bielletta $\overset{(3)}{\}}$ $Y_D = 0$

$Mf_M(x) = +M$

$Mf_M(y) = +\dfrac{1}{\beta}\cdot\dfrac{M}{l}\cdot y$