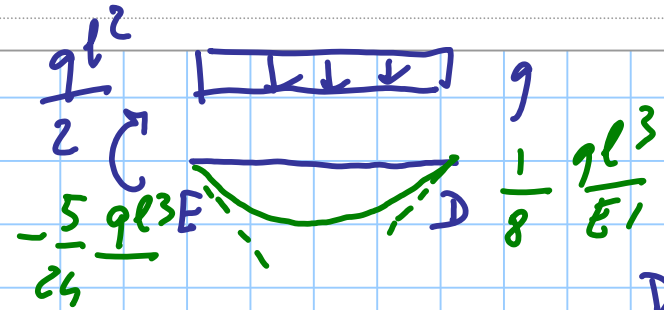
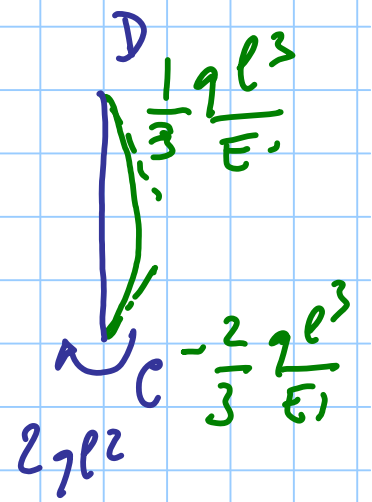


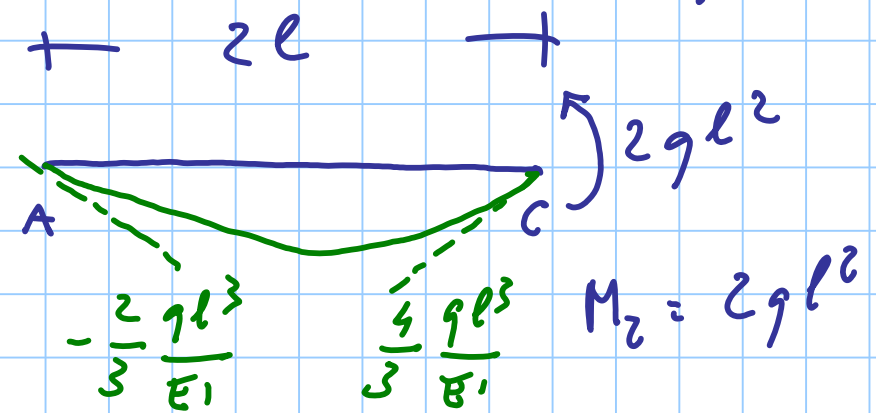
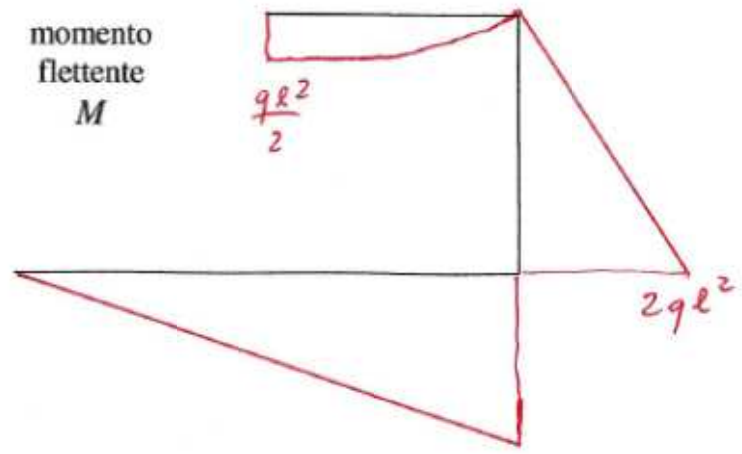
$$M_1 = -\frac{ql^2}{2}$$



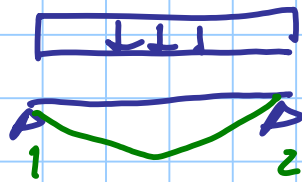
$$M_1 = -2ql^2$$



momento  
flettente  
 $M$

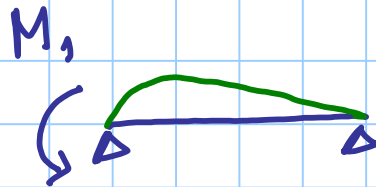


$$M_2 = 2ql^2$$



$$\varphi_1 = -\frac{ql^3}{24EI}$$

$$\varphi_2 = +\frac{ql^3}{24EI}$$



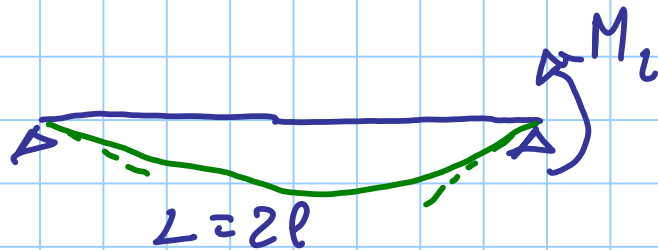
$$\varphi_1 = \frac{M_1 l}{3EI}$$

$$\varphi_2 = -\frac{M_1 l}{6EI}$$

$$M_1 = -\frac{ql^2}{2}$$

$$\varphi_1 = -\frac{ql^3}{6EI}$$

$$\varphi_2 = \frac{ql^3}{12EI}$$



$$M_2 = 2ql^2$$

$$\varphi_1 = -\frac{M_2(2l)}{6EI} = -\frac{2}{3} \frac{ql^3}{EI}$$

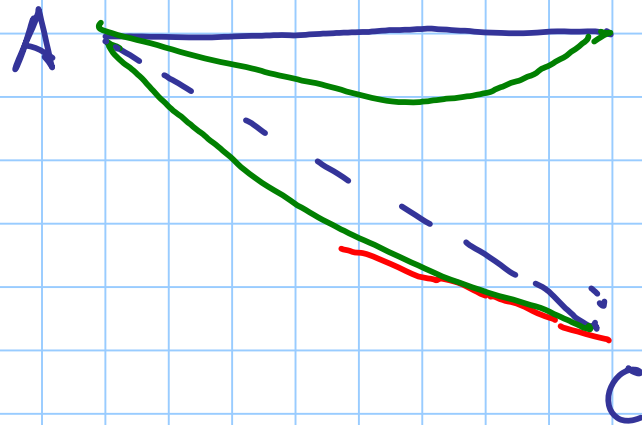
$$\varphi_2 = \frac{M_2(2l)}{3EI} = \frac{4}{3} \frac{ql^3}{EI}$$

$$-\frac{5}{24} \frac{ql^3}{EI} \quad \frac{1}{8} \frac{ql^3}{EI}$$

$$\frac{1}{3} \frac{ql^3}{EI} \quad -\frac{2}{3} \frac{ql^3}{EI}$$

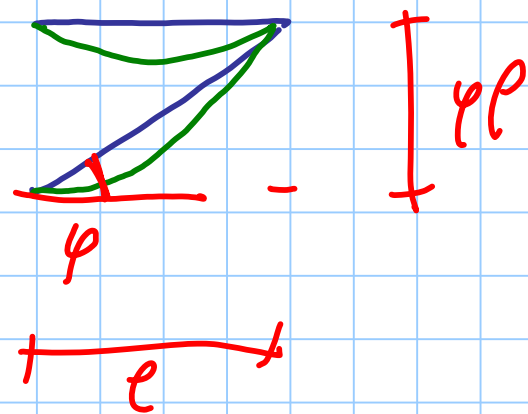
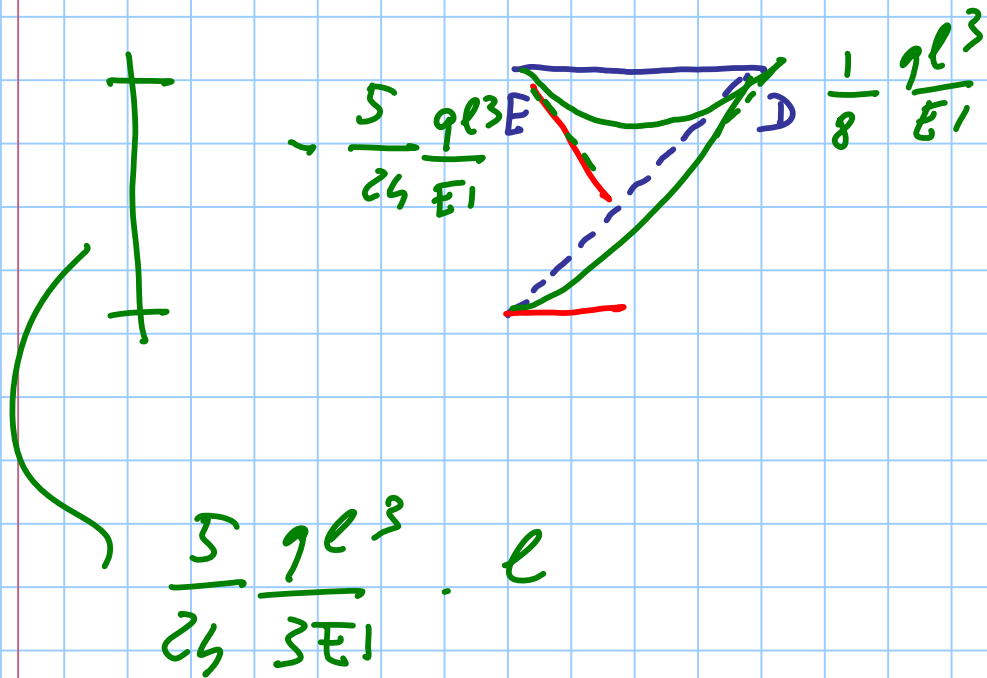
$$\varphi_L = \frac{4}{3} \frac{ql^3}{EI} \cdot 2l$$

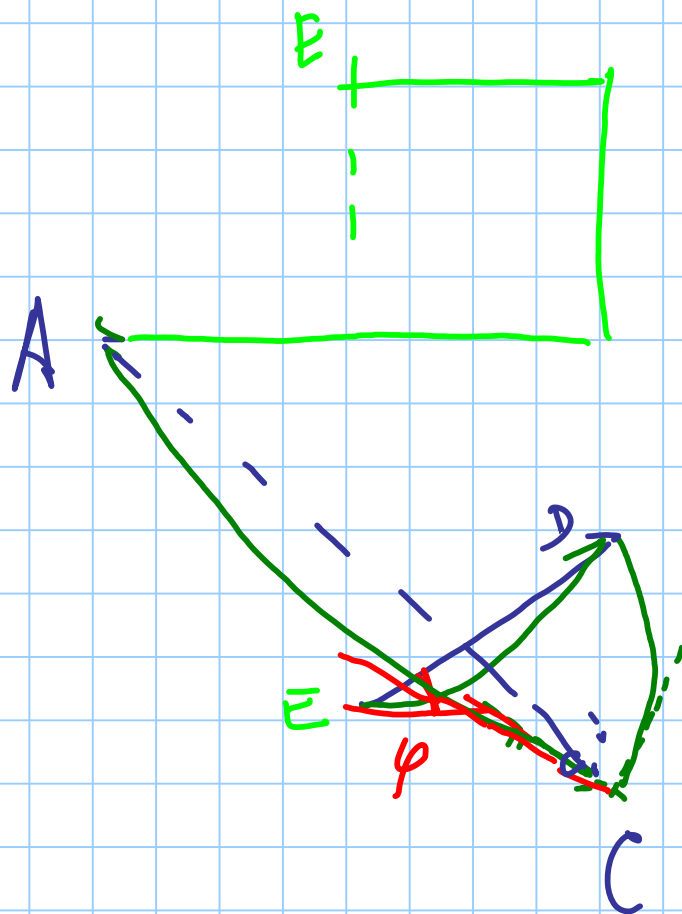
$$-\frac{2}{3} \frac{ql^3}{EI}$$



$$v_2 = \frac{8}{3} \frac{q L^4}{EI}$$

$$v = L + v_2 \frac{x}{L}$$

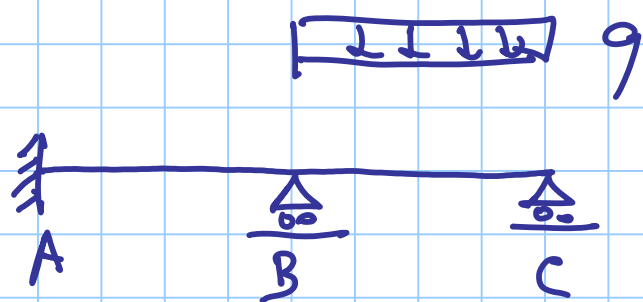




# SCHEMI IPERSTATICI

— METODO DELLE FORZE

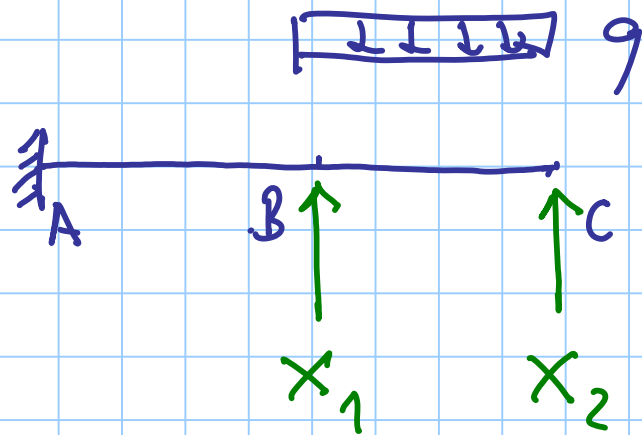
— METODO DEGLI SPOSTAMENTI



2 volte iperstatica

- crea delle sconnessioni (interne o esterne)
- considera come incognite le azioni che in realtà si devono trasmettere attraverso le sconnessioni
- determina le incognite imponendo condizioni di congruenza



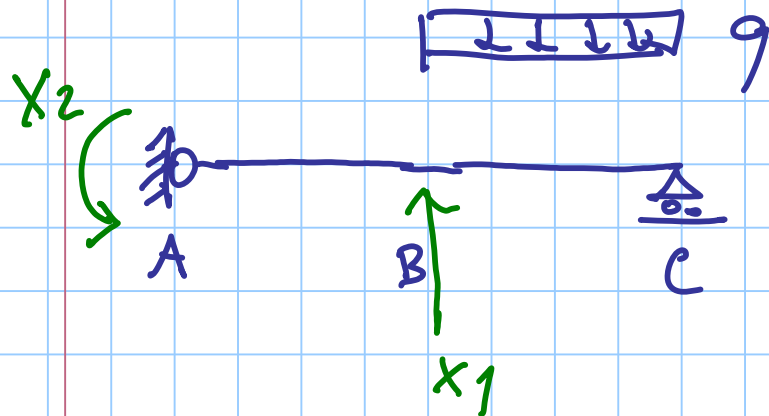


Condizioni

Giolla

$$M_{z,B} = 0$$

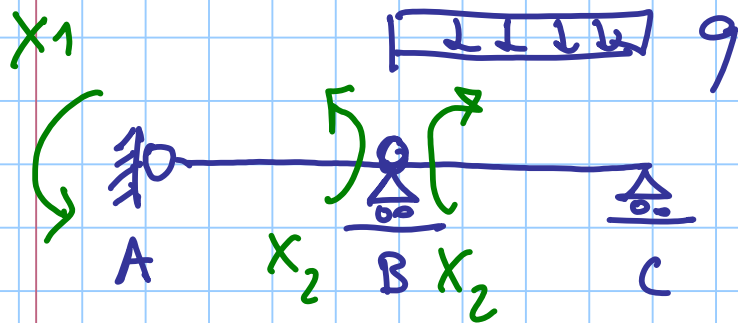
$$M_{z,C} = 0$$



$$M_{z,B} = 0$$

SAMMITO

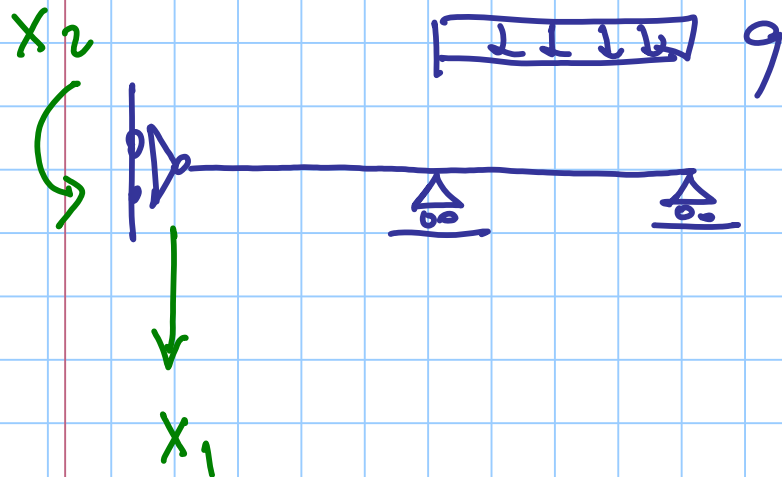
$$\varphi_{y,A} = 0$$



$$\varphi_{y,A} = 0$$

DI LE

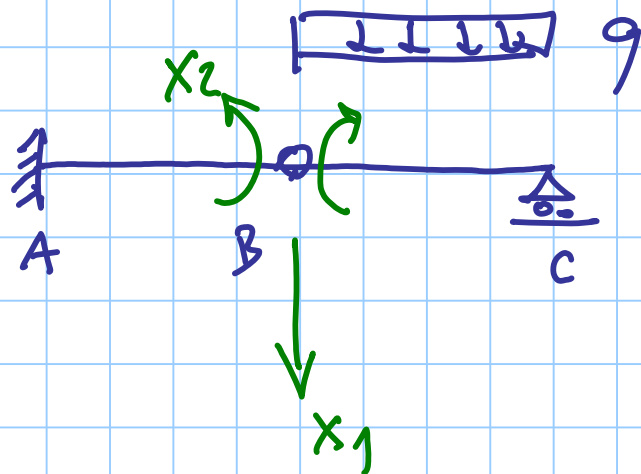
$$\varphi_{y,B, \text{sin}} = \varphi_{y,B, \text{des}}$$



$$M_{z,A} = 0$$

SPILLA

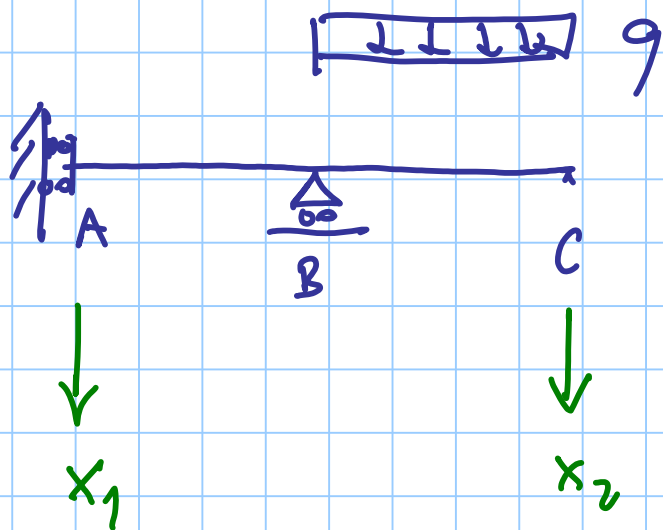
$$\varphi_{y,A} = 0$$



$$M_{z,B} = 0$$

COSTANTINO

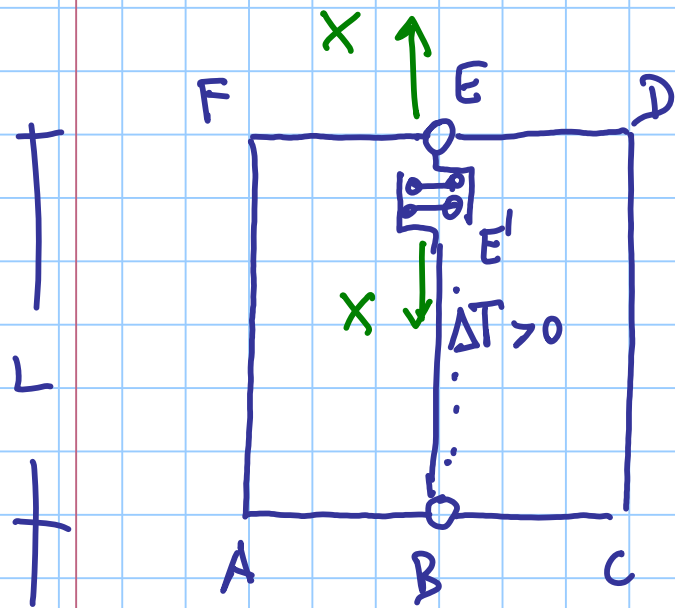
$$\varphi_{y,B,in} = \varphi_{y,B,out}$$



$$M_{z,A} = 0$$

SOTTILE

$$M_{z,C} = 0$$



GUARIND

$$u_{z,E'} = u_{z,E}$$

B fino (i le bide)

$$u_{z,E'}(\Delta T) = -\alpha L \Delta T$$

$$u_{z,E'}(x) = \frac{xL}{EA}$$

