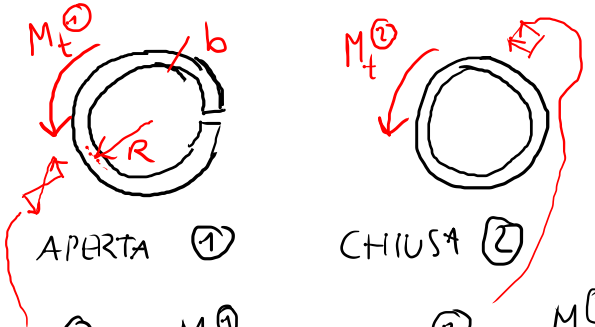
CONFRONTO TRA IL MOM. TORCENTE MASSIMO IN UNA SEZ "CHIUSA" E NELLA STESSA SEZ PERO' "APERTA"

ULTIMA LEZ. 06 IN 22/12/23



$M_t^{①}$: M. TORC. MASSIMI

$M_t^{②}$: CHE LE SEZIONI POSSONO SOSTENERE

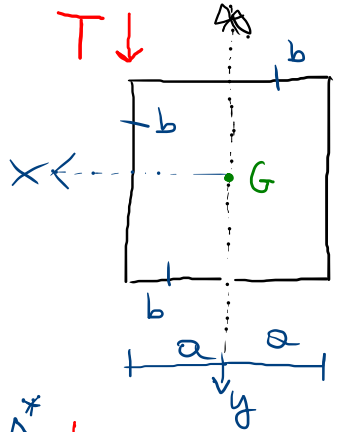
$$\tau_{max}^{①} = \frac{M_t^{①}}{J_t} b \qquad \tau_{max}^{②} = \frac{M_t^{②}}{2 \cdot \pi R^2 b}$$

$$J_t = \frac{1}{3} 2\pi R b^3$$

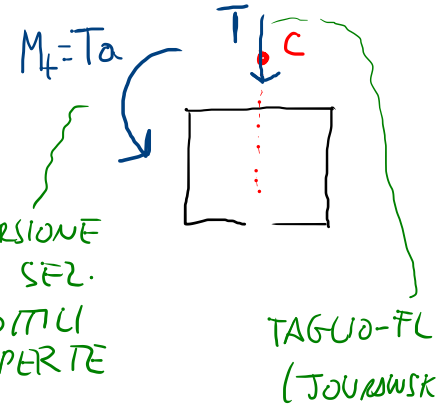
$$\frac{M_t^{②}}{M_t^{①}}\Big|_{\tau_{max}^{①} = \tau_{max}^{②}} = \frac{2\pi R^2 b}{\frac{2}{3}\pi R b^3} b = \frac{3R}{b} = \frac{150}{7} \simeq 21$$

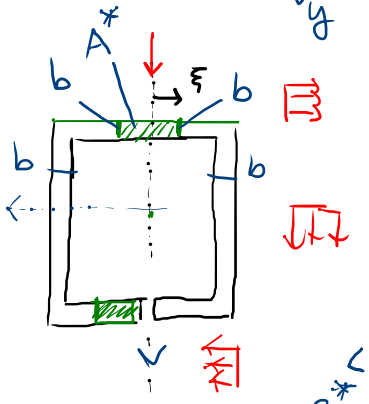
$R = 50$ mm ; $b = 7$ mm

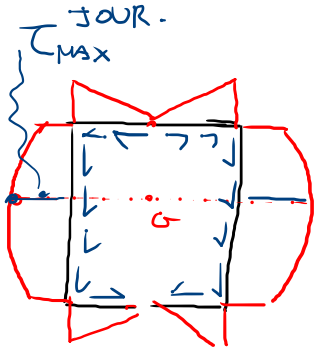
ES

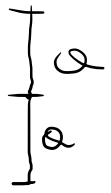


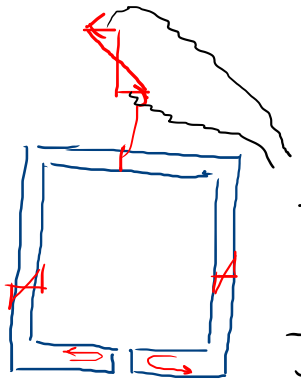
ANDAM. TENS. TANG. DEL PROBLEMA e DOVE' SI TROVA LA τ_{MAX}











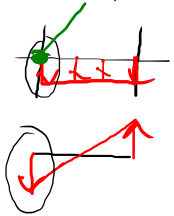
$$\tau^{TORS}_{MAX} = \frac{M_t}{J_t} b$$

$$J_t = \frac{1}{3} 8a b^3$$

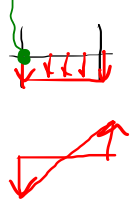
$$\bar{\tau}_{zx}(\xi) = \frac{T}{I_x} \frac{S_x^*}{2b} < 0 \quad (\bar{\tau}_{zx} \text{ uscenti})$$

$S_x^* < 0$

$\tau_{MAX} = \tau^{JOUR}_{MAX} + \tau^{TORS}_{MAX}$

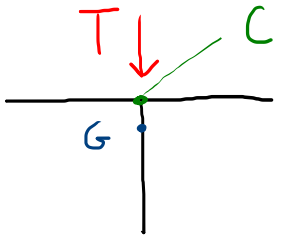


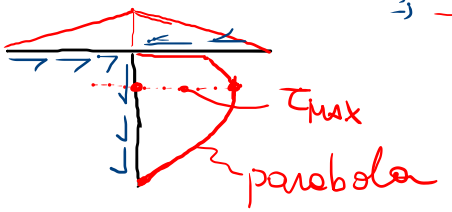
PUNTI "PIU' SOLLECITATI" (DOVE ANDRA' FATTA LA VER DI RESIST.)

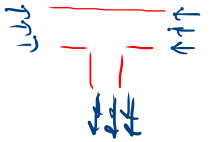


TAGLIO - FLESSIONE

LES



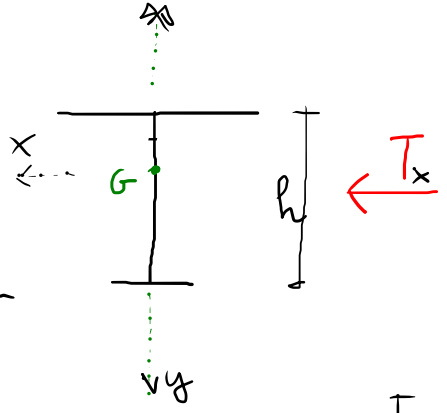


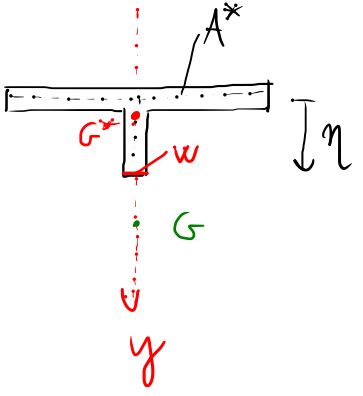


LES

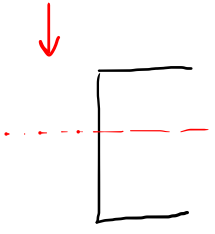
C?

(come di sinistra)





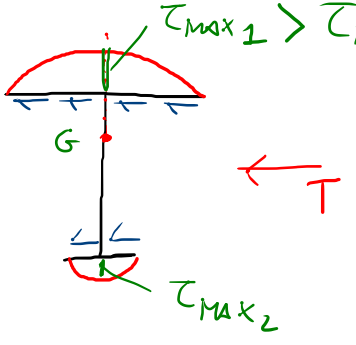
$$\tau_{zy}(\eta) = \frac{T}{I_y}\frac{S_y^*}{w} = 0$$

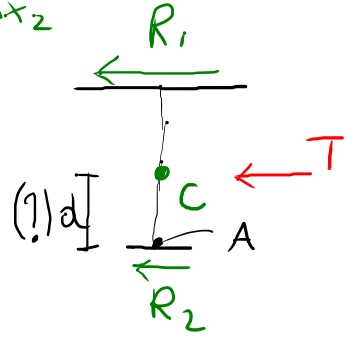


$M_A^T \quad M_A^{R_1 - R_2}$

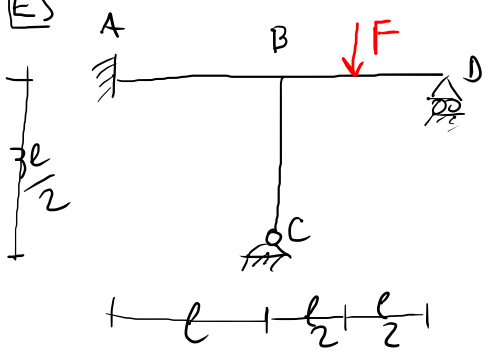
$$Td = R_1 h \Rightarrow d$$

$R_1 + R_2 = T$

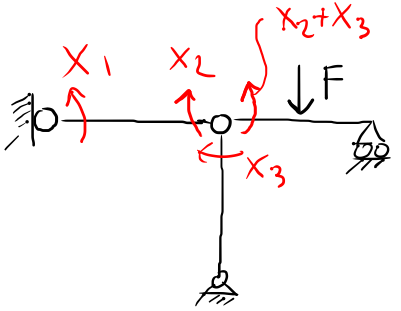




ES



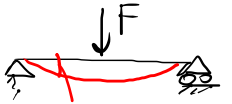
3 v. iperst.



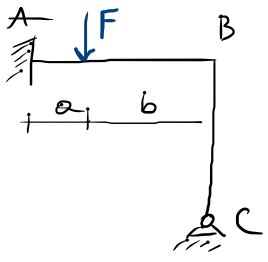
$\varphi_A = 0$

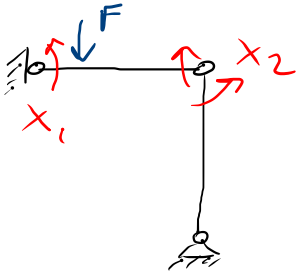
$\varphi_{BA} = \varphi_{BC}$

$\varphi_{BA} = \varphi_{BD}$

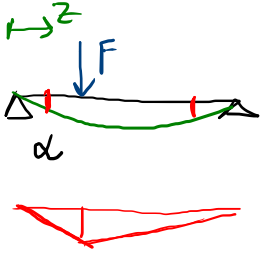


$\frac{F\ell^2}{16\,EI}$



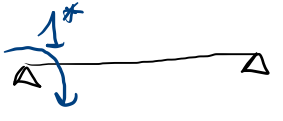


$\left.\begin{array}{l}\varphi_A = 0 \\ \varphi_{BA} = \varphi_{BC}\end{array}\right\}$



α? ; APPLICO P.L.V.

SCH. REALE

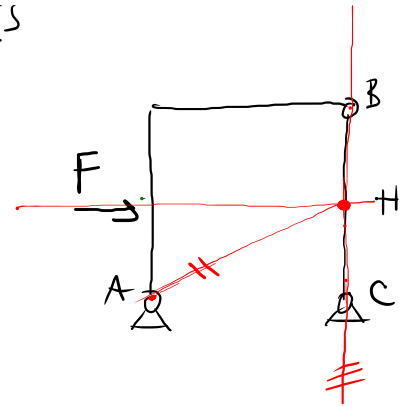


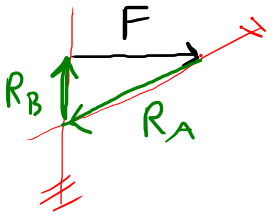
SCH. FITTIZIO

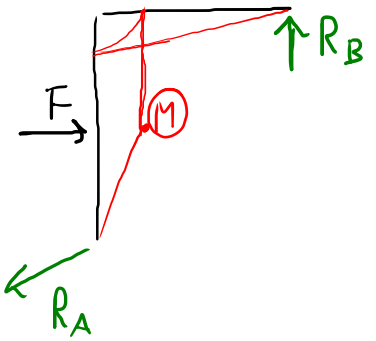
M^*

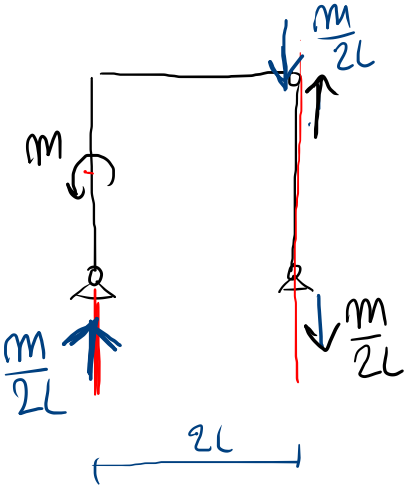
$$1 \cdot \alpha = \int_{str} M^* \frac{M}{EI}\, dz$$

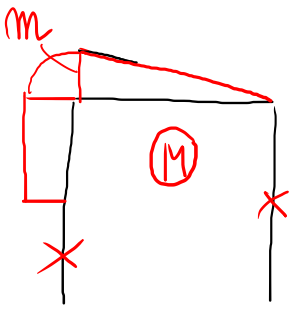
ES



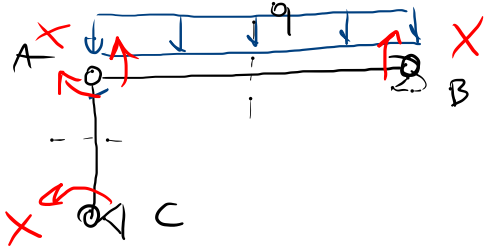




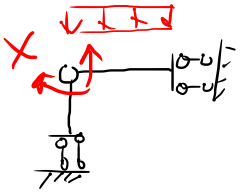




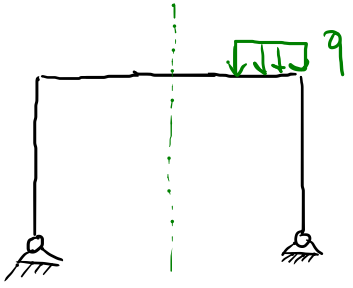
ES



$\varphi_{AC} = \varphi_{AB} \Rightarrow X$



STRUTTURA SIMMETRICA CON CARICO GENERICO



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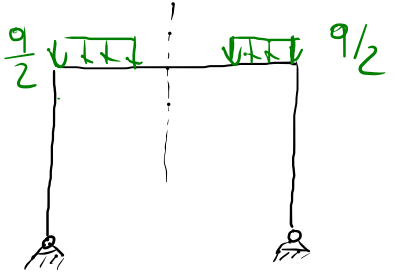
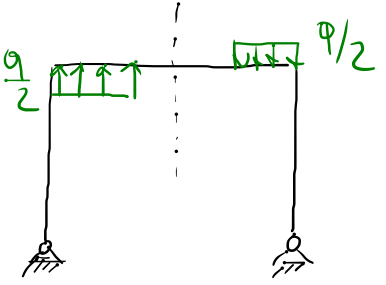
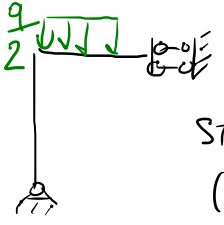


CARICO SYM

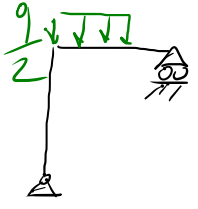
+



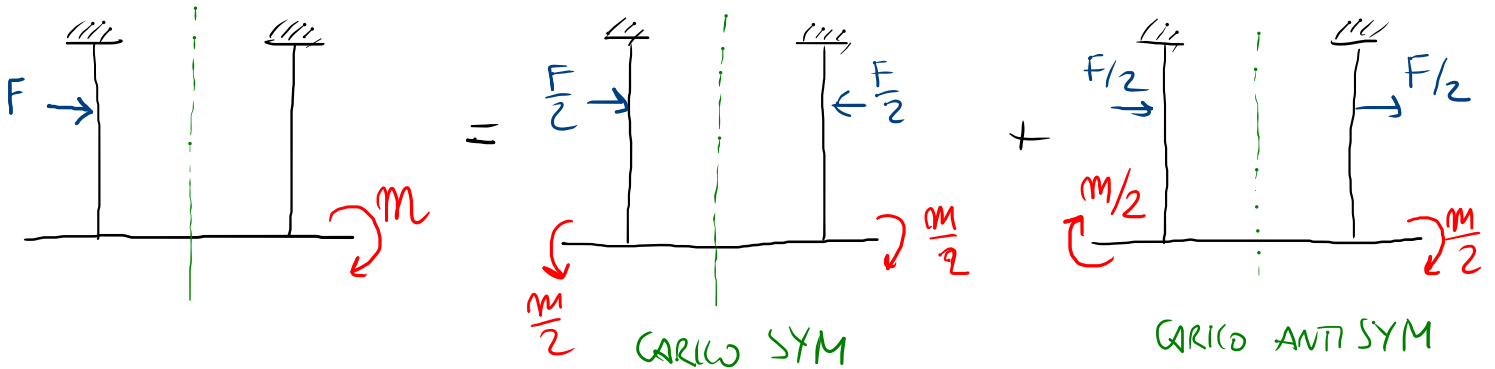
CARICO ANTI SYM



STR RIDOTTA
(1 V. IPERST.)



STR RIDOTTA
(ISOST.)


F
M
=
F/2
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CARICO SYM
+
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F/2
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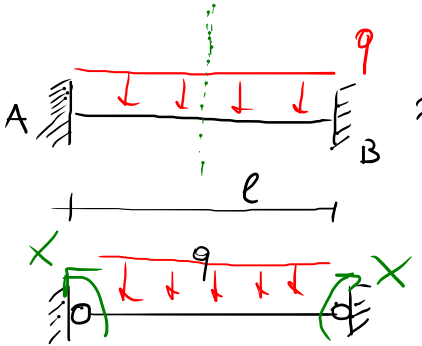
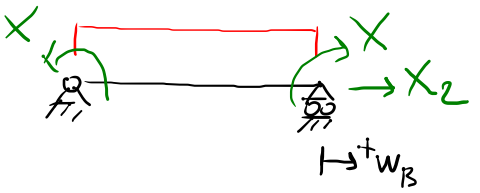
M/2
CARICO ANTI SYM

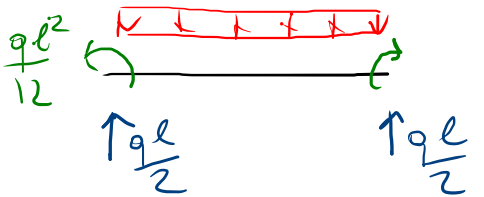
TRAVE A DOPPIO INCASTRO



$\Rightarrow$



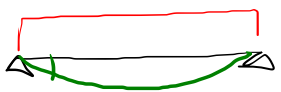
$\Rightarrow \quad w_B = 0 \;;\; w_B(X_2) = 0 \Rightarrow \boxed{X_2 = 0}$



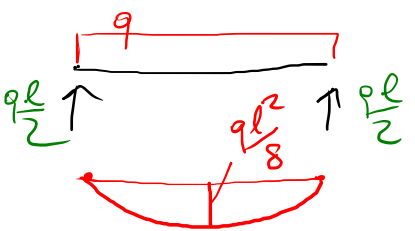
S.C.L. EQUIL.

$\curvearrowright \boxed{\varphi_A = 0}$:

$$\frac{X\ell}{3EI} + \frac{X\ell}{6EI} - \frac{q\ell^3}{24EI} = 0 \quad ; \quad X = +\frac{q\ell^2}{12}$$



$\frac{q\ell^3}{24EI}$



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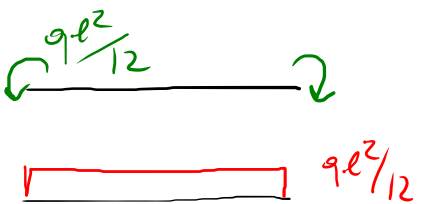

(M)