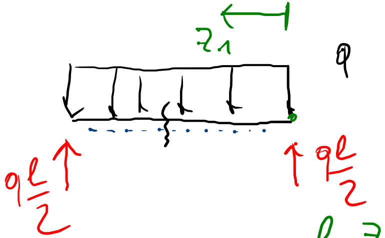
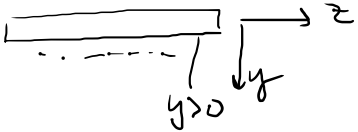
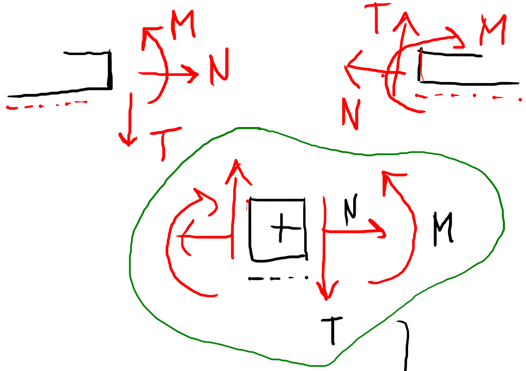
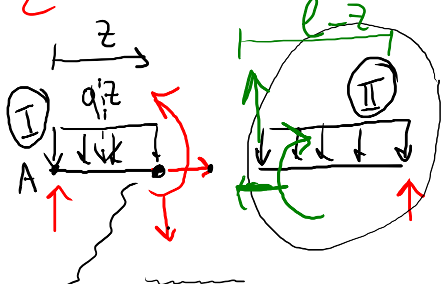
9/11/2022







$\boxed{0<z<\ell}$



K $\quad N(z), T(z), M(z)$

$\xrightarrow{+}$: $+N(z)=0$

$+\uparrow$: $+q\frac{\ell}{2} - qz - T(z) = 0$

$+\circlearrowleft_K$: $-q\frac{\ell}{2}\cdot z + qz\cdot\frac{z}{2} + M(z) = 0$

$N(z)=0 \qquad 0\leq z\leq \ell$

$T(z) = q\frac{\ell}{2} - qz \qquad 0<z<\ell$

$M(z) = -q\frac{z^2}{2} + q\frac{\ell}{2}z$

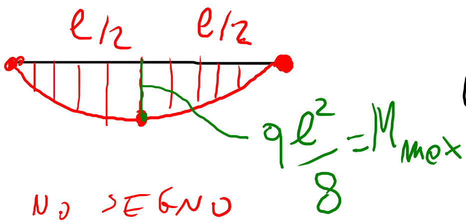
$\frac{z}{2}$

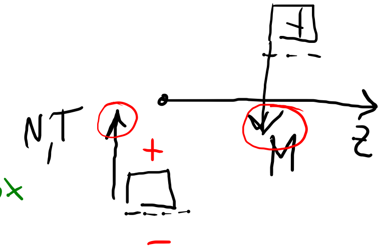
DIAGRAMMA DI UNA CDS: È IL GRAFICO DELLA CDS DISEGNATO SECONDO PRECISE CONVENZ. $0\leq z\leq \ell$

N

T

M

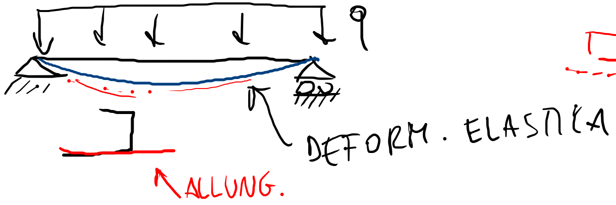


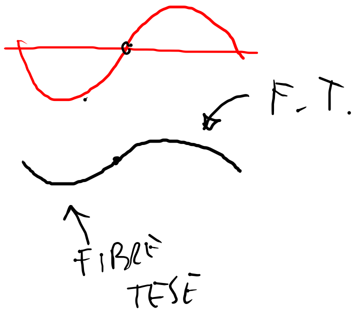


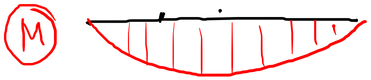
$$M\left(\frac{\ell}{2}\right) = -q\frac{z^2}{2} + q\frac{\ell}{2}z \Big|_{z=\frac{\ell}{2}} = -\frac{q}{2}\frac{\ell^2}{4} + q\frac{\ell}{2}\frac{\ell}{2} = +\frac{q\ell^2}{8} = M_{max}$$

IN MEZZERIA della TRAVE APPOGGIATA.

OSS. SUL DIAGR (M)



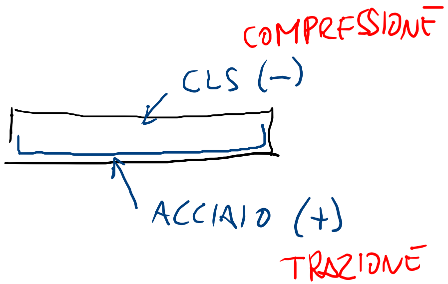




IL DIAGR. DEL MOMENTO VIENE SEMPRE DISEGNATO DALLA PARTE DELLE FIBRE "TESE" DELLA SEZIONE

$M^+ \leftrightarrow$ F. TESE

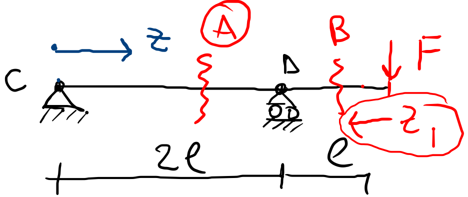
CONVENZ. PAESI NON ANGLOSASSONI

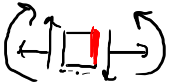


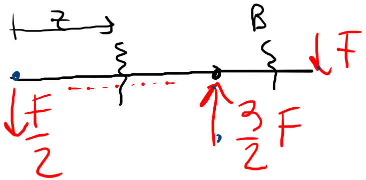
$M^+ \leftrightarrow$ F. COMPR.

PAESI ANGLOSASSONI

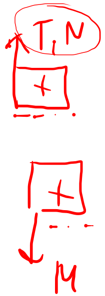
LES







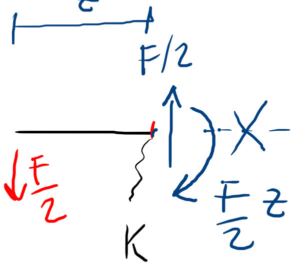
SCL EQUIL.



IN QUESTA STR DEVO "TAGLIARE" LA STRUTTURA IN 2 PUNTI:

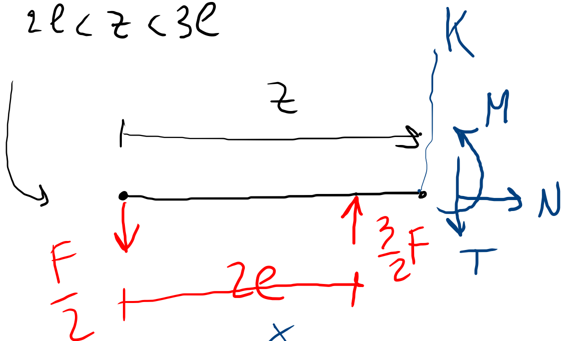
(A) $0 < z < 2\ell$

(B) $2\ell < z < 3\ell$



(A)

$$\begin{cases} \boxed{N(z) = 0} \\ T(z) = -\dfrac{F}{2} \\ M(z) = -\dfrac{F}{2} z \end{cases}$$



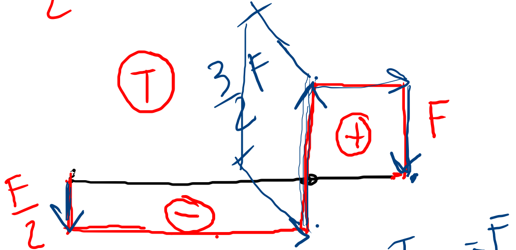
$\xrightarrow{+}$: $N(z) = 0$

$+\uparrow$: $-\dfrac{F}{2} + \dfrac{3}{2} F - T(z) = 0$

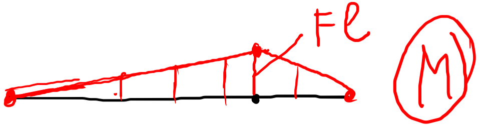
$+\circlearrowleft_K$: $\dfrac{F}{2} z - \dfrac{3}{2} F (z - 2\ell) + M(z) = 0$

(B)

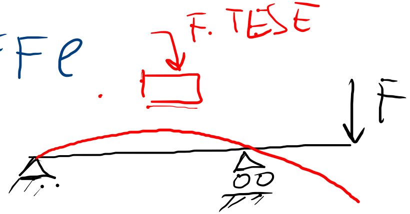
$$\begin{cases} \boxed{N(z) = 0} \\ T(z) = +F \\ M(z) = Fz - 3F\ell \end{cases}$$



$T_{MAX} = F$



$M_{max} = F\ell$.

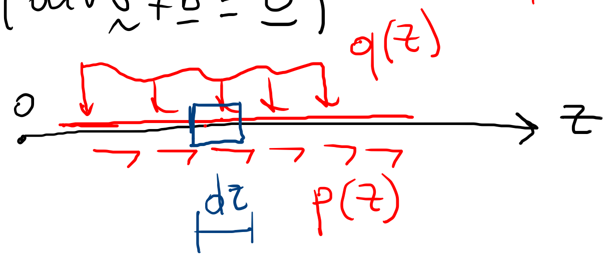


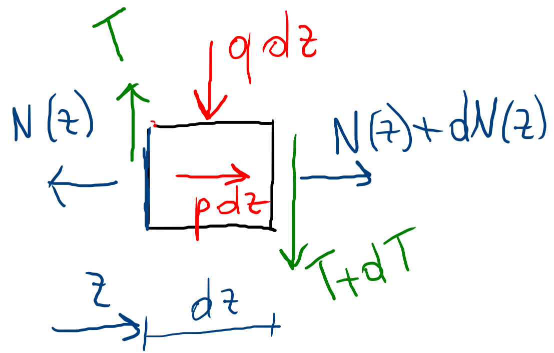
EQUAZIONI DI EQUILIBRIO PUNTUALE DELLE TRAVI AD ASSE RETTILINEO (INDEFINITE)

• DET. DELLE ~~RELAZIONI~~ EQUAZIONI DI TIPO DIFFERENZ. CHE STABILISCANO DELLE RELAZIONI TRA CDS E CARICHI APPLICATI

$$\left(\operatorname{div} \underset{\sim}{\sigma} + \underline{b} = \underline{0}\right)$$

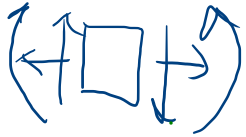
$q(z)$, $p(z)$ ASSEGNATE





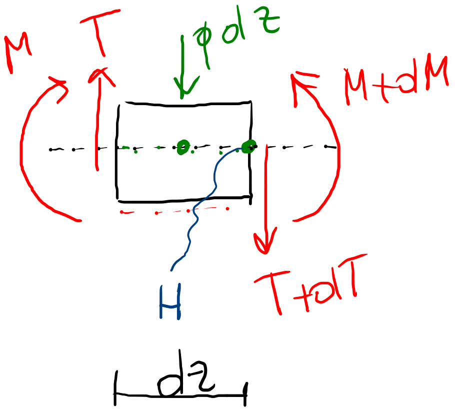
N $\xrightarrow{+}$: $-\cancel{N(z)} + p(z)\,dz + \cancel{N(z)} + dN(z) = 0$

$$\boxed{\frac{dN(z)}{dz} = -p(z)}$$



T $\uparrow +$: $+\cancel{T} - q\,dz - \cancel{T} - dT = 0$;

$$\boxed{\frac{dT(z)}{dz} = -q(z)}$$



$$\overset{\curvearrowleft}{+H} \; ; \; \cancel{-M} \underbrace{-T\,dz}_{\text{I}} + \cancel{\underbrace{q\,dz\,\frac{dz}{2}}_{\text{II}}} \cancel{+M} + \underbrace{dM}_{\text{I}} = 0$$

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INFINT. II ORDINE

$$-T\,dz + dM = 0 \implies \boxed{\frac{dM}{dz} = T(z)}$$

IL TAGLIO È
LA DERIVATA
DEL
MOMENTO
FLETTENTE