Titolo nota 31/10/2013

TRAVE RETICOLARE

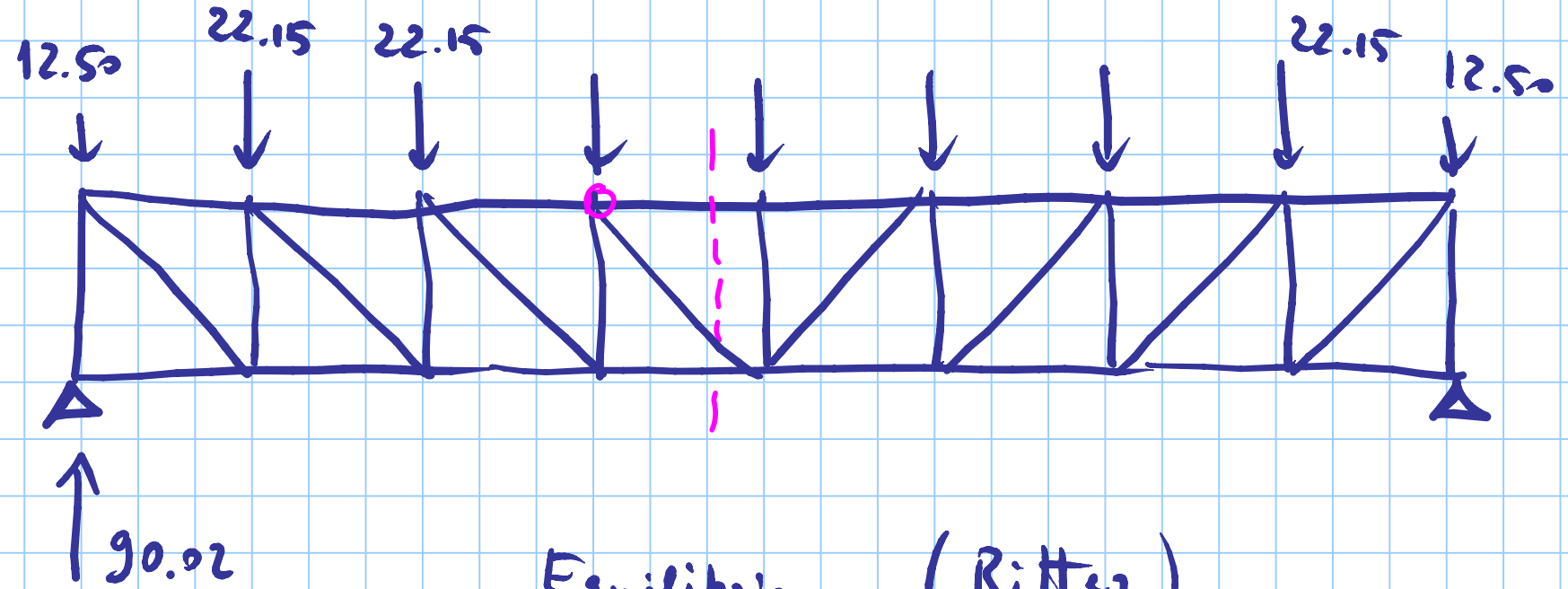
neve	$q_k = 0.80$ kN/m²	$\gamma_q = 1.5$	$q_d = 1.20$ kN/m²
p.p. lamiera	$g_k = 0.20$ kN/m²	$\gamma_g = 1.3$	$g_d = 0.26$ kN/m²
p.p. Travi sec.	$g_k = 0.3$ kN/m		$g_d = 0.39$ kN/m
p.p. aste Trav. ret.	$g_k = 0.2$ kN/m		$g_d = 0.26$ kN/m

calcolo di F_d (nodi interni)

		g_1	q_1	
copertura	$12\ m^2$	3.12	14.40	kN
trave sec.	6 m	2.34	–	
asta Tra.inf.	8.8 m	2.29	–	
		7.75	14.40	Tot. 22.15 kN

nodo esterno

cop.	$6\ m^2$	1.56	7.20	
tr. sec	6 m	2.34	–	
tr. inf.	5.4 m	1.40	–	Tot. 12.50 kN



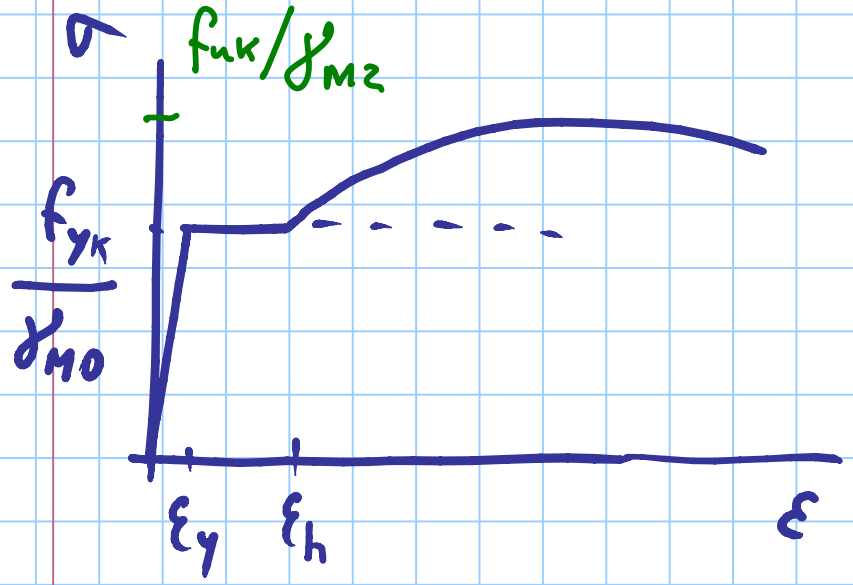
Equilibrio (Ritter)

N.B sinistra a TA

$$\frac{90.02}{63.34} = 1.42$$

$$-(90.02-12.50)\times 6.00 + 22.15\times 4.00 + 22.15\times 2.00 + N_{Ed}\times 2.00 = 0$$

$$N_{Ed} = 166.1\ KN$$



γ_{M1} per instabilità

in pratica $\gamma_{M1} = \gamma_{M0}$

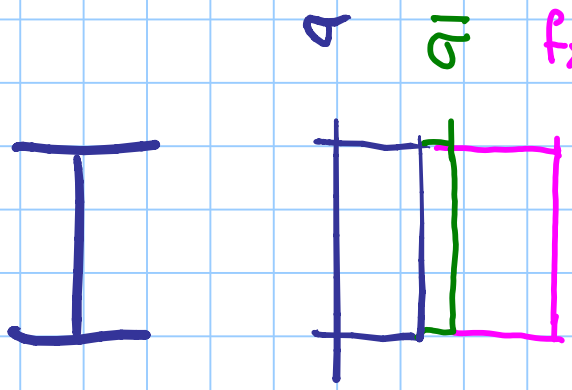
$\gamma_{M0} = 1.05$

$\gamma_{M1} = 1.05$

$\gamma_{M2} = 1.20$

S 235 $\quad f_{yk} = 235$ MPa

$$\frac{f_y}{\gamma_{M0}} = \frac{235}{1.05} = 223.8 \text{ MPa}$$



$$\sigma = \frac{N}{A}$$

T.A. $\quad N \quad \sigma = \frac{N}{A} \quad \sigma \leq \bar{\sigma}$

SLU $\quad N_{Ed} \quad N_{Rd} \quad N_{Ed} \leq N_{Rd}$

N_{Ed}: effetto / design (progett., calc.)

N_{Rd}: resistente

$$N_{Rd} = A \frac{f_y}{\gamma_{M0}} \qquad \text{verifica} \quad N_{Ed} \leq N_{Rd}$$

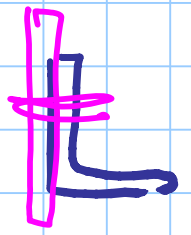
PROGETTO

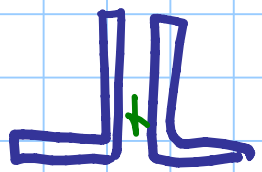
$$N_{Ed} \leq A \frac{f_y}{\gamma_{M0}} \Rightarrow A \geq \frac{N_{Ed}}{f_y / \gamma_{M0}} = \frac{N_{Ed} \gamma_{M0}}{f_y}$$

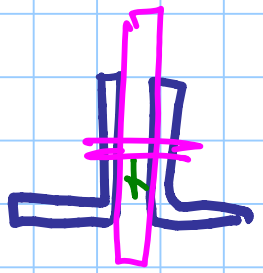
$$A \geq \frac{166.1 \times 10^3}{235/1.05} = 742.1 \text{ mm}^2 = 7.421 \times 10^2 \text{ mm}^2$$

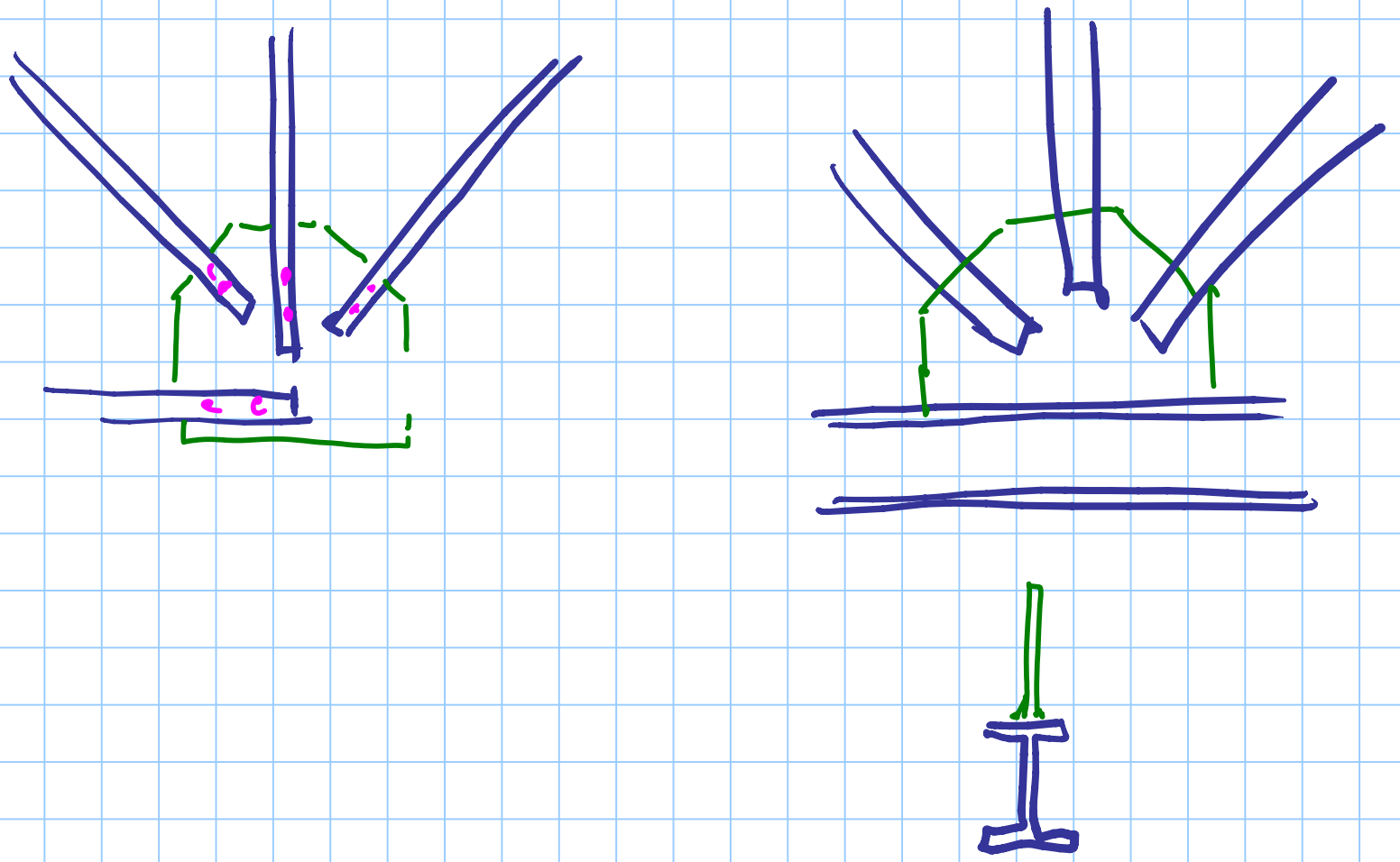
aste Travi poco caricate

aree piccole

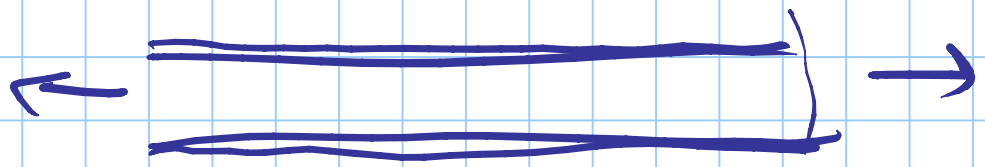




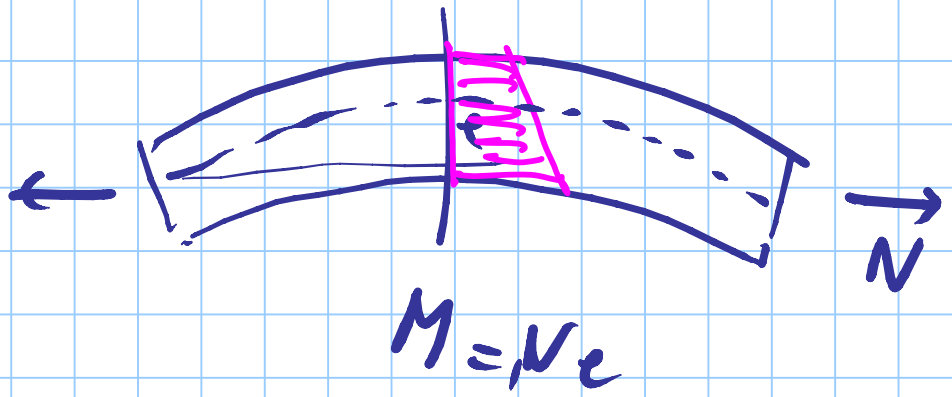




PERFETTO ⟷ IMPERFETTO

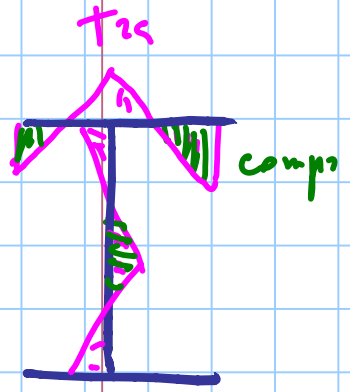


IMPERFEZIONI GEOMERICHE

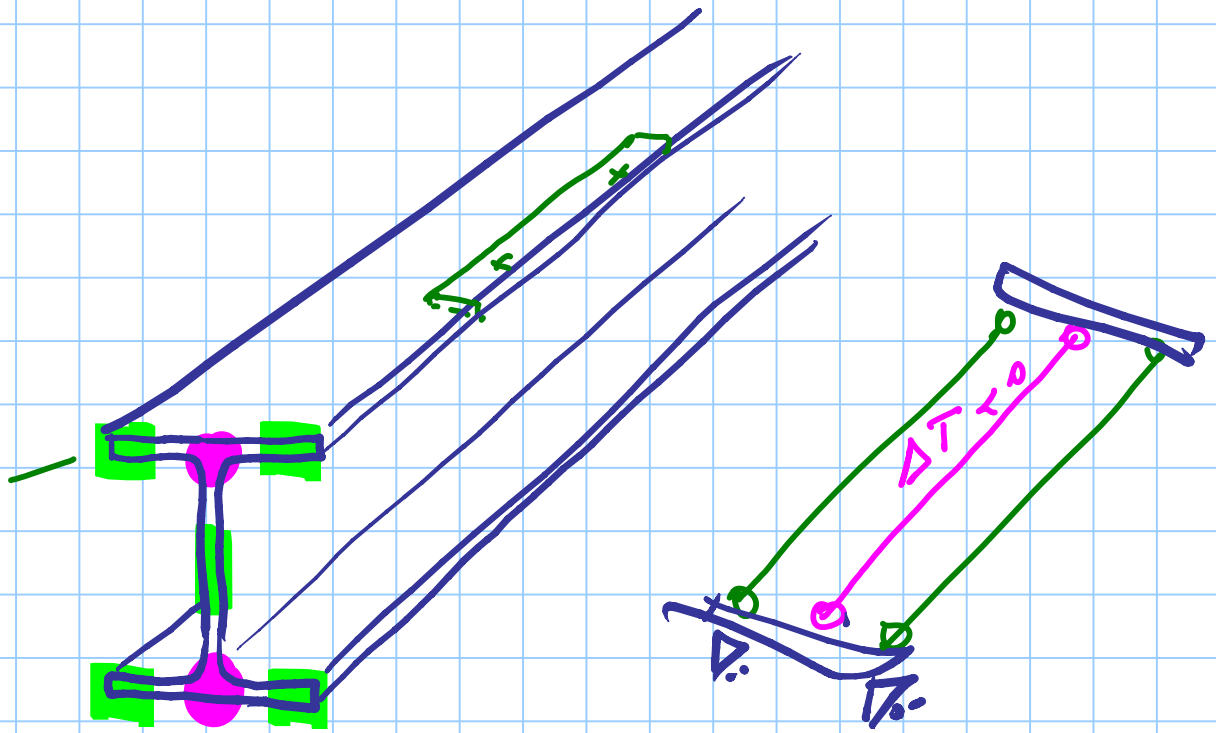


ASSE NON RETTILINEO.

IMPERFEZIONI MECCANICHE



TENSIONI RESIDUE

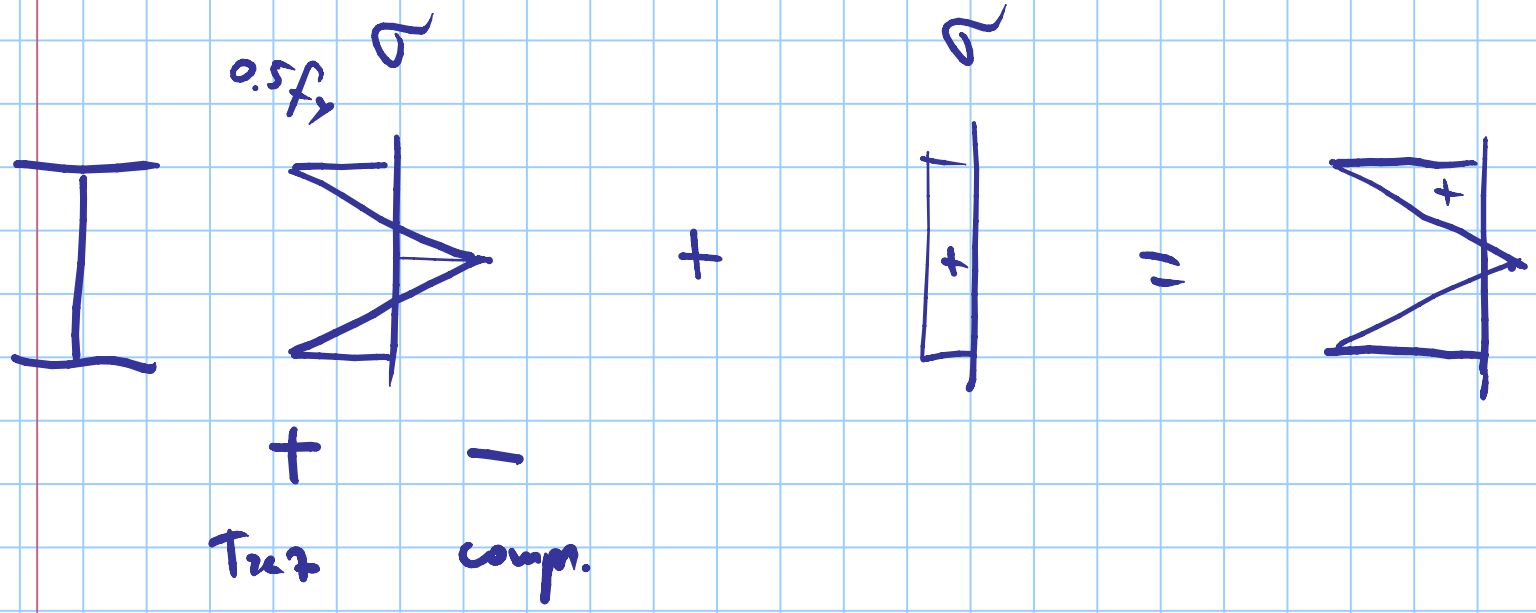


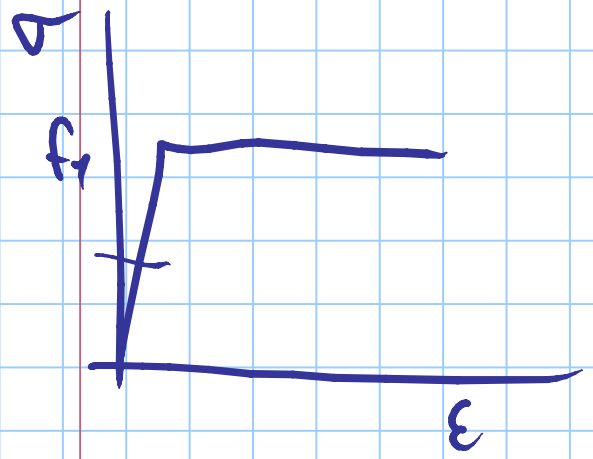
in raffreddo prim.

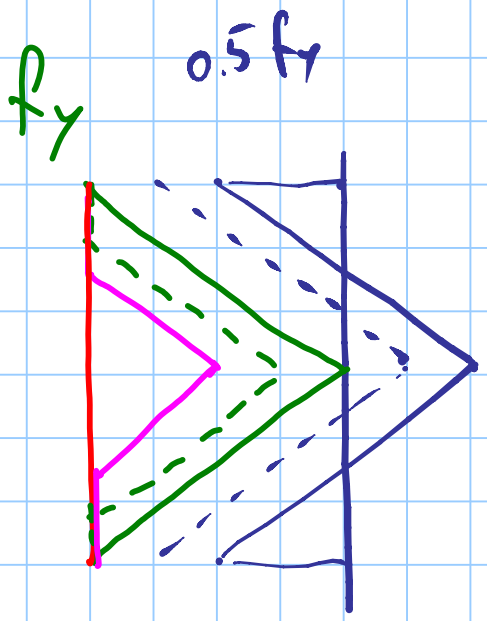
COMPRESSIONE

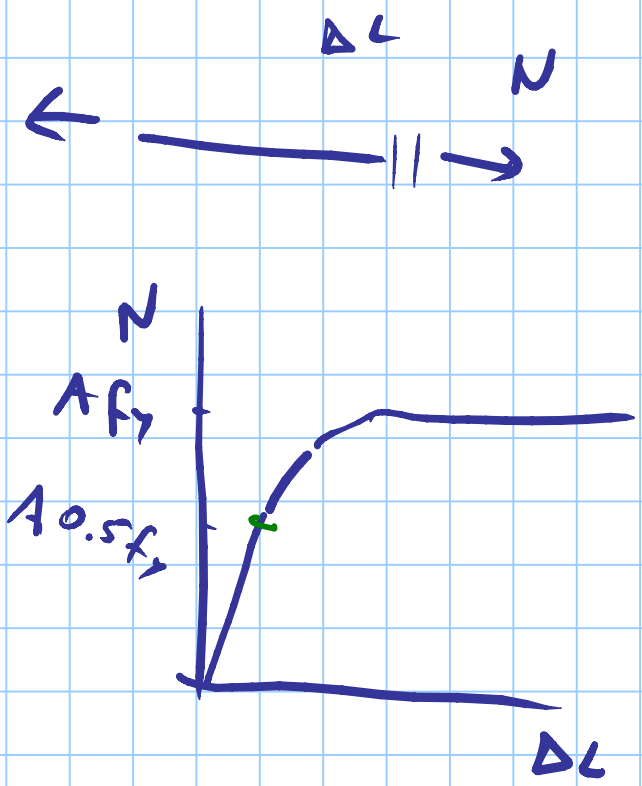
in raffreddo dop.

TRAZIONE


σ
0.5f_y
+
−
Tens
comp.
+
σ
+
=
σ
+


σ
f_y
ε


f_y
$0.5 f_y$


ΔL
N
N
$A f_y$
$A\,0.5 f_y$
ΔL