

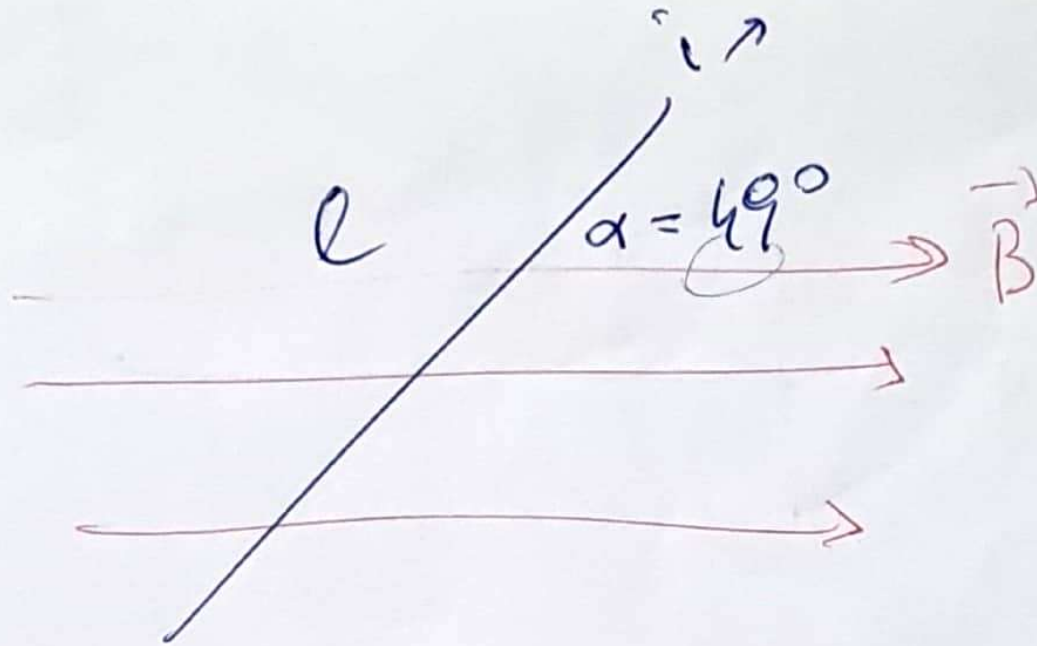
$10^1 \text{ cm}$

$$i = 0,66 \text{ A}$$

$$B = 47 \mu\text{T}$$

$$F = 719 \mu\text{N}$$

$$L = ?$$



$$F = i L B \sin \alpha$$

$$L = \frac{F}{i B \sin \alpha} = \frac{71 \cdot 10^{-6} \text{ N}}{0,66 \text{ A} \cdot 47 \cdot 10^{-6} \frac{\text{N} \cdot \text{s}}{\text{C} \cdot \text{m}} \cdot \sin 49^\circ}$$

$$L = 3,03 \text{ m}$$

## M° 2 SOLENOIDE

$$(517 \text{ m}^2)$$

$N = 1400$  AVVOLGIMENTI PER METRO

$$I = 3,5 \text{ A}$$

all'interno del solenoide  $B = \mu_0 \frac{N}{L} \cdot I = 4\pi \cdot 10^{-7} \frac{\text{T} \cdot \text{m}}{\text{A}} \cdot \frac{1400}{1 \text{ m}} \cdot 3,5 \text{ A}$

$$B_{\text{sol}} = 6,15 \cdot 10^{-3} \text{ T}$$

BOBINA CIRCOLARE

$$N = 50$$

$$A = 1,2 \cdot 10^{-3} \text{ m}^2$$

$$I = 0,5 \text{ A}$$

MOMENTO TORCENTE  $\tau = N I A B \sin \theta$

$$\tau = 50 \cdot 0,5 \text{ A} \cdot 1,2 \cdot 10^{-3} \text{ m}^2 \cdot 6,15 \cdot 10^{-3} \text{ T} \cdot \sin 90^\circ =$$

$$\tau = 1,85 \cdot 10^{-4} \text{ A} \cdot \frac{\text{N} \cdot \cancel{\text{m}}}{\cancel{\text{m}}} \cdot \text{m}^2$$

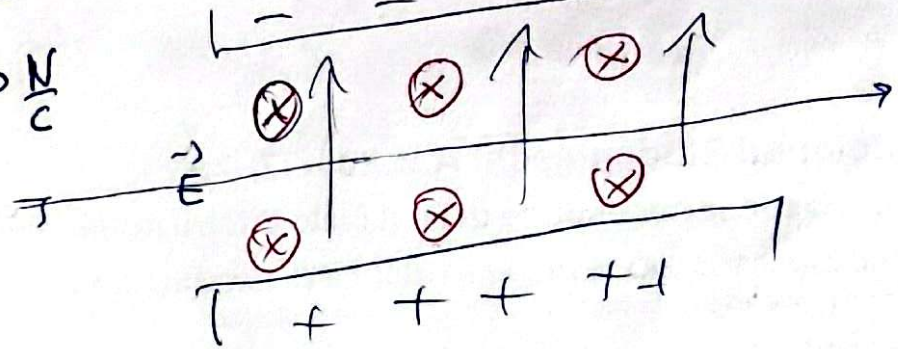
$$\tau = 1,85 \cdot 10^{-4} \text{ N} \cdot \text{m}$$



$\mu 35 \pi$

# SELETTOR DI VELOCITA

$$E = 2470 \frac{N}{C}$$



$$v = 6500 \frac{m}{s}$$

$$v = \frac{E}{B} \rightarrow B = \frac{E}{v} = \frac{2470 \frac{N}{C}}{6500 \frac{m}{s}} = 0,38 T$$

$$q = +4 \cdot 10^{-12} C$$

$$F = 1,9 \cdot 10^{-9} N$$

$$F_{TOT} = F_{EL} + F_{LOR}$$

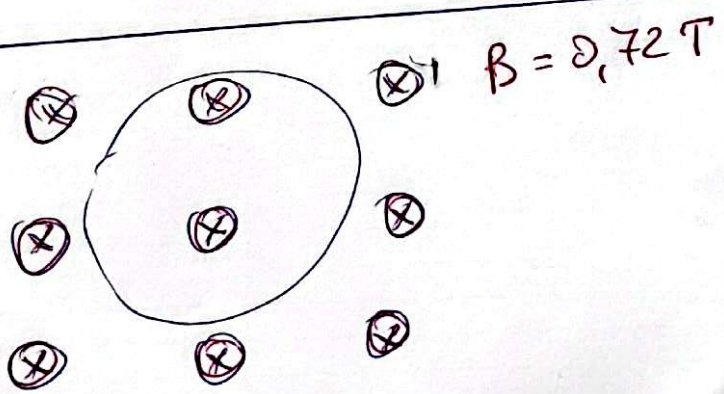
$$F_{LOR} = F_{TOT} - F_{EL}$$

$$q v B = F_{TOT} - q E$$

$$v = \frac{F_{TOT} - q E}{q B} = \frac{1,9 \cdot 10^{-9} N - 4 \cdot 10^{-12} C \cdot 2470 \frac{N}{C}}{4 \cdot 10^{-12} C \cdot 0,38 T} = -5250 \frac{m}{s}$$

$\mu 4 \sin$

$$\frac{q}{m} = 5,7 \cdot 10^8 \frac{C}{kg}$$



$$F_c = q v B$$

$$F_c = m \frac{v^2}{R}$$

$$q v B = m \frac{v^2}{R}$$

$$R = \frac{m}{q} \cdot \frac{v}{B}$$

$$v = \frac{2 \pi R}{T} \rightarrow T = \frac{2 \pi R}{v} = \frac{2 \pi}{v} \left( \frac{m}{q} \cdot \frac{v}{B} \right) = \frac{2 \pi}{5,7 \cdot 10^8 \frac{C}{kg} \cdot 0,72 \frac{N}{C \cdot m}} = 1,53 \cdot 10^{-6} s$$