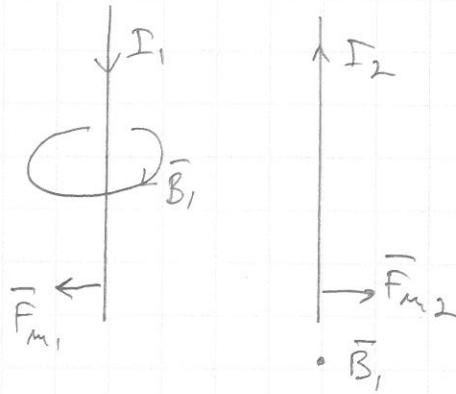
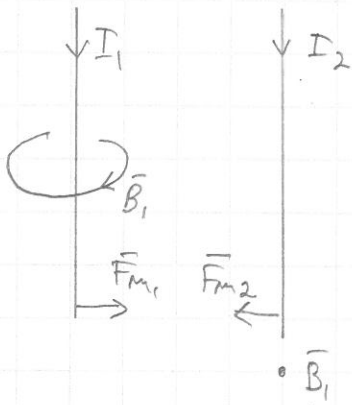


yhdenmuukaisesta vektorilainesta:

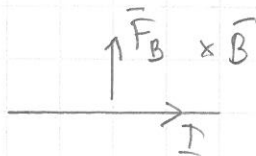


I_1 : oikeellama
mag-kenttä I_2 :
koodalle

I_2 : een koodistun B_1 -kentälle
voima F_{m2}

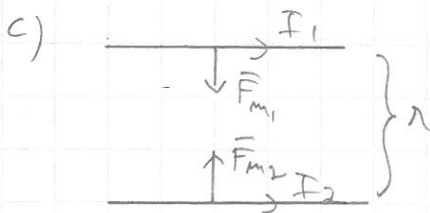
N III: I_1 : een koodistun voima
 $F_{m1} = -F_{m2}$

4.18



a) I oikealle (oikea koodistun voima)

b) $F_B = B I l$ ($I \perp B \Rightarrow \alpha = 90^\circ \Rightarrow \sin \alpha = 1$)
 $\Rightarrow B = \frac{F_B}{I l} = \frac{17 \cdot 10^{-3} \text{ N}}{25 \text{ A} \cdot 0,57 \text{ m}} = 0,001333 \text{ T} \approx 1,3 \text{ mT}$



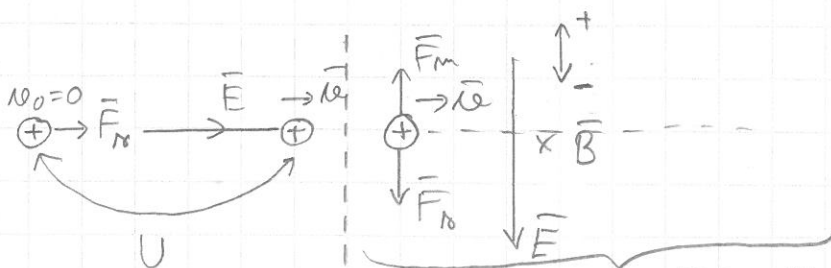
$l = 5,0 \text{ cm}$

maol (8.132): $F_{m1} = F_{m2} = \frac{\mu_0}{2\pi} \frac{I_1 I_2}{l} l$

$\Rightarrow \frac{F_m}{l} = \frac{\mu_0}{2\pi} \frac{I_1 I_2}{l} = \frac{4\pi \cdot 10^{-7} \frac{\text{Vs}}{\text{Am}}}{2\pi} \cdot \frac{(25 \text{ A})^2}{0,050 \text{ m}} = 0,0025 \frac{\text{N}}{\text{m}}$
 (vetovoima)

5, Varausten kiihtymisen liike E- ja B-kentässä

5.9



$U = 42 \text{ kV}$

$B = 270 \text{ mT}$

$m = 6,6 \cdot 10^{-26} \text{ kg}$

$Q = 2e$

Työperiaate:

$W = \Delta E_k \Rightarrow UQ = \frac{1}{2} m v^2 - 0$

$\Rightarrow \frac{2}{m} \sqrt{\frac{2UQ}{m}}$

$\Rightarrow v = \sqrt{\frac{2UQ}{m}}$