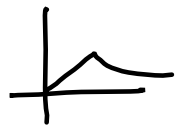


$$\vec{F} = \frac{e_1 e_2}{4\pi\epsilon_0 r^2} \frac{\vec{r}}{|\vec{r}|} \quad \text{took: elektrosta.}$$

$$\int_D \vec{E} d\vec{S} = \frac{1}{\epsilon_0} \sum q_i \quad \text{bloob}$$

polna kroga: $E(r) = \begin{cases} \frac{e}{4\pi\epsilon_0 r^2}; & r \geq R \\ \frac{e r}{4\pi\epsilon_0 R^3}; & r \leq R \end{cases}$



votta kroga: $E(r) = \begin{cases} 0; & r < R \\ \frac{e}{4\pi\epsilon_0 r}; & r \geq R \end{cases}$

$$e = \epsilon_0 \oint_S \vec{E} \cdot \vec{n} dS \quad \vec{F} = e \vec{E}$$

Plošča: $E = \frac{\sigma}{2\epsilon_0}$ $\sigma \dots$ ploščinska gostota
2 plošči (kondenzator) $E = \frac{\sigma}{\epsilon_0}$

$$C = \frac{e}{U} \quad [F = \frac{As}{V}] \quad C = \epsilon_0 \frac{S}{d}$$

$$R = \rho \frac{l}{S} \quad U = RI \quad U = Ed$$

$$W_{pe} = eU \quad P = IU = I^2 R = \frac{U^2}{R}$$

Vzporedna vezava: $R = \sum R_i$ zaporedna: $\frac{1}{R} = \sum \frac{1}{R_i}$

Polnjenje kondenzatorja: $e(t) = CU_g (1 - e^{-\frac{t}{RC}})$

Praznjenje kondenzatorja: $e(t) = CU e^{-\frac{t}{RC}}$

Magnetno polje

$$j_e = \text{rot } \vec{B} = \frac{I}{S}$$

... gostota d. toka

$$\vec{B} = \mu_0 \vec{H} \quad \leftarrow \text{jakost}$$

$$\mu_0 = 4\pi \cdot 10^{-7} \frac{\text{Vs}}{\text{Am}}$$

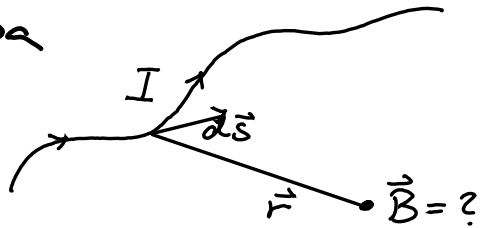
$$I = \frac{1}{\mu_0} \oint \vec{B} d\vec{s}$$

$$B = \frac{\mu_0 I}{2\pi r} \quad \text{ob zici}$$

Biot-Savartova enačba

$$\vec{B} = \frac{\mu_0 I}{4\pi} \int \frac{\vec{r} \times d\vec{s}}{r^3}$$

po zici

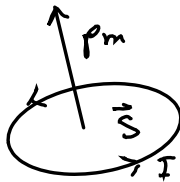


Lorentzova sila: $\vec{F} = e(\vec{E} + \vec{v} \times \vec{B})$

$$W = -\int \vec{F}_e d\vec{s}$$

$$W_e = -e \vec{E} \vec{s} = -\int \vec{E}(\vec{r}) d\vec{s} \\ = -\vec{F}_e \vec{s}$$

$$p_m = I \cdot S$$



$$(\vec{p}_m = NI \vec{s})$$

$$M = \vec{p}_m \cdot \vec{B} = \vec{r} \times \vec{F}_m$$

$$dA = Fr dp = M dp$$

$$\vec{F}_{\text{zice}} = I \vec{l} \times \vec{B}$$

indukcija

$$\Phi_m = \vec{B} \cdot \vec{S} = \int_S \vec{B} \cdot d\vec{S}$$

$$U_i = B \cdot d \cdot v = \frac{d\Phi_m}{dt}$$

$$U_i = (\vec{d} \times \vec{B}) \cdot \vec{v}$$

$$\Phi_m = LI$$

$$L = \mu_0 N^2 S / l$$

Φ_m hoze ostati isti

$$M = J\alpha$$

$$[T] = \left[\frac{Ns}{C_m} \right] = \left[\frac{kg}{As^2} \right] = \left[\frac{N}{Am} \right] = \left[\frac{J}{Am^2} \right] = \left[\frac{Vs}{m^2} \right]$$

$$[V] = \left[\frac{Nm}{As} \right] = \left[\frac{W}{A} \right]$$

$$[N] = \left[\frac{kgm}{s^2} \right]$$

$$[J] = [Nm]$$

$$[W] = \left[\frac{Nm}{s} \right] = \left[\frac{J}{s} \right]$$

$$[x] = \left[\frac{Nm}{A^2s} \right] = \left[\frac{V}{A} \right]$$

$$[F] = \left[\frac{A^2s^2}{Nm} \right] = \left[\frac{A}{V}s \right]$$

$$[H] = \left[\frac{Nm}{A^2} \right] = \left[\frac{V}{A}s \right]$$

$$\mu: 10^{-6}$$

$$n: 10^{-9}$$