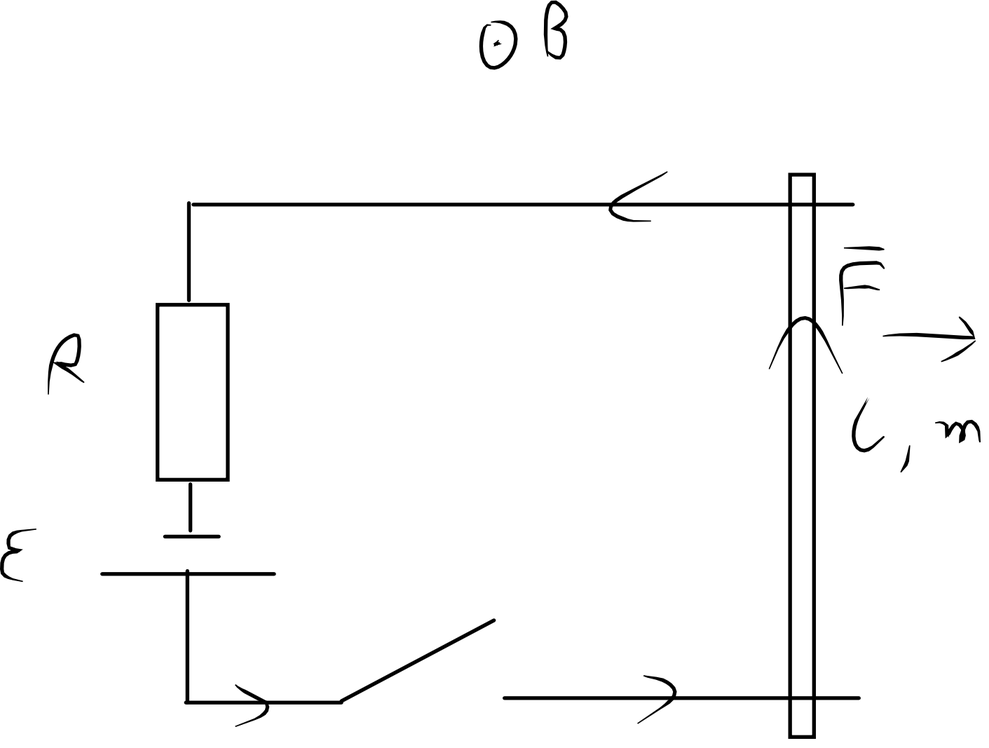
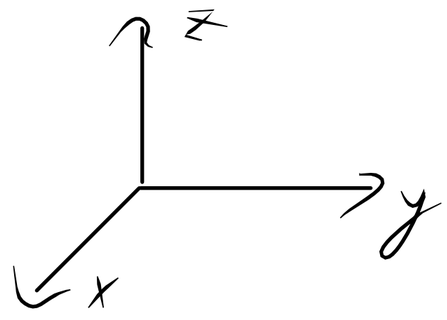


$$d\phi_B = B l dy$$

$$\varepsilon_{ind} + \varepsilon = I R$$

$$\varepsilon_{ind} = -\frac{d\phi_B}{dt} = -Blv$$

$$I = \frac{\varepsilon - Blv}{R}$$



Sila delatuje na popreclej

$$\dot{v} m = F = I \bar{l} \times \bar{B} = I l B \hat{e}_z \times \hat{e}_x = I l B \hat{e}_y$$

$$\dot{v} = \frac{\varepsilon - Blv}{Rm} l B$$

$$v = A e^{\lambda t}$$

RUR

$$\dot{v} + \frac{B^2 l^2}{Rm} v = \frac{\varepsilon l B}{Rm}$$

$$A \lambda e^{\lambda t} + A \frac{B^2 l^2}{Rm} e^{\lambda t} = 0$$

$$\lambda = -\frac{B^2 l^2}{Rm}$$

$$v = A(t) e^{-\frac{B^2 l^2}{Rm} t}$$

$$\dot{v} = \dot{A}(t) e^{-\frac{B^2 l^2}{Rm} t} - A(t) e^{-\frac{B^2 l^2}{Rm} t}$$

RSRN

$$\dot{A}(t) e^{-\frac{B^2 l^2}{Rm} t} - A(t) e^{-\frac{B^2 l^2}{Rm} t} + \frac{B^2 l^2}{Rm} A(t) e^{-\frac{B^2 l^2}{Rm} t} = \frac{\varepsilon l B}{Rm}$$

$$\dot{A}(t) = \frac{\varepsilon l B}{Rm} e^{\frac{B^2 l^2}{Rm} t}$$

$$A(t) = \frac{\varepsilon}{Bl} e^{\frac{B^2 l^2}{Rm} t} + C$$

$$v(t) = \left(\frac{\varepsilon}{Bl} e^{\frac{B^2 l^2}{Rm} t} + C \right) e^{-\frac{B^2 l^2}{Rm} t}$$

$$v(0) = 0 \Rightarrow C = -\frac{\varepsilon}{Bl}$$

$$v(t) = \frac{\varepsilon}{Bl} \left(1 - e^{-\frac{B^2 l^2}{Rm} t} \right)$$

$$I = \frac{\varepsilon}{R} e^{-\frac{B^2 l^2}{Rm} t}$$