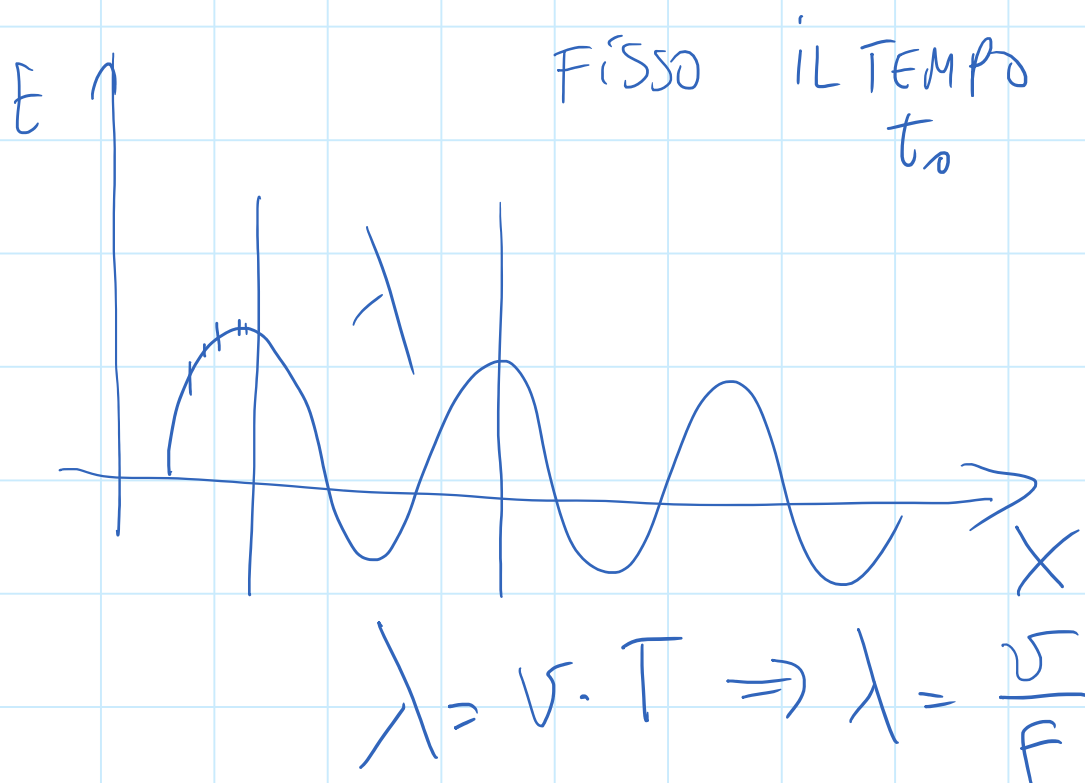


8 Marzo 2017

08 March 2017 15:20



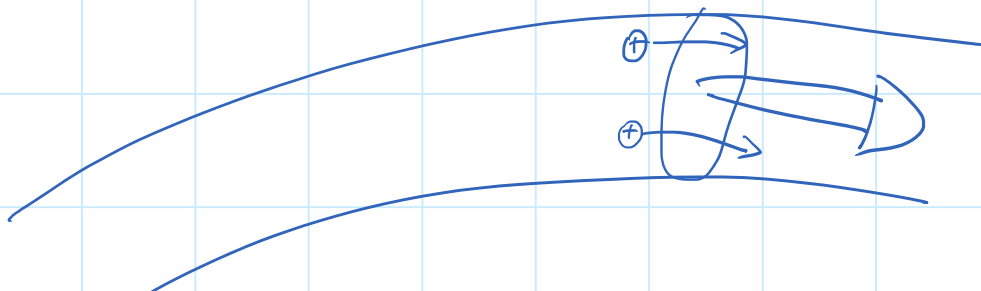
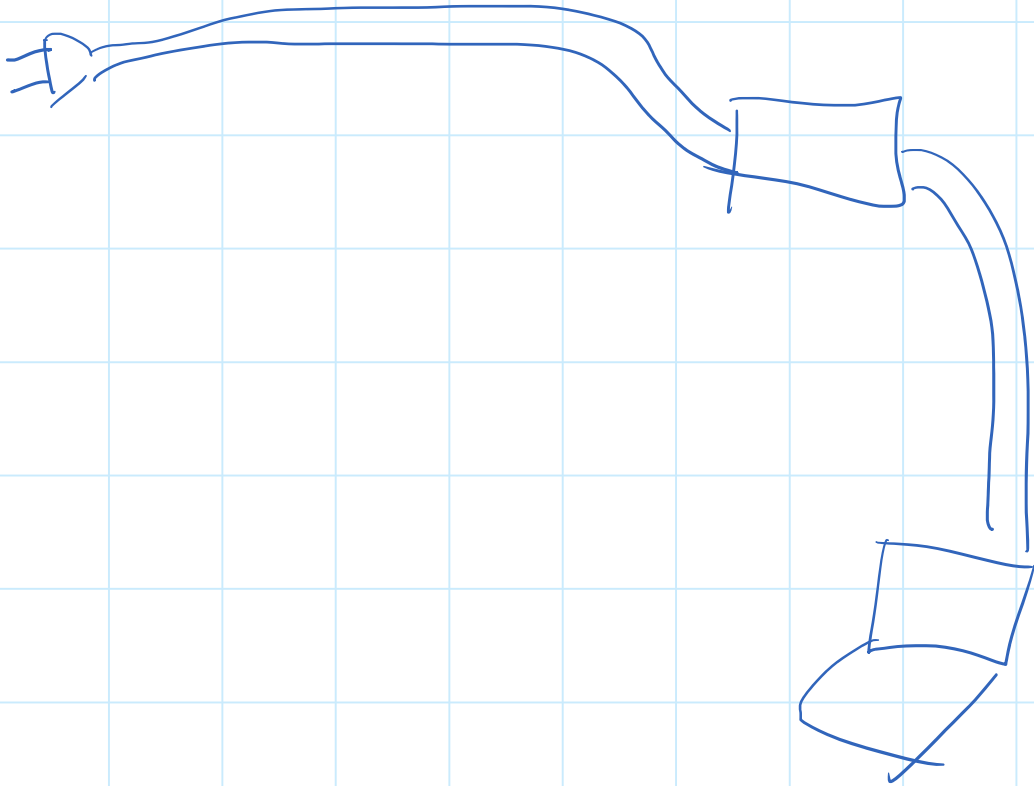
$$\lambda = \frac{3 \cdot 10^8 \text{ [m]}}{f}$$

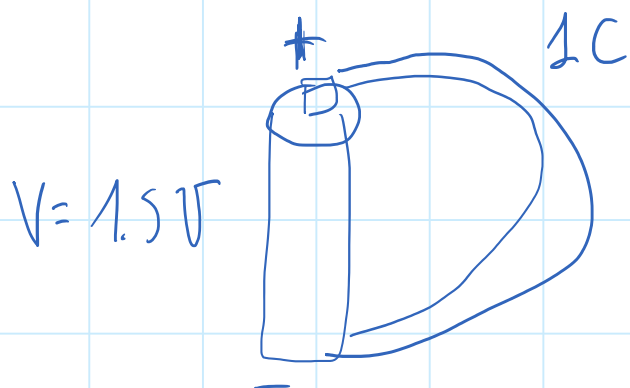
$$2 = \frac{3 \cdot 10^8}{\lambda} \Rightarrow f = 1.5 \cdot 10^8$$

150 MHz

$$\lambda(50 \text{ Hz}) = \frac{3 \cdot 10^8}{50} = 0.6 \cdot 10^7$$

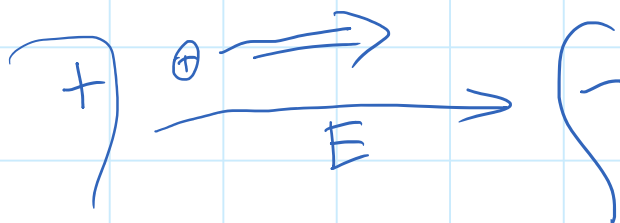
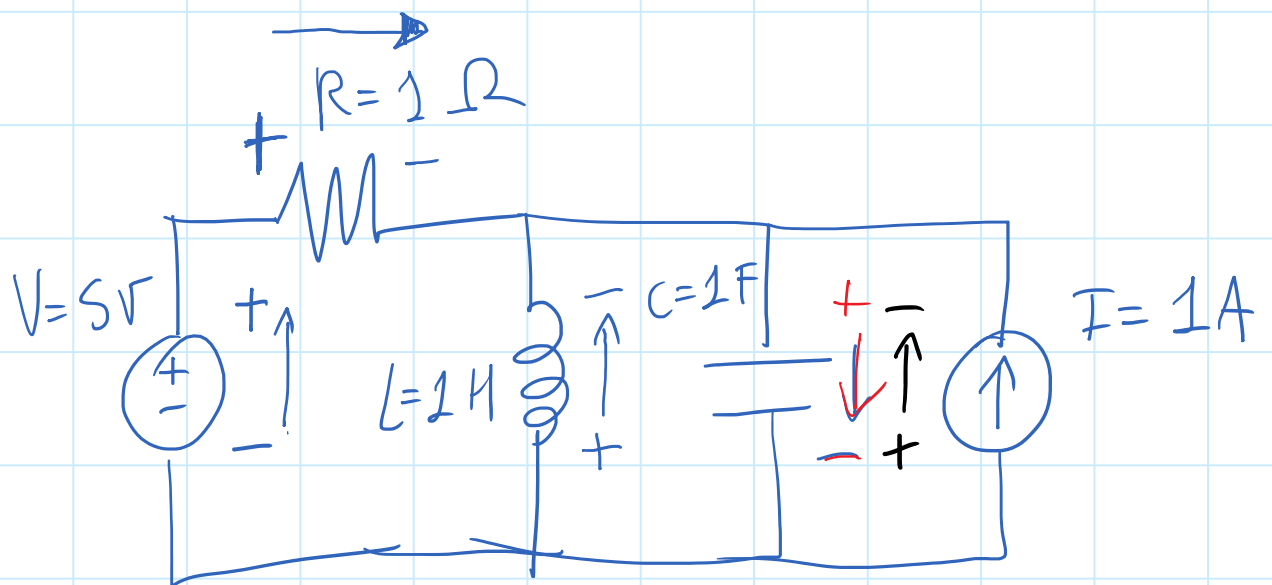
6000 Km

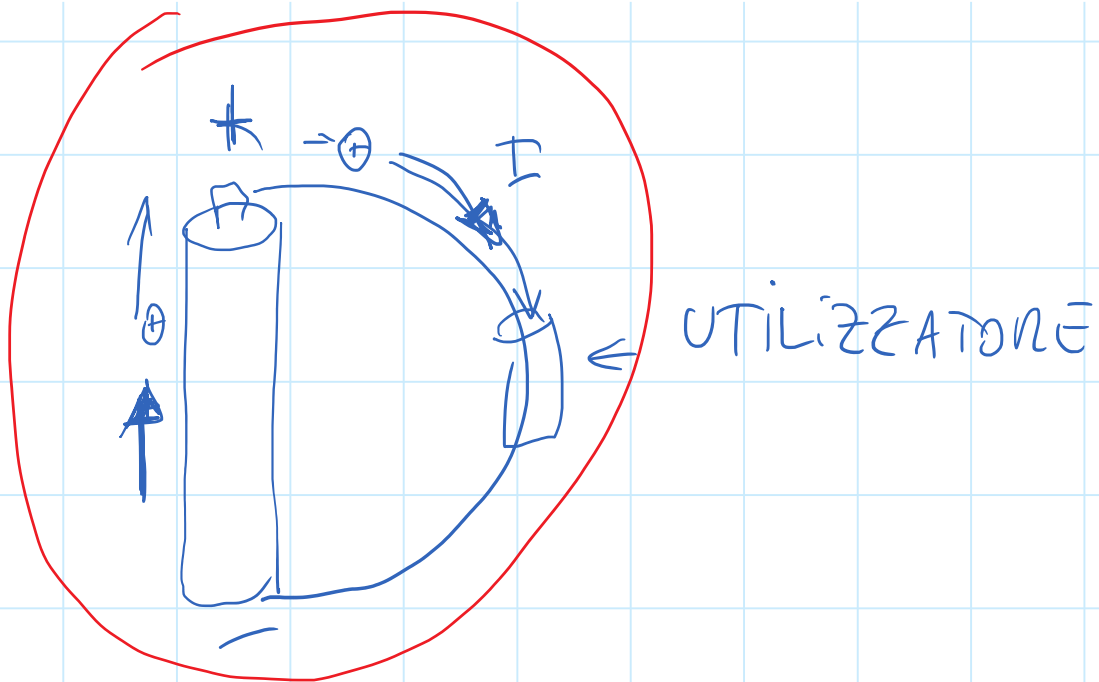




$$V \cdot C = 1.5 J$$

$$\begin{matrix} -5V \\ -0.1A \end{matrix}$$





$$V(t) = R \cdot i(t)$$

\uparrow
resistenza $[\Omega]$ ohm

$$i(t) = \frac{1}{R} V(t) = G V(t)$$

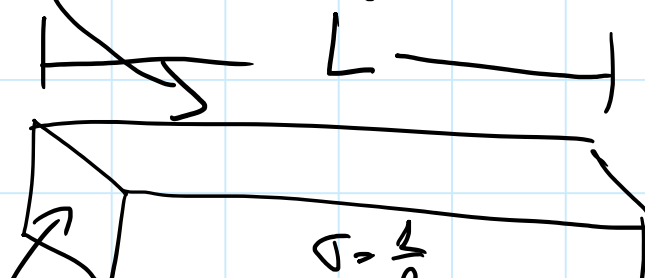
\downarrow
conduttanza $[\Omega^{-1}]$
mho

$$\Omega^{-1} \equiv S \text{ (Siemens)}$$

$$\vec{J} = \sigma \vec{E}$$

$\int_S \vec{J} = I$

$$\frac{1}{\sigma} = \rho$$



$$V = R \cdot I$$



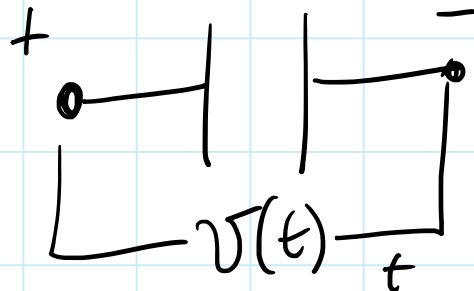
$$V(t) = R(t) i(t)$$

$$q(t) = C \cdot v(t)$$

$$[C] = [F] \cdot [V]$$

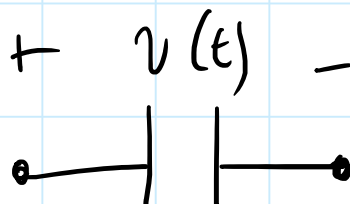
$$[F] \doteq \frac{[C]}{[V]}$$

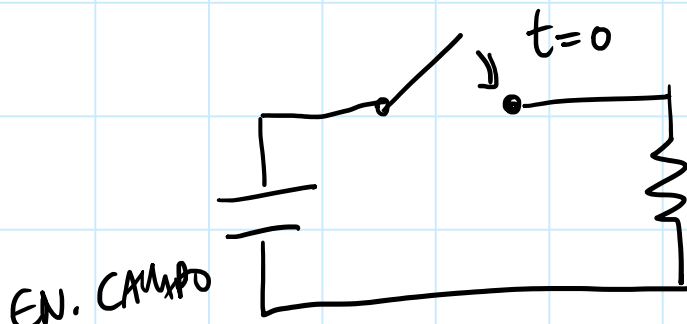
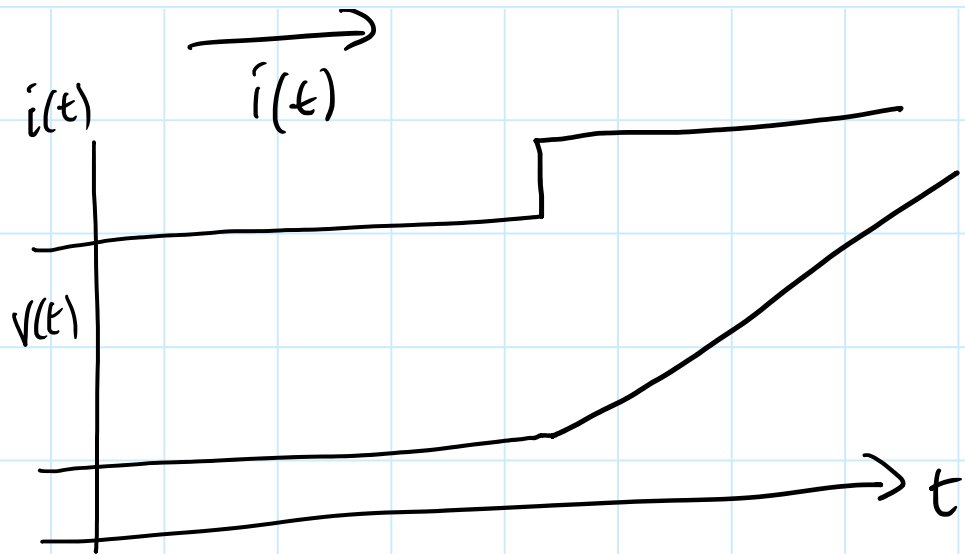
$$i(t) = C \cdot \frac{dv(t)}{dt}$$



$$v(t) = \frac{1}{C} \int_{-\infty}^t i(\tau) d\tau$$

$$= v(t_0) + \frac{1}{C} \int_{t_0}^t i(\tau) d\tau$$





$$V_C(t=0^-) = V_C(t=0^+)$$

EN. CAMPO EL

$$Q = C \cdot V \Rightarrow$$

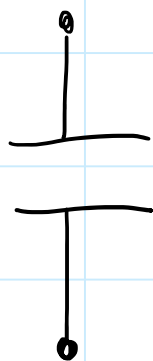
$$i(t) = C \frac{dV(t)}{dt}$$

$$\Phi_B = L \cdot I \Rightarrow$$

$$v(t) = L \frac{di(t)}{dt}$$

EN. CAMPO MAGNETICO

$$V(t) = L \frac{di(t)}{dt}$$



$$i(t) = C \frac{dV(t)}{dt} \Rightarrow$$

REGIME STAZIONARIO

$$V(t) = V_0$$



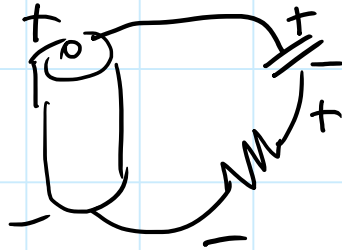
•



$$\downarrow i=0$$

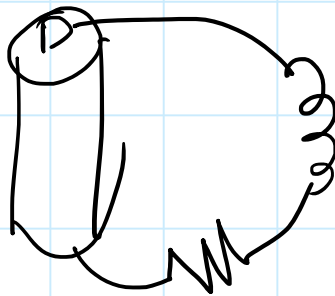
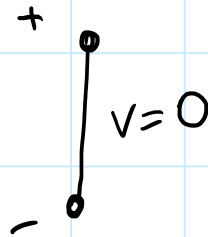
circuit open

$$\Downarrow \\ i(t)=0$$



$$\downarrow i(t)=I$$

$$v(t) = L \frac{di(t)}{dt} = 0$$

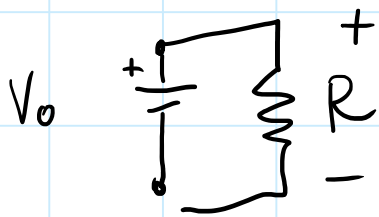
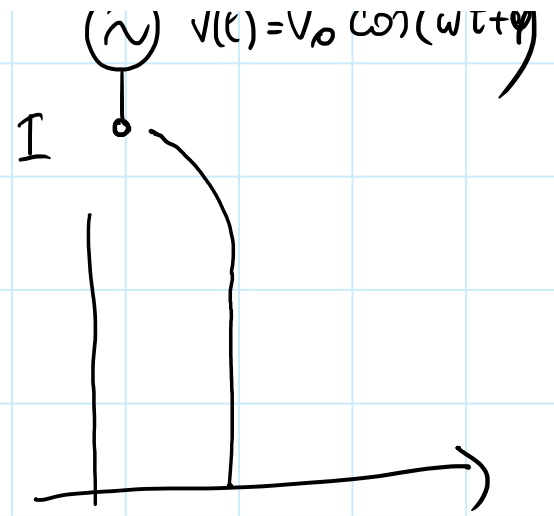
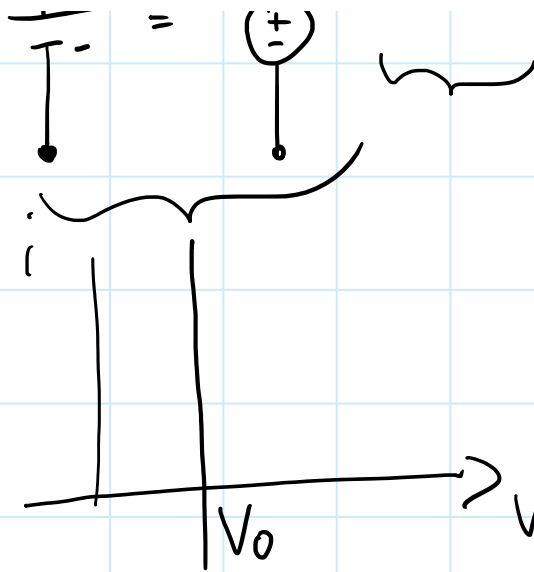


$\parallel 0$



$$\frac{+}{-} = \text{⊕} = v(t) = V_0$$

$$\text{⊕} \sim v(t) = V_0 \cos(\omega t + \varphi)$$

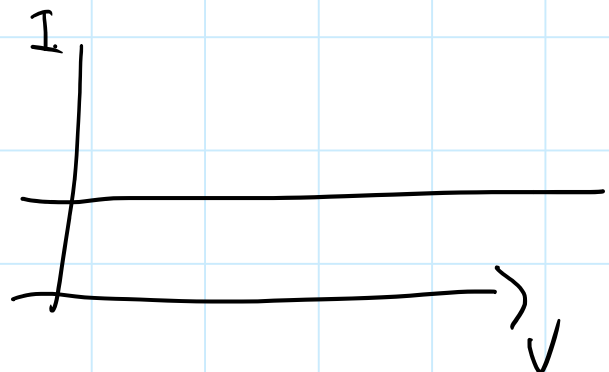
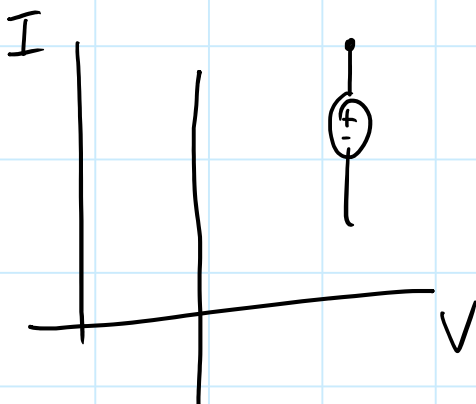
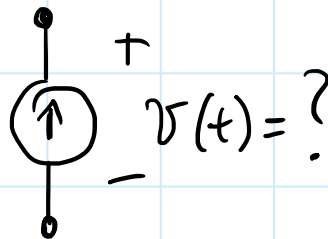


$$V_R = V_0 \Rightarrow I_R = \frac{V_0}{R}$$

$$P_R = V_R \cdot I_R = \left(\frac{V_0}{R} \right)^2$$

POTENZA ENDOGATA
GENERATORE

$$\begin{aligned} i(t) &= i_0(t) \\ i(t) &= I_0 \end{aligned}$$



$$\uparrow \begin{array}{c} \text{Circuit diagram of a current source } I_0 \text{ in parallel with a resistor } R. \\ \downarrow I_n = I_0 \Rightarrow P_n = I_0^2 R \end{array}$$