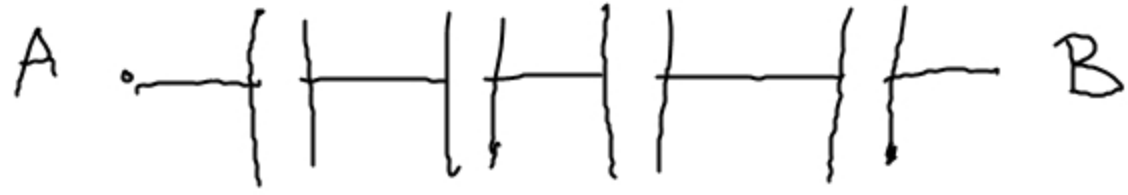
CONDENSATORI IN SERIE



CONDENSATORI IN SERIE

$$\frac{1}{C_{eq}} = \frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots$$

$$C_{eq} = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3} + \dots}$$

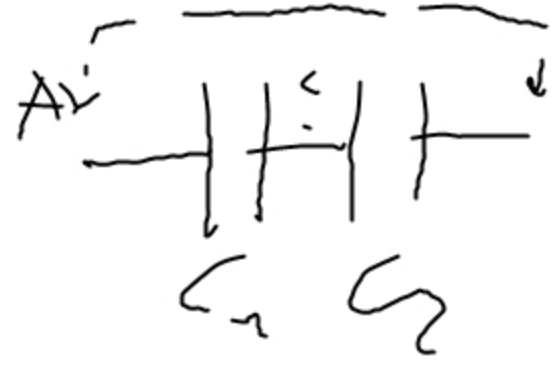
$$C = \frac{Q}{V}$$

$$C = \frac{\Delta Q}{\Delta V}$$

$$I = \frac{\Delta Q}{\Delta t} \equiv C \cdot \frac{\Delta V}{\Delta t}$$

$$V = R \cdot I \qquad I = \frac{\Delta V}{\Delta t} \cdot C$$

DUE CONDENSATORI IN SERIE



$V_{AB} = V_{AC} + V_{CB}$

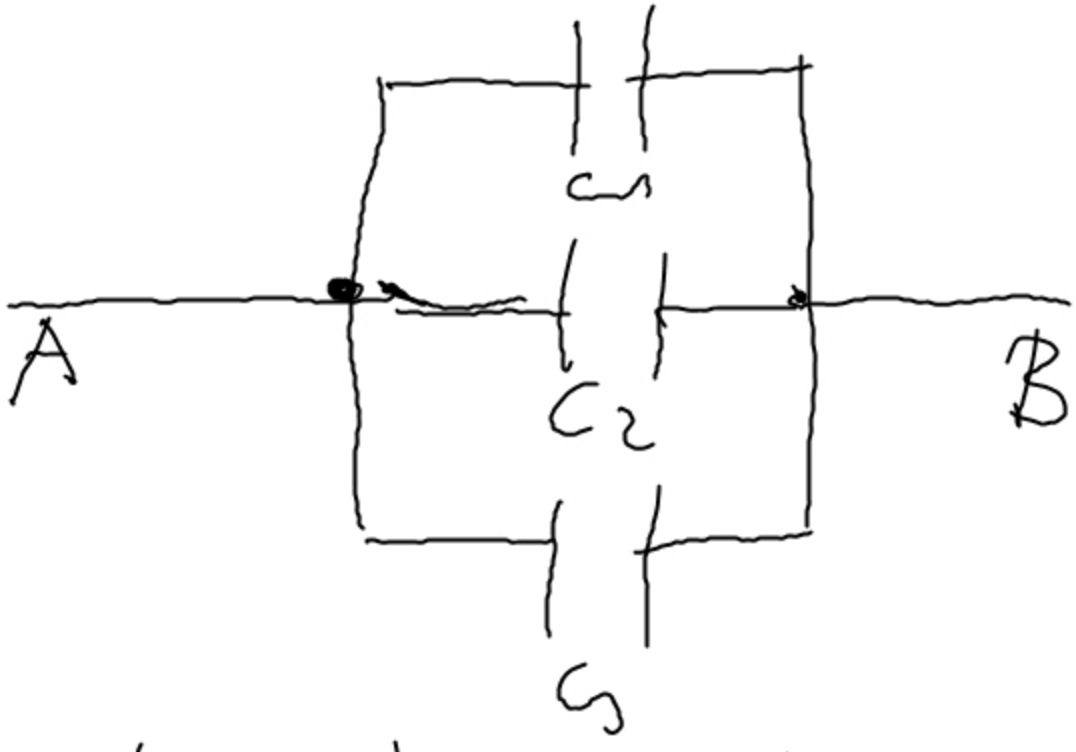
$$\frac{1}{C_{TOT}} = \frac{1}{C_1} + \frac{1}{C_2} \Rightarrow$$

$$\Rightarrow C_{TOT} = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2}} = \frac{C_1 \cdot C_2}{C_1 + C_2}$$

C_{TOT} = CAPACITÀ TOTALE

CONDENSATORI IN PARALLELO

$$C_{TOT} = C_{eq} = C_1 + C_2 + C_3$$



$$V_{AB} = V_{C_1} = V_{C_2} = V_{C_3}$$

es: Tre condensatori in parallelo

$C_1 = C_2 = C_3 = 10\,\mu F$

Calcolare C_{TOT}

$$C_{TOT} = 10\,\mu F + 10\,\mu F + 10\,\mu F = 30\,\mu F$$

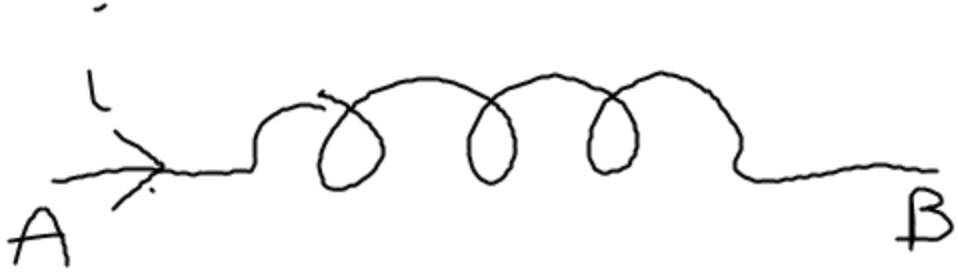
es: Tre condensatori in serie

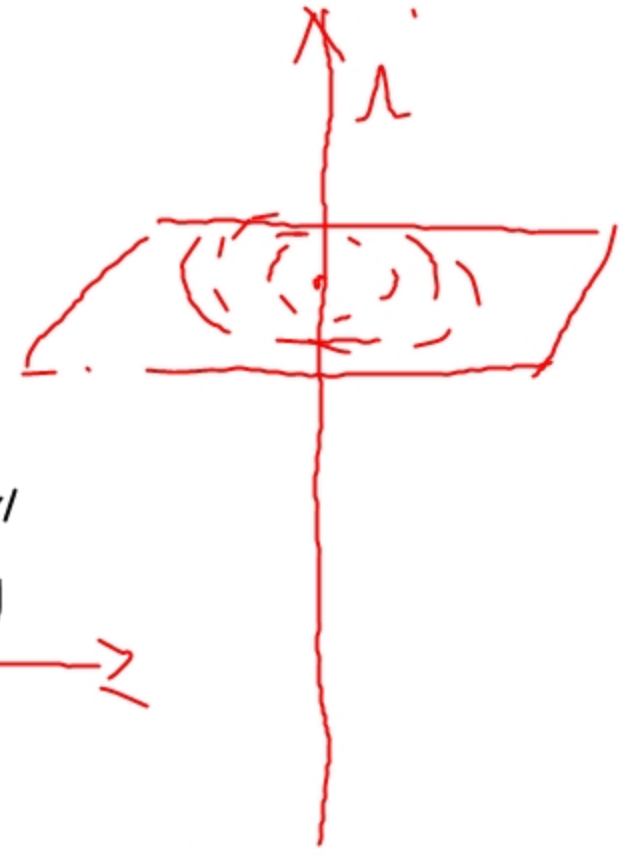
$C_1 = C_1 = C_3 = 10\,\mu F$

$$C_{TOT} = \frac{1}{\frac{1}{C_1} + \frac{1}{C_2} + \frac{1}{C_3}} = \frac{1}{\frac{1}{10\cdot10^{-6}} + \frac{1}{10\cdot10^{-6}} + \frac{1}{10\cdot10^{-6}}} = \frac{1}{\frac{3}{10\cdot10^{-6}}}$$

$$= \frac{10}{3}\cdot10^{-6} = 3{,}3\,\mu F$$

L'INDUTTORE





INDUTTANZA

$$L = \frac{\varphi}{I} \rightarrow [\text{HENRY}]$$

$$V = \frac{\Delta\varphi}{\Delta t} = L \cdot \frac{\Delta I}{\Delta t}$$

φ = flusso del campo magnetico concatenato con la bobina su cui circola corrente

INDUTTANZE IN SERIE

$$L_{TOT} = L_1 + L_2 + L_3$$

INDUTTANZE IN PARALLELO

$$\frac{1}{L_{TOT}} = \frac{1}{\frac{1}{L_1} + \frac{1}{L_2} + \frac{1}{L_3}}$$