

Settimana: 14

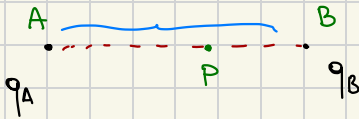
Argomenti:

Materia: Fisica

Classe: 5F

Data: 19/01/26

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$$q_A = 3,68 \cdot 10^{-8} \text{ C}$$

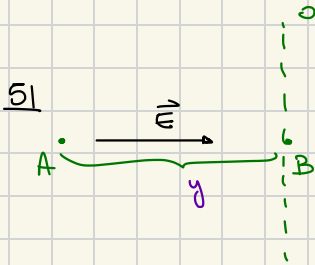
$$q_B = -5,74 \cdot 10^{-9} \text{ C}$$

$$d = 80 \text{ cm} = 0,8 \text{ m}$$

$$AP = 50 \text{ cm} = 0,5 \text{ m}$$

$$V_P = ?$$

$$V_P = \frac{q_A}{4\pi\epsilon_0 AP} + \frac{q_B}{4\pi\epsilon_0 (d-AP)} \approx 490 \text{ V}$$



$$\Delta V_{AB} = E \cdot (y_B - y_A) = -E y = -2,4 \cdot 10^4 \text{ V}$$

$$E = 8 \cdot 10^4 \text{ N/C}$$

$$AB = 30 \text{ cm}$$

$$q = 3 \cdot 10^{-10} \text{ C} \text{ si sposta da A a B.}$$

$$\Delta V_{AB} = ?$$

$$W_{AB} = ?$$

$$\Delta V_{AB} = E \cdot AB = 2,4 \cdot 10^4 \text{ V}$$

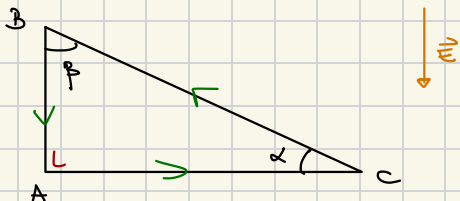
$$\Delta V_{AB} = \frac{\Delta U_{AB}}{q} = -\frac{W_{AB}}{q}$$

$$\Rightarrow W_{AB} = -\Delta V_{AB} \cdot q \approx 7,2 \cdot 10^{-6} \text{ J}$$

\vec{E} fa lavoro motore cioè q è aiutato da \vec{E} a spostarsi

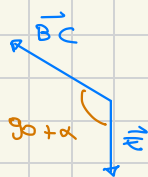
\Rightarrow Di conseguenza ΔV_{AB} Deve essere Negativa $\Delta V_{AB} = -2,4 \cdot 10^4 \text{ V}$

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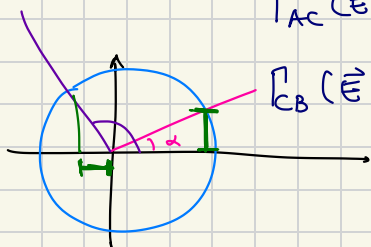
$$\Gamma_{ABC}(\vec{E}) = ?$$

$$\text{Totale} = 0$$



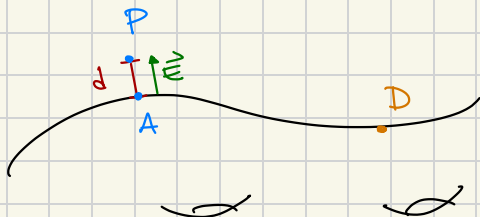
Nei vari tratti $\Gamma_{AB}(\vec{E}) = \vec{E} \cdot \vec{AB} = E \cdot AB \cdot \cos 0 = E \cdot AB$

$$\Gamma_{AC}(\vec{E}) = \vec{E} \cdot \vec{AC} = E \cdot AC \cdot \cos 90 = 0$$



$$\begin{aligned} \Gamma_{BC}(\vec{E}) &= \vec{E} \cdot \vec{CB} = E \cdot CB \cdot \cos(90 + \alpha) = \\ &= E \cdot CB \cdot (-\sin \alpha) \\ &= -E \cdot CB \sin \alpha = -E \cdot AB \end{aligned}$$

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$$d = 2 \text{ mm} = 2 \cdot 10^{-3} \text{ m}$$

$$V_P = 100 \text{ V}$$

$$V_A = 103 \text{ V}$$

$$V_D = ?$$

Quanto vale σ approssim.?

$$\Rightarrow V_D = V_A \text{ poiché conduttore}$$

$$\Rightarrow E = \frac{|\sigma|}{\epsilon_0} \quad \text{Dato che } d \text{ molto piccola suppongo } \vec{E} \text{ costante tra A e P.}$$

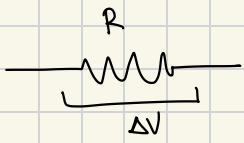
$$\begin{aligned} \text{Di conseguenza } \Delta V &= E y \quad \leadsto \quad V_A - V_P = E \cdot d \\ &\quad \leadsto \quad E = \frac{V_A - V_P}{d} \end{aligned}$$

$$|\sigma| = \frac{\Delta V}{d} \cdot \epsilon_0$$

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$$R = 2,0 \cdot 10^6 \Omega$$

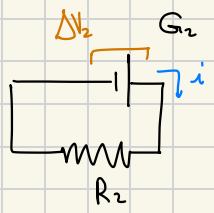
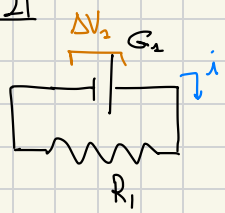
$$\Delta V = 5 \cdot 10^2 V$$



$$i = ?$$

$$\Delta V = i R \rightsquigarrow i = \frac{\Delta V}{R}$$

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$$\alpha R_1 = R_2 \quad \alpha \in \mathbb{R}^+$$

stesse i

Che relazione c'è tra $\Delta V_1, \Delta V_2$

$$\Delta V_1 = i R_1$$

$$\Delta V_2 = i R_2$$

$$\frac{\Delta V_1}{R_1} = i$$

$$i = \frac{\Delta V_2}{R_2}$$

$$\rightsquigarrow \Delta V_1 \cdot R_2 = \Delta V_2 \cdot R_1$$

$$\Delta V_1 \cdot \cancel{\alpha R_1} = \Delta V_2 \cdot \cancel{R_1}$$

$$\boxed{\alpha \Delta V_1 = \Delta V_2}$$