

Settimana: 14

Argomenti:

Materia: Fisica

Classe: 5F

Data: 19/01/26

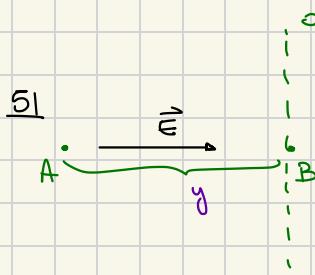
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$$q_A = 3,68 \cdot 10^{-8} \text{ C}$$
$$q_B = -5,74 \cdot 10^{-9} \text{ C}$$
$$d = 80 \text{ cm} = 0,8 \text{ m}$$
$$AP = 50 \text{ cm} = 0,5 \text{ m}$$

$$V_p = ?$$

$$V_p = \frac{q_A}{4\pi\epsilon_0 AP} + \frac{q_B}{4\pi\epsilon_0 (d-AP)} \approx 190 \text{ V}$$



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

$$E = 8 \cdot 10^4 \text{ N/C}$$
$$AB = 30 \text{ cm}$$
$$q = 3 \cdot 10^{-10} \text{ C} \quad \text{si sposta}$$

da A a B.

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

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

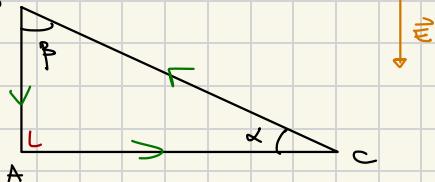
$$\Delta V_{AB} = \frac{\Delta U_{AB}}{q} = - \frac{W_{AB}}{q}$$

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

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

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

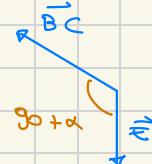
68



E

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

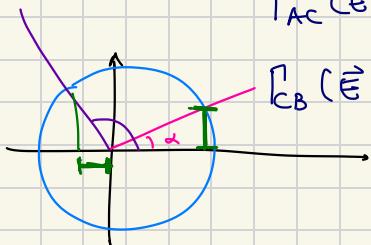
Totale = 0



Nei vari tratti:

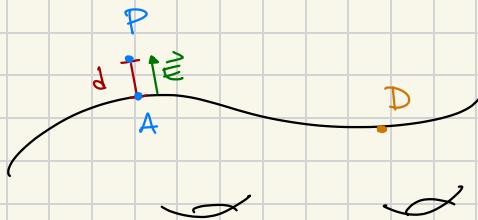
$$\Gamma_{AB}(\vec{E}) = \vec{E} \cdot \vec{AB} = E \cdot AB \cdot \cos 0^\circ = E \cdot AB$$

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



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

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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 D' approssim?

$\Rightarrow V_D = V_A$ poiché conduttore

$\Rightarrow E = \frac{|V|}{d}$ Dato che d molto piccole suppongo E costante tra A e P.

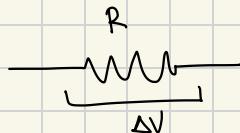
Di conseguenza $\Delta V = E y \Rightarrow V_A - V_p = E \cdot d$

$$E = \frac{V_A - V_p}{d}$$

$$|V| = \frac{\Delta V}{d} \cdot E_0$$

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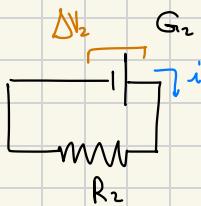
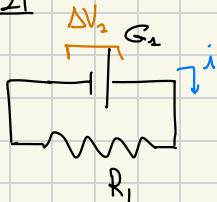
$$R = 2,0 \cdot 10^6 \Omega$$
$$\Delta V = 5 \cdot 10^2 V$$



$$i = ?$$

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

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

Stesse i

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

$$\Delta V_1 = i R_1$$

$$\frac{\Delta V_2}{R_1} = i$$

$$\Delta V_2 = i R_2$$

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

$$\rightsquigarrow \Delta V_1 \cdot R_2 = \Delta V_2 \cdot R_1$$
$$\Delta V_1 \cdot \cancel{R_1} = \Delta V_2 \cdot \cancel{R_1}$$

$$\Delta V_1 = \Delta V_2$$