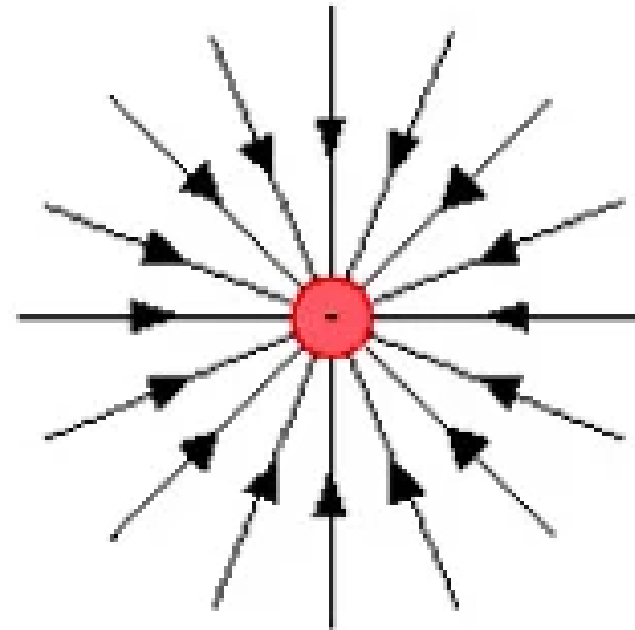
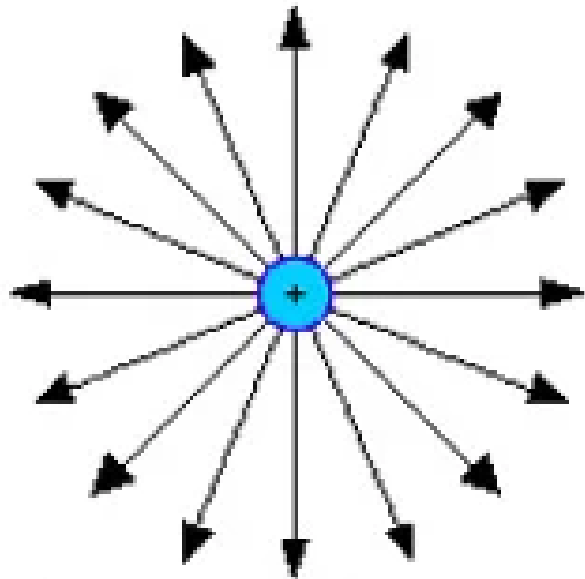


Energia Potencial Elétrica – Potencial Elétrico

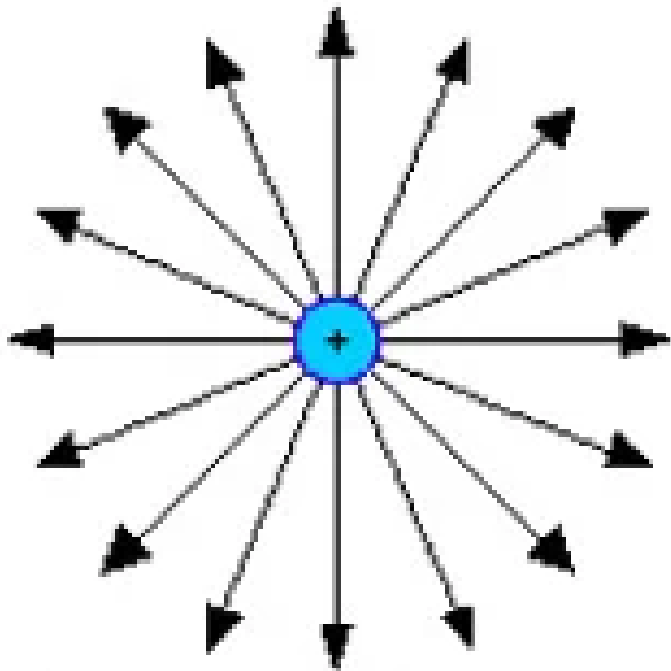
Profº. André Astro
Física

O que você já sabe!



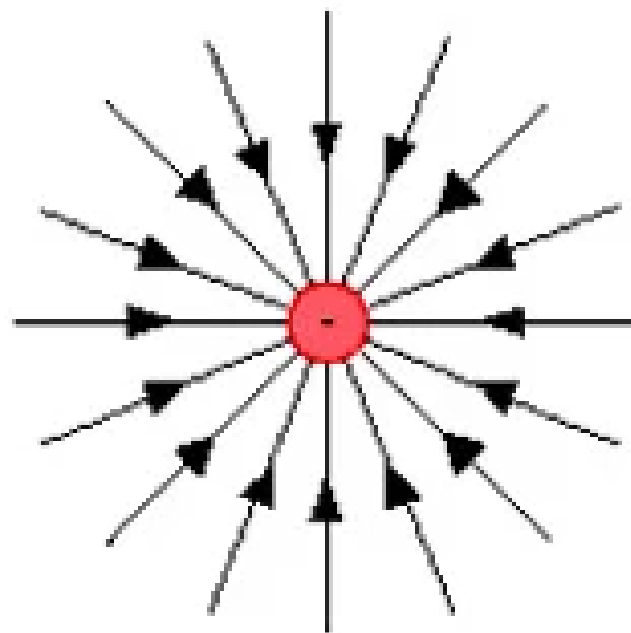
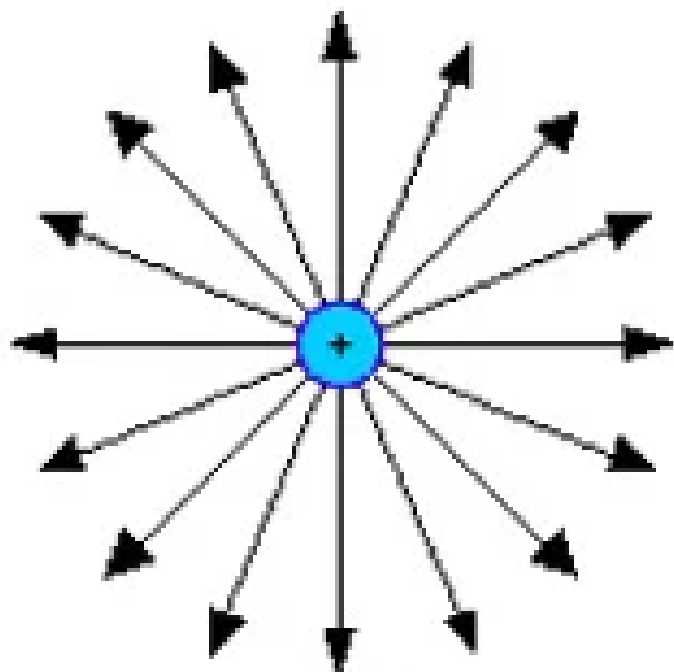
$$\vec{F}_e = q \cdot \vec{E} \quad \leftarrow \quad \vec{E} = \frac{\vec{F}}{q} \quad \longrightarrow \quad E = k_0 \cdot \frac{|Q|}{d^2}$$

O que você já sabe!



$$\vec{F}_e = q \cdot \vec{E} \quad \longleftarrow \quad \vec{E} = \frac{\vec{F}}{q} \quad \longrightarrow \quad E = k_0 \cdot \frac{|Q|}{d^2}$$

Potencial Eléctrico

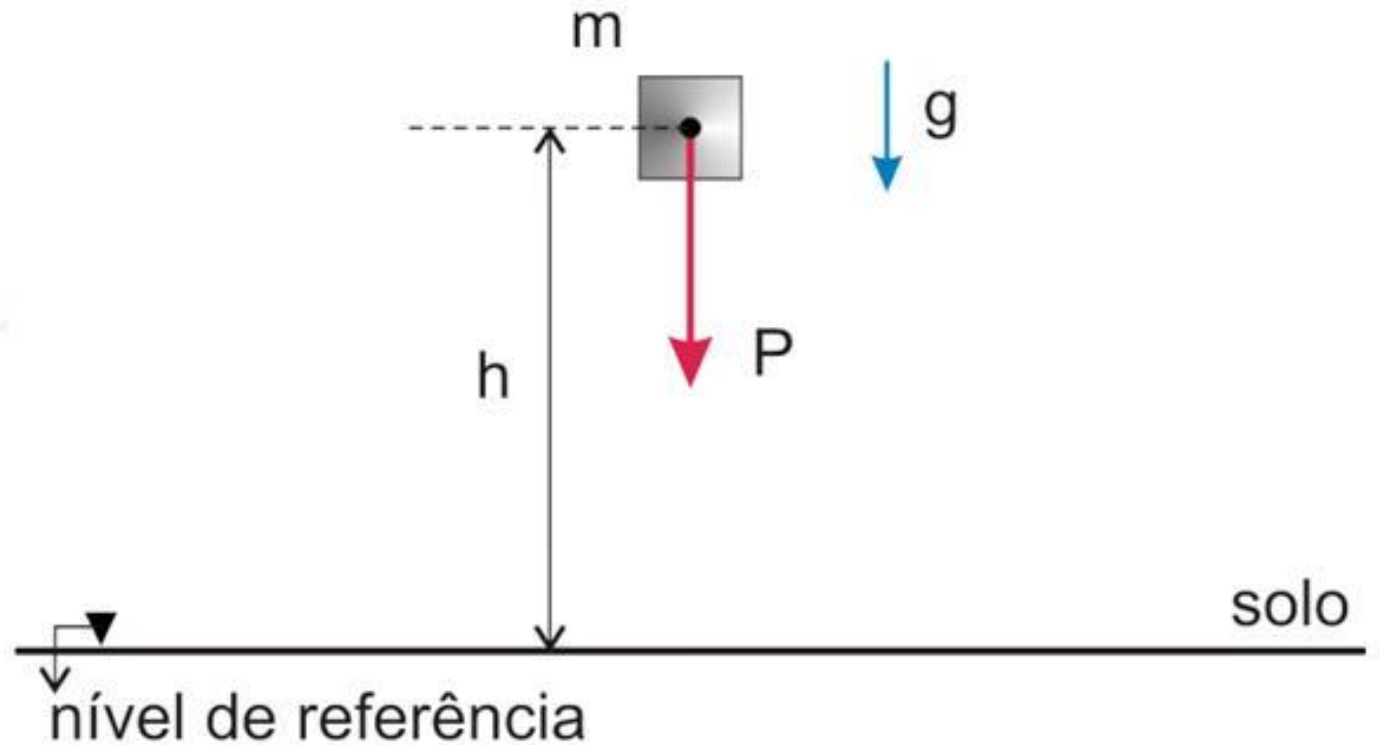


$$V = \frac{k \cdot Q}{d}$$

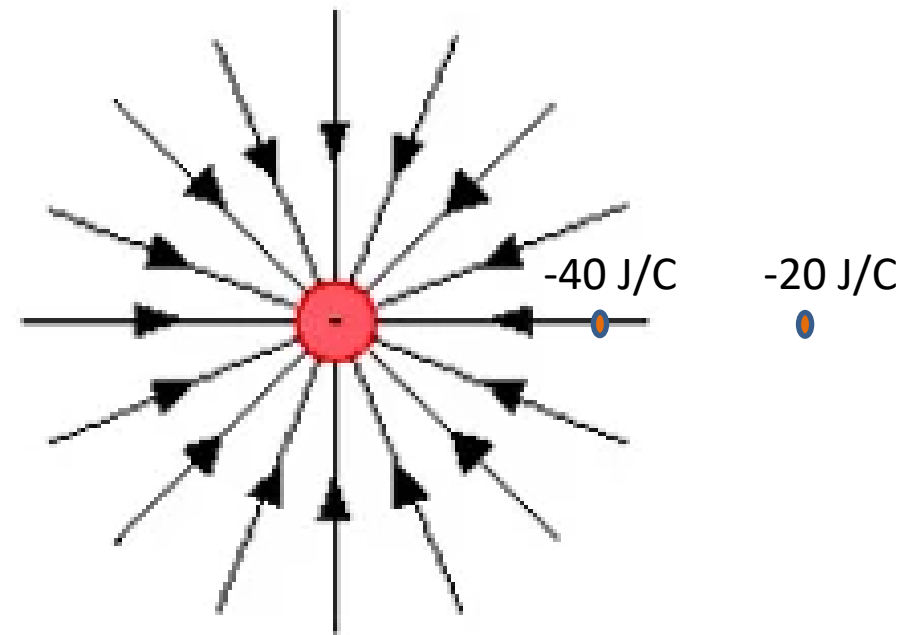
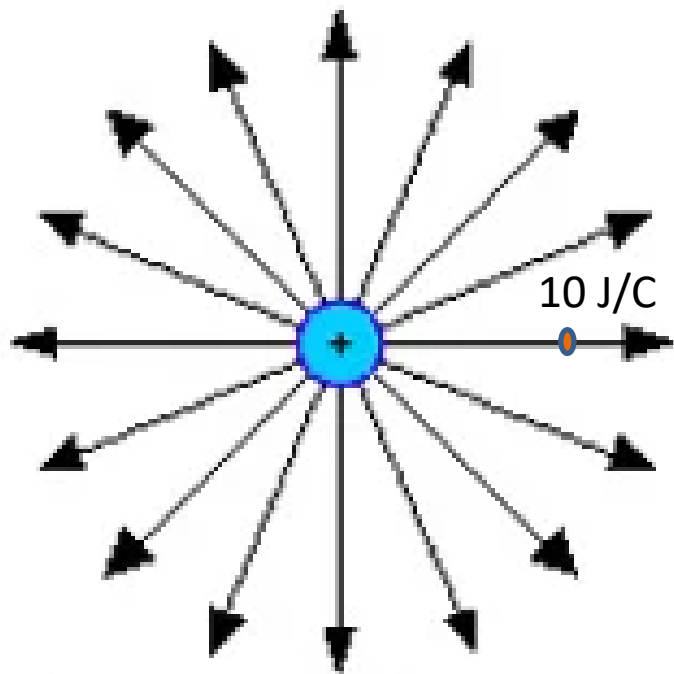
(V) = J/C

Lembra da Energia Potencial Gravitacional?

$$E_p = mgh$$



Potencial Eléctrico



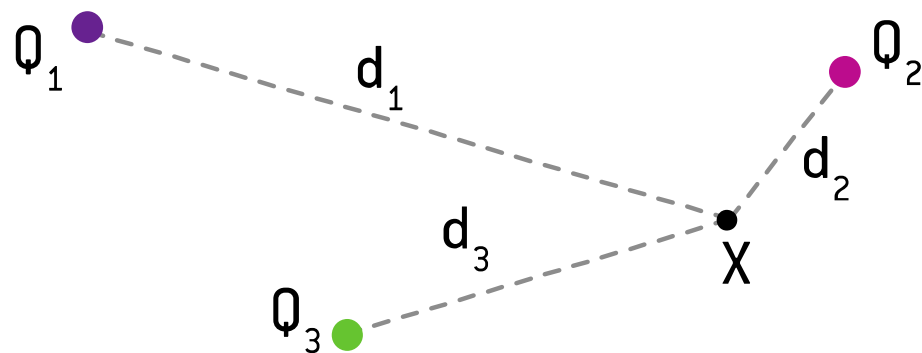
$$V = \frac{k \cdot Q}{d}$$

(V) = J/C

Conclusão

O potencial SEMPRE diminui no sentido da seta!

Conclusão



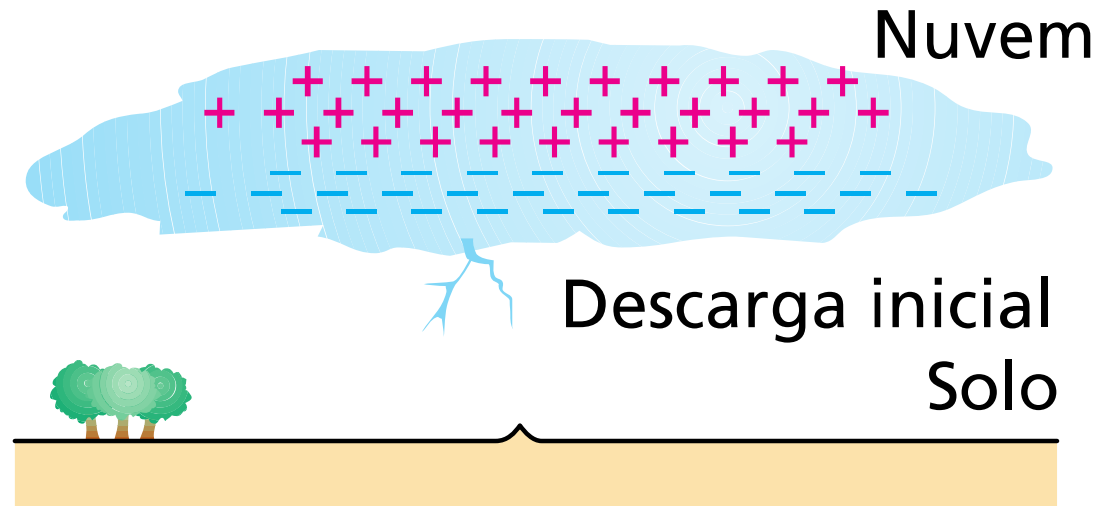
E a Energia potencial?

$$E_p = \frac{K \cdot Q \cdot q}{d}$$

J

C

m

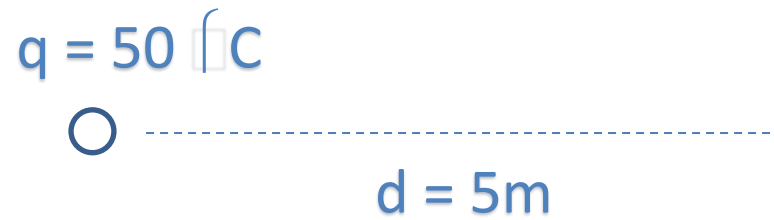


Exemplo

No vácuo, qual é o potencial elétrico gerado por uma carga puntiforme $q = 50 \mu\text{C}$ a 5,0 m de distância da carga?

Dado: constante eletrostática do vácuo = $9,0 \cdot 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$.

- a) $9,0 \cdot 10^4 \text{ V}$
- b) $4,5 \cdot 10^5 \text{ V}$
- c) $1,1 \cdot 10^6 \text{ V}$
- d) $3,0 \cdot 10^5 \text{ V}$
- e) $4,5 \cdot 10^6 \text{ V}$



$$V = \frac{K \cdot Q}{d}$$

$$V = \frac{9 \cdot 10^9 \cdot 50 \cdot 10^{-6}}{5}$$

$$V = 9 \cdot 10^4 \text{ V}$$

OBRIGADO

Prof.^a André Astro
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