

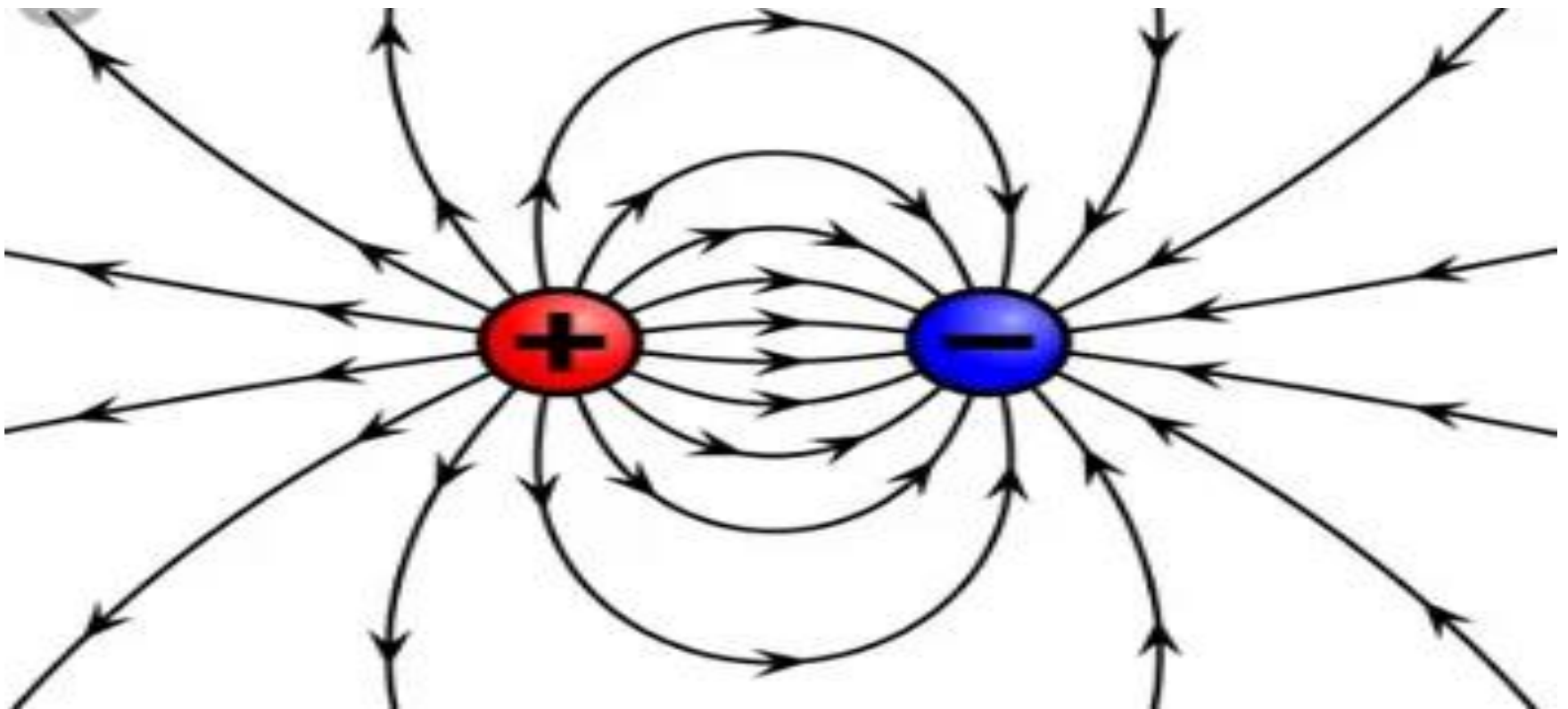
FISICA GRADO 11°

Campo Eléctrico



FISICA GRADO 11°

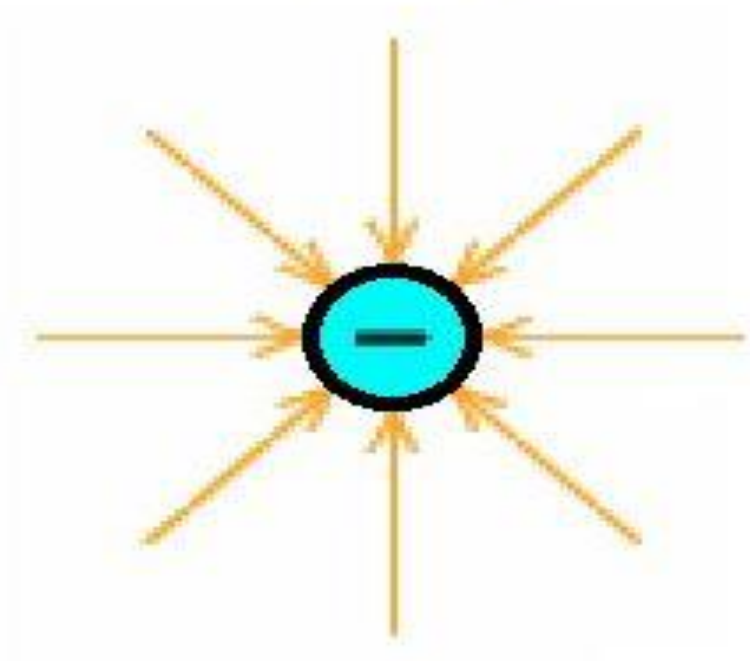
Campo Eléctrico



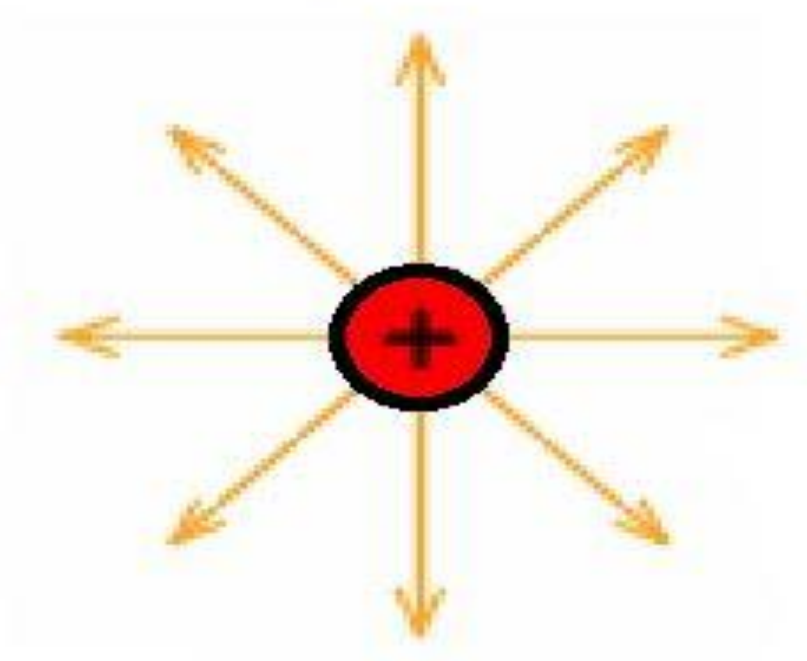
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Campo Eléctrico

Carga Negativa

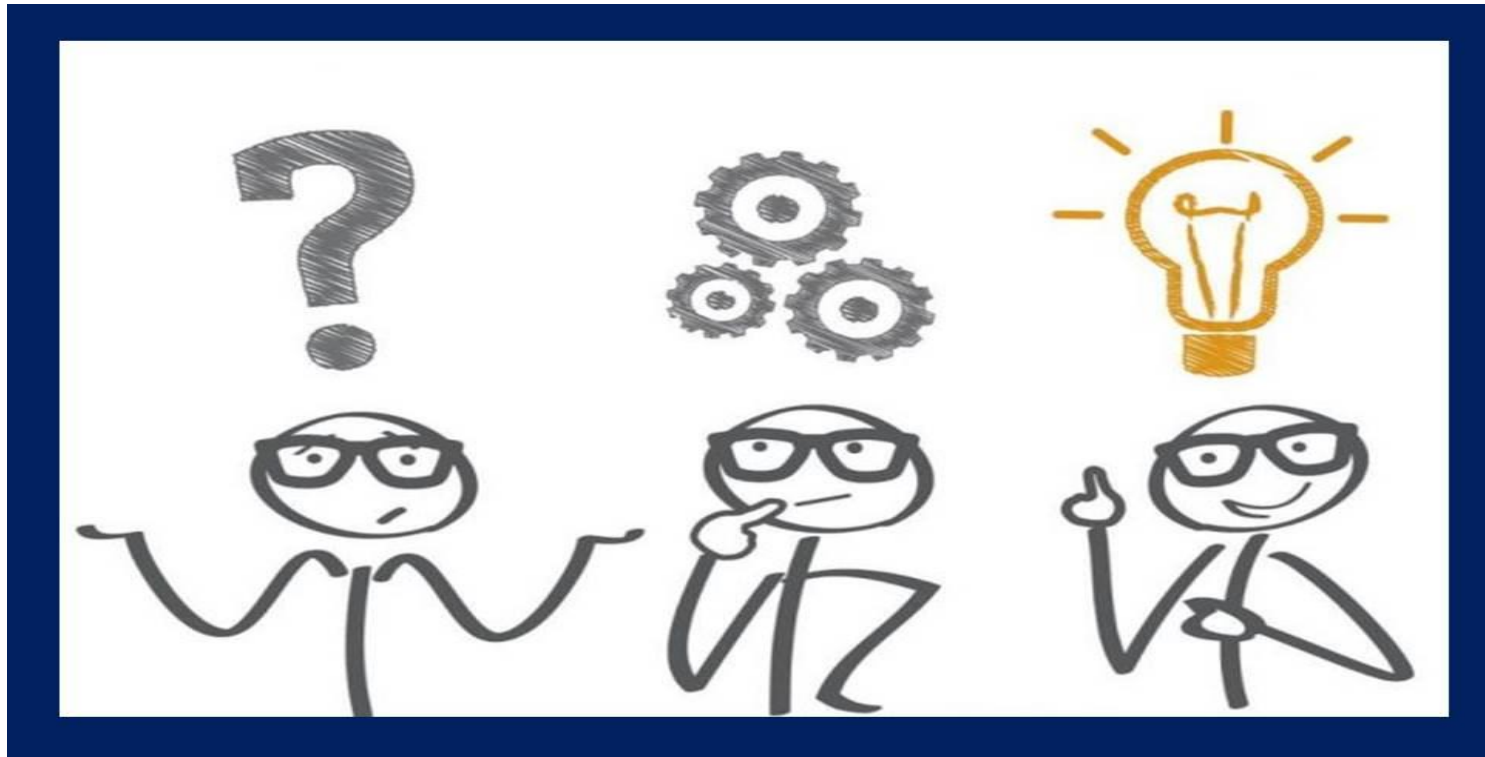


Carga Positiva



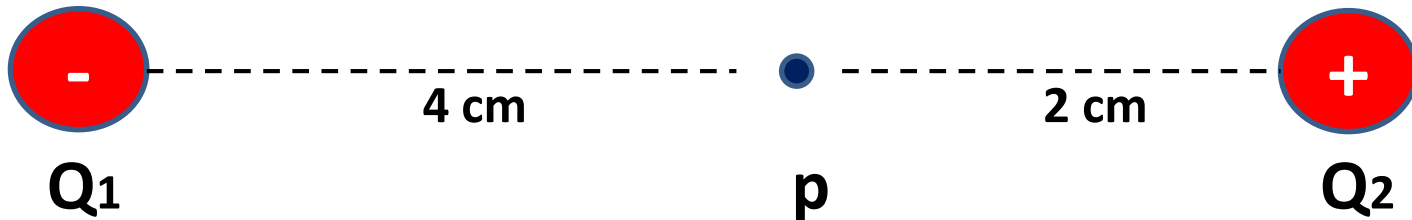
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Problemas de Aplicación



Tema Campo Eléctrico

Dos cargas Q_1 y Q_2 se encuentran sobre una misma recta como indica la figura.



Donde

$$Q_1 = -2 \times 10^{-7} \text{ C}$$

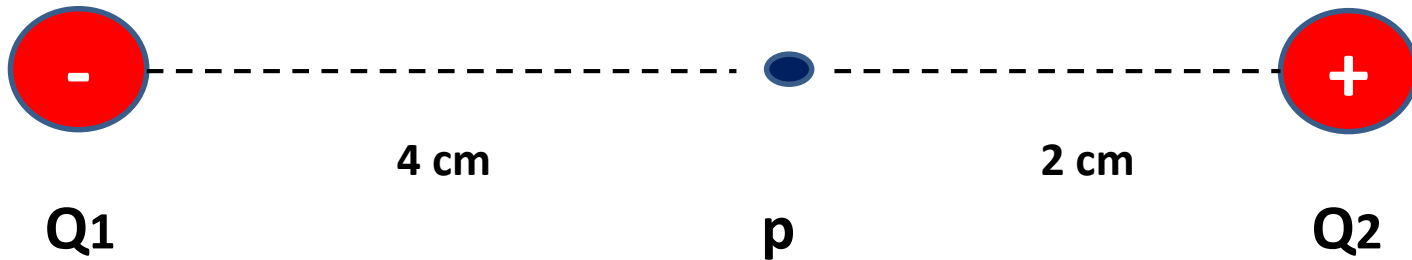
$$Q_2 = 4 \times 10^{-7} \text{ C}$$

Determinar el Campo Eléctrico sobre el punto p

Aplicamos la Formula de Coulomb.

$$E = \frac{k \cdot Q}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$ Constante de proporcionalidad



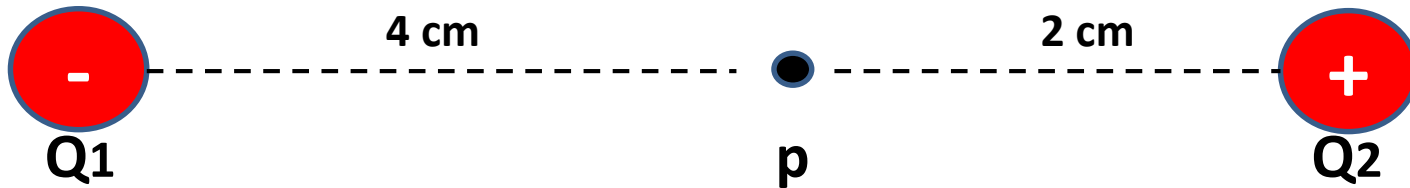
1. Hallamos el Campo Eléctrico en el punto p

$$Q_1 = -2 \times 10^{-7} \text{ C}$$

$$Q_2 = 4 \times 10^{-7} \text{ C}$$

$$E = \frac{k \cdot Q}{d^2}$$

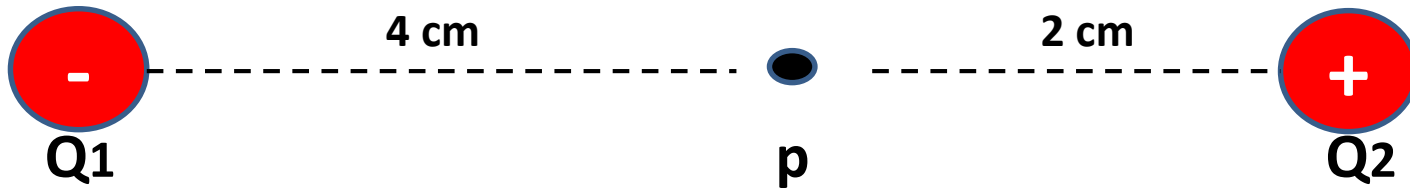
$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2$ Constante de proporcionalidad



$$E_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2) \cdot (-2 \times 10^{-7} \text{ C})}{(4 \text{ cm})^2}$$

$$E = \frac{k \cdot Q}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad

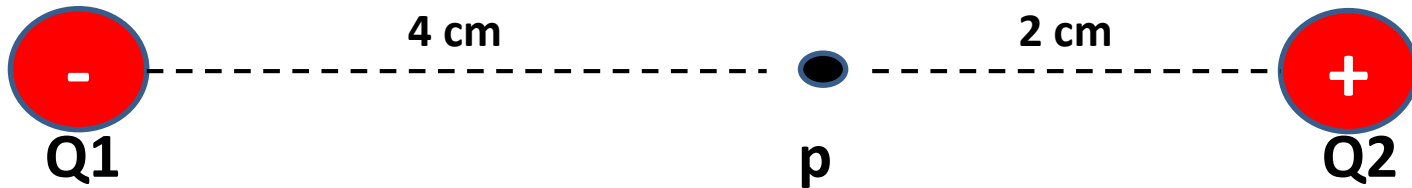


$$1 \text{ m} = 100 \text{ cm} \quad 4 / 100 = 0,04 \text{ m}$$

$$E_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-2 \times 10^{-7} \text{ C})}{(0.04 \text{ m})^2}$$

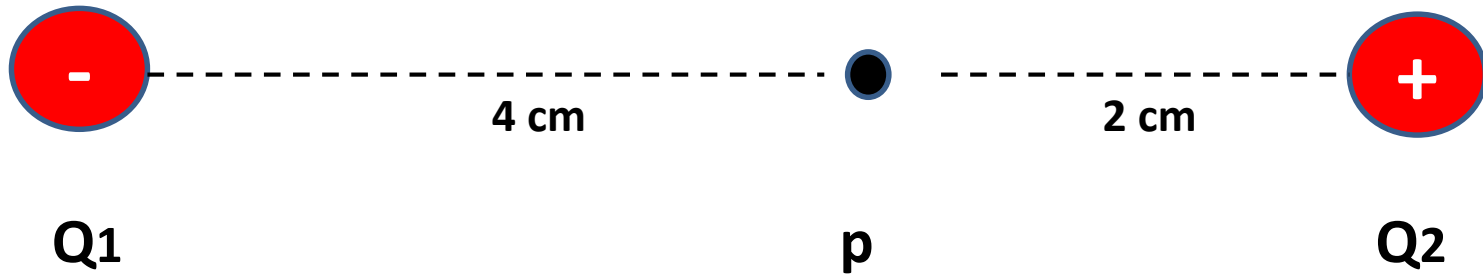
$$E = \frac{k \cdot Q}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad



$$1 \text{ m} = 100 \text{ cm} \quad 4 / 100 = 0,04 \text{ m} \quad \longrightarrow \quad 4 \times 10^{-2} \text{ m}$$

$$E_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (-2 \times 10^{-7} \text{ C})}{(4 \times 10^{-2} \text{ m})^2}$$



$$E_1 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2) \cdot (-2 \times 10^{-7} \text{ C})}{(4 \times 10^{-2} \text{ m})^2}$$

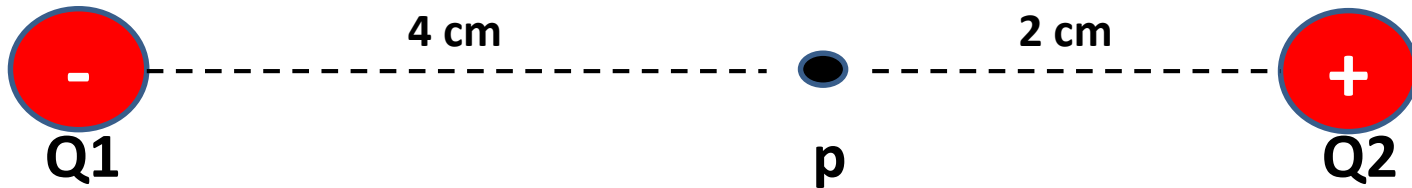
$$E_1 = \frac{-18 \times 10^2 \text{ New} \cdot \text{m}^2 / \text{C}}{16 \times 10^{-4} \text{ m}^2}$$

$$E_1 = -9/8 \times 10^2 \cdot 10^4 \text{ New/c}$$

$$E_1 = -9/8 \times 10^6 \text{ New/c} \longrightarrow E_1 = -1,125 \times 10^6 \text{ New /C}$$

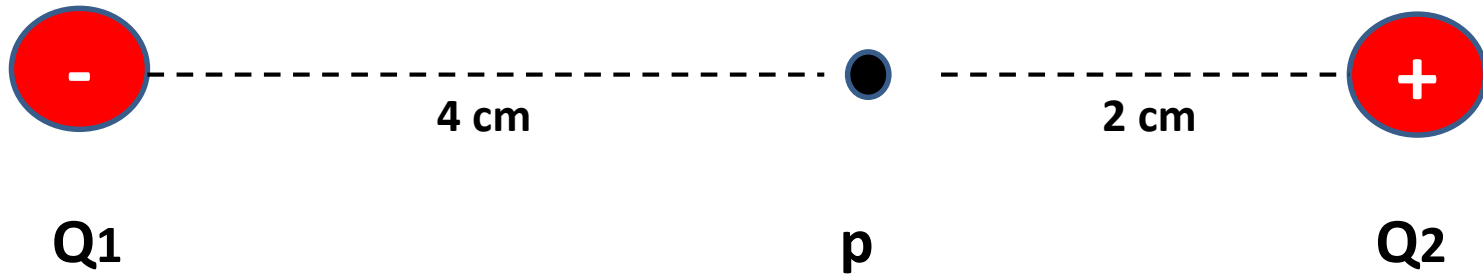
$$E = \frac{k \cdot Q}{d^2}$$

$K = 9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2$ Constante de proporcionalidad



$$1 \text{ m} = 100 \text{ cm} \quad 2 / 100 = 0,02 \text{ m} \quad \longrightarrow \quad 2 \times 10^{-2} \text{ m}$$

$$E_2 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{c}^2) \cdot (4 \times 10^{-7} \text{ C})}{(2 \times 10^{-2} \text{ m})^2}$$

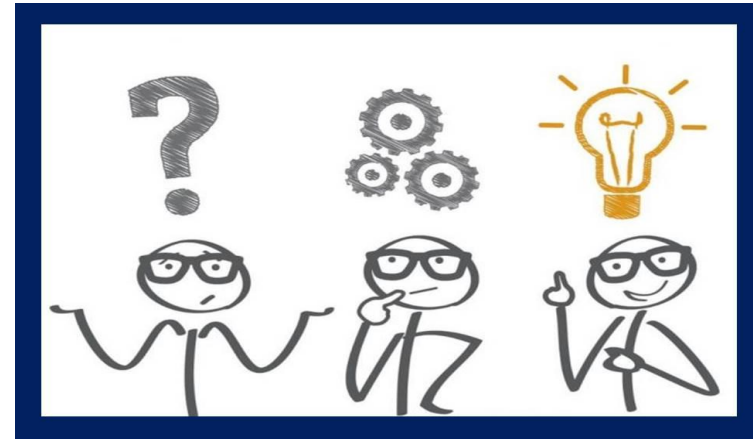


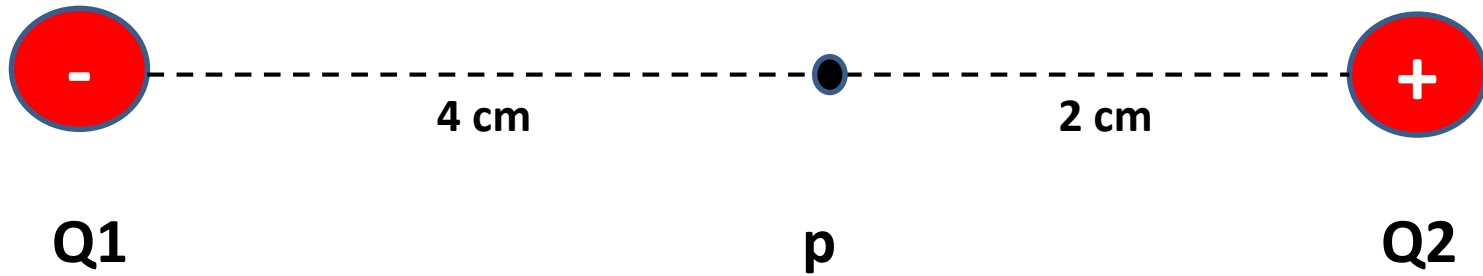
$$E_2 = \frac{(9 \times 10^9 \text{ N} \cdot \text{m}^2/\text{C}^2) \cdot (4 \times 10^{-7} \text{ C})}{(2 \times 10^{-2} \text{ m})^2}$$

$$E_2 = \frac{36 \times 10^2 \text{ New} \cdot \text{m}^2 / \text{C}}{4 \times 10^{-4} \text{ m}^2}$$

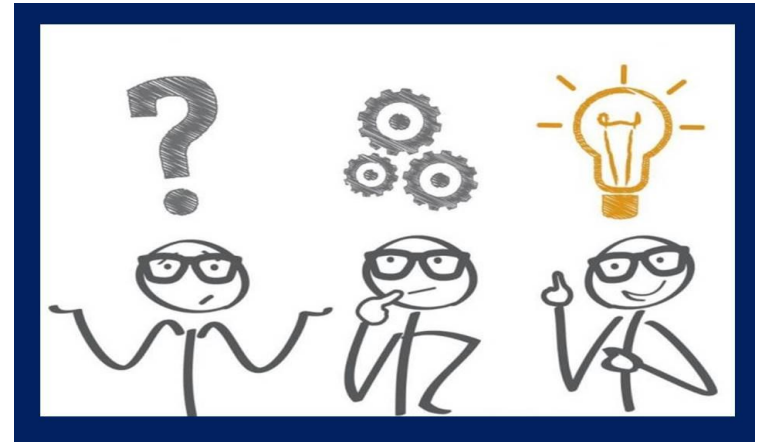
$$E_2 = 18/2 \times 10^2 \cdot 10^4 \text{ New/c}$$

$$E_2 = 9 \times 10^6 \text{ New/c}$$





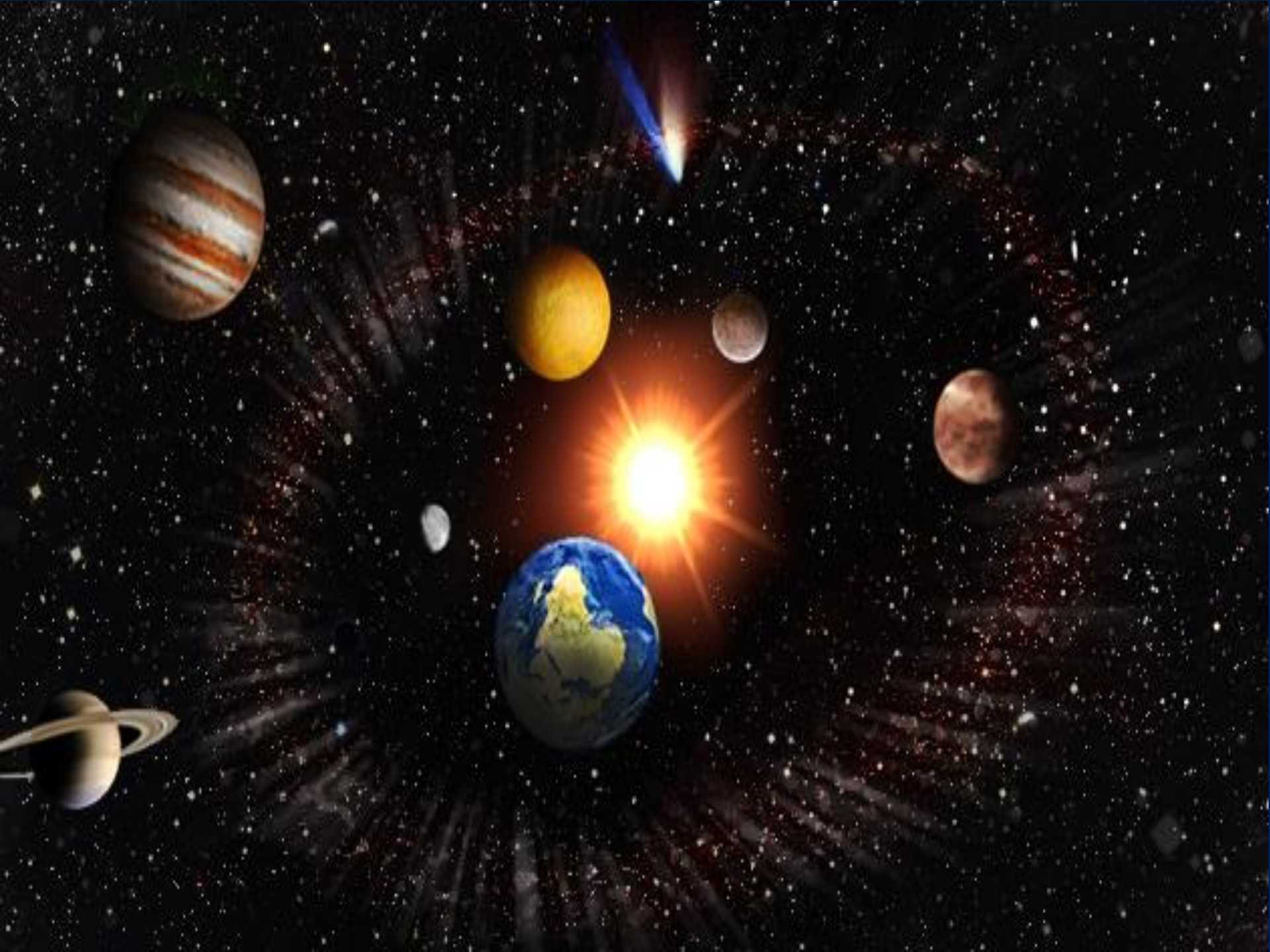
Hallamos el campo Eléctrico Total

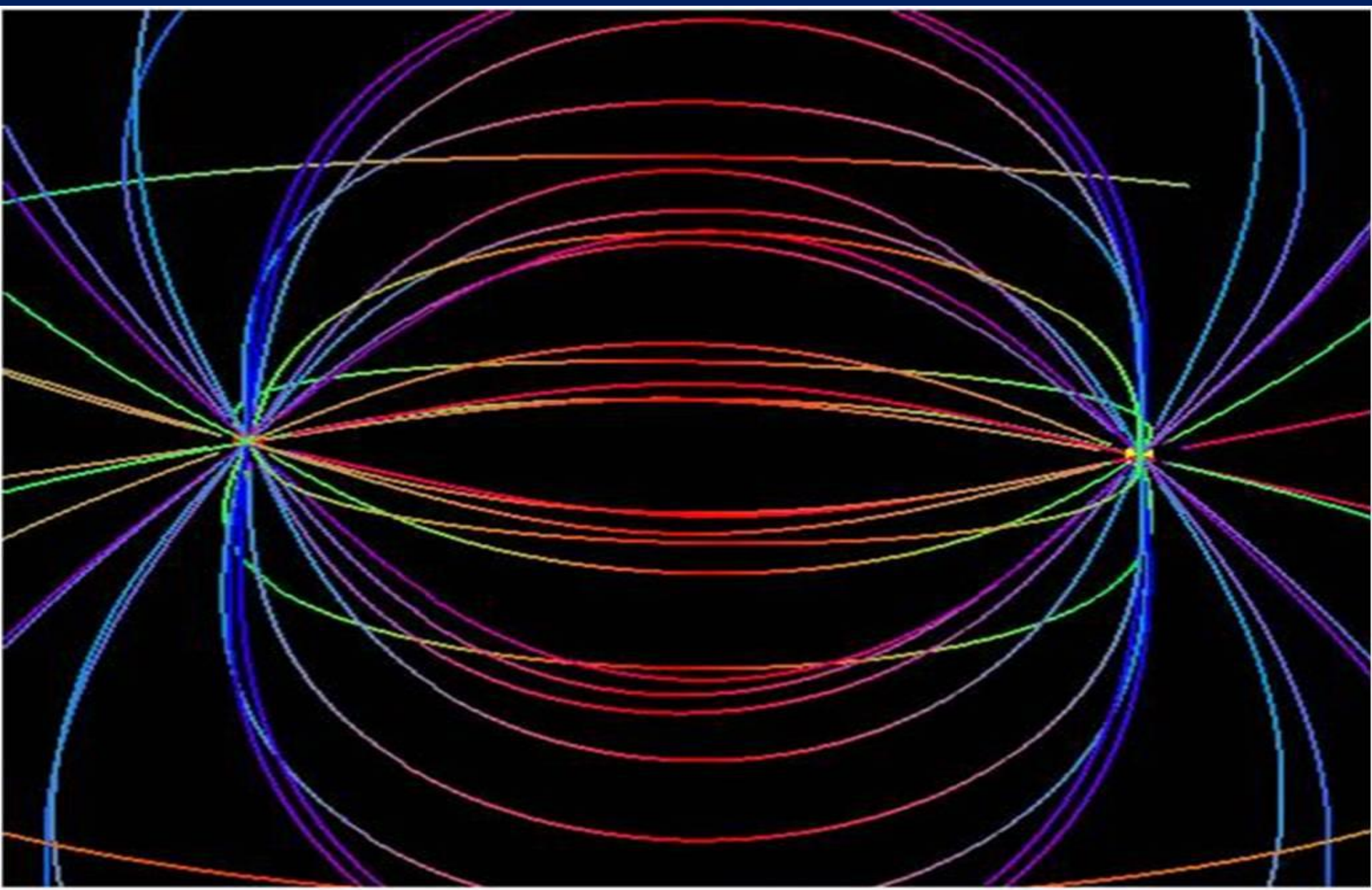


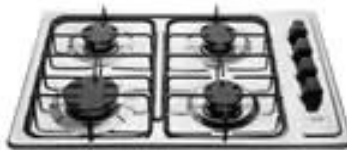
$$E_t = E_1 + E_2$$

$$E_t = (-1,125 \times 10^6 \text{ New /C}) + (9 \times 10^6 \text{ New/C})$$

$$F_t = 7,875 \times 10^6 \text{ New/C}$$







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