

EJEMPLO 1 : Barra cargada uniformemente

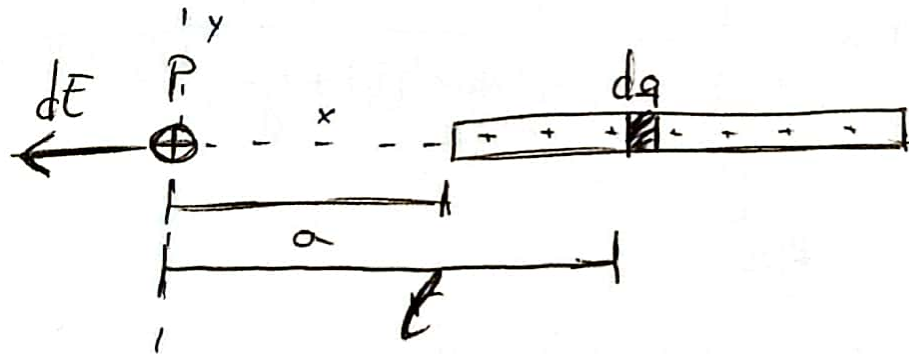
sabiendo:

$$\vec{dE} = k \frac{dq}{r^2} \quad : \text{ integramos:}$$

$$\int \vec{dE} = \vec{E} = \int k \frac{dq}{r^2} \quad \text{donde } dq = \lambda dl$$

$$\Rightarrow \int_a^{a+L} k \frac{\lambda dl}{r^2} = k\lambda \int_a^{a+L} \frac{1}{x^2} dx = k\lambda \left[-\frac{1}{x} \right]_a^{a+L} = +k\lambda \left(-\frac{1}{a+L} + \frac{1}{a} \right) =$$

$$= -k\lambda \left(\frac{1}{a+L} - \frac{1}{a} \right) = - \left(\frac{k\lambda}{a+L} - \frac{k\lambda}{a} \right) = \left(\frac{a k\lambda}{a(a+L)} + \frac{(a+L)(k\lambda)}{a(a+L)} \right) =$$



$$\Rightarrow \lambda = \frac{Q}{L}$$

\Rightarrow

$$\vec{C} = \frac{Q K}{L \cdot a} - \frac{Q K}{L (a+L)}$$

X