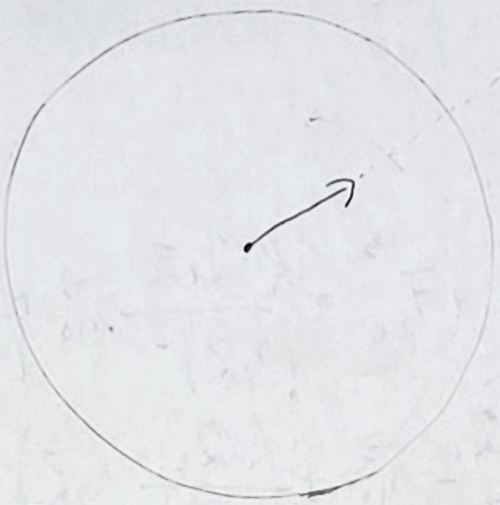
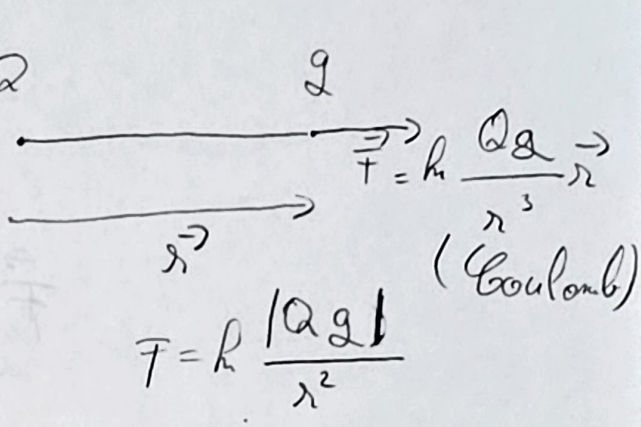
Câmpul electrostatic. Intensitatea câmpului electrostatic





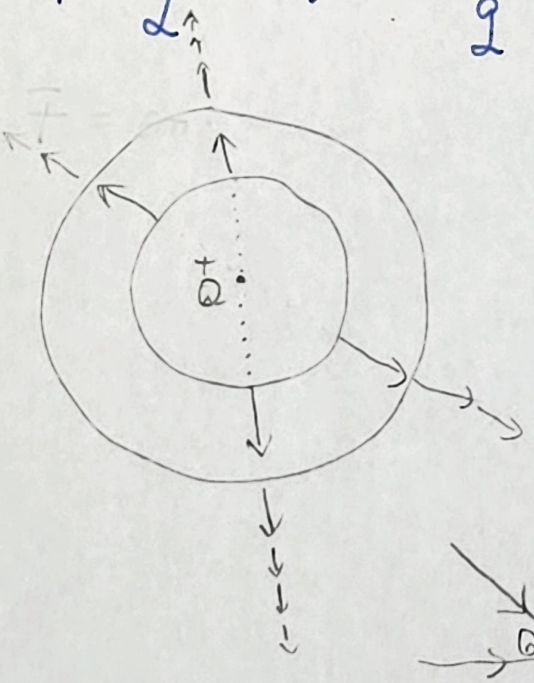
$\vec{F} = q\left(\frac{kQ}{r^3}\vec{r}\right)$; $\vec{E} = \frac{kQ}{r^3}\vec{r}$ - reprezintă expresia matematică a intensității câmpului electrostatic produs de corpul punctiform cu sarcina Q în locul în care se găsește corpul cu sarcina q

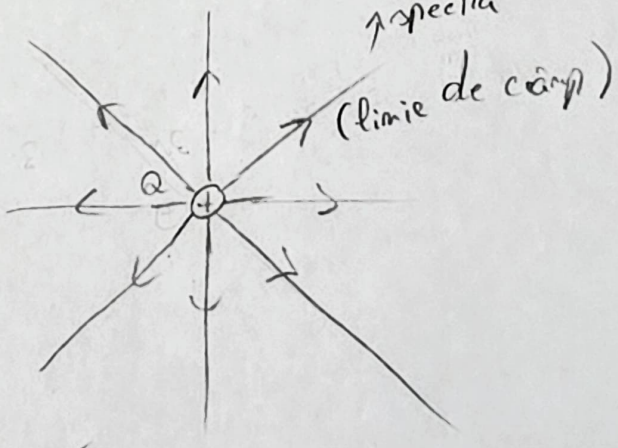
$\vec{E}$

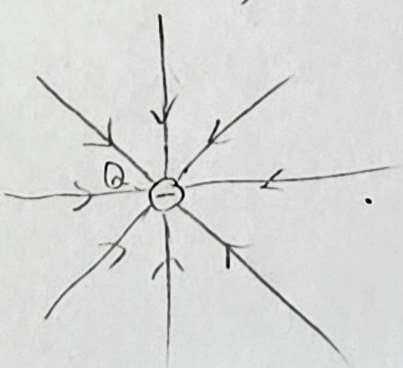
$E = \frac{k|Q|}{r^2} = \frac{|Q|}{4\pi\varepsilon_0 r^2}$

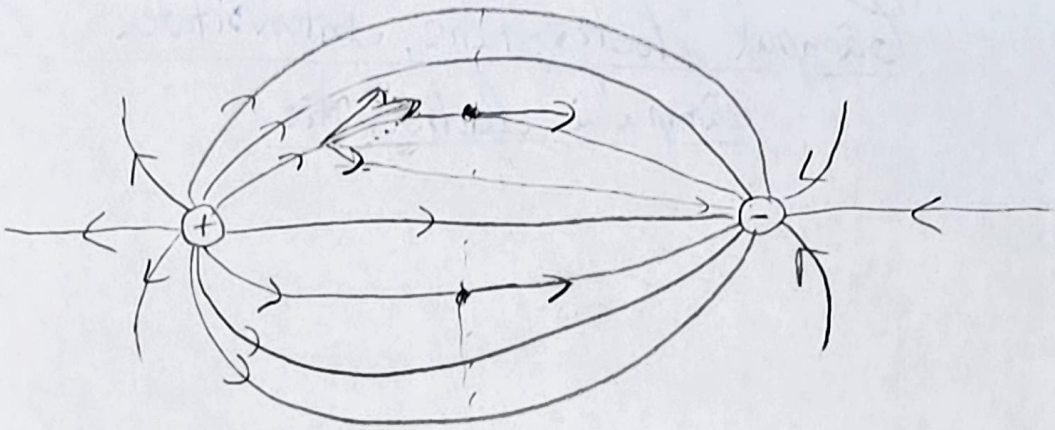
$\vec{F} = q\vec{E} \Rightarrow \vec{E} = \frac{\vec{F}}{q}$

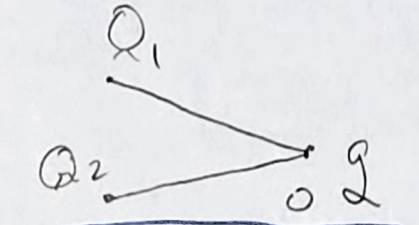
$[E]_{S.I.} = \frac{N}{C}\left(= \frac{V}{m}\right)$











$$\boxed{\vec{E}_q = \vec{E}_{1q} + \vec{E}_{2q}}$$

$$\vec{F}_q = \vec{F}_{1q} + \vec{F}_{2q} = \frac{kQ_1 q}{|\vec{r}_{10}|^3}\vec{r}_{10} + \frac{kQ_2 q}{|\vec{r}_{20}|^3}\vec{r}_{20} =$$

$$= q\left(\underbrace{\frac{kQ_1}{|\vec{r}_{10}|^3}\vec{r}_{10}}_{\vec{E}_{10}} + \underbrace{\frac{kQ_2}{|\vec{r}_{20}|^3}\vec{r}_{20}}_{\vec{E}_{20}}\right) =$$

$$= q\left(\vec{E}_{10} + \vec{E}_{20}\right) = qE_q .$$

$$\vec{E} = k\frac{Q}{r^3}\vec{r} = \vec{E}(x, y, z)$$