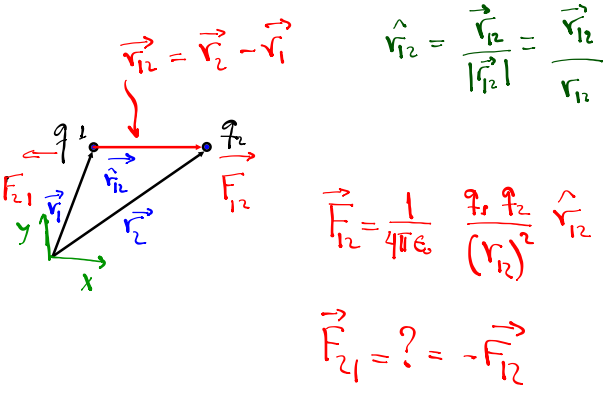
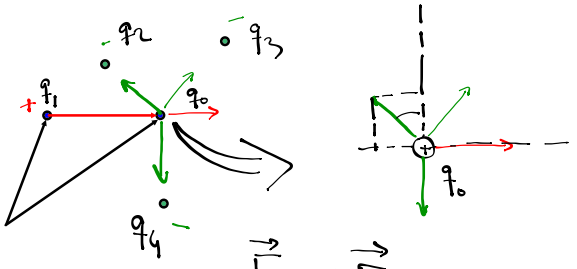
- Força de Coulomb (2 cargas):



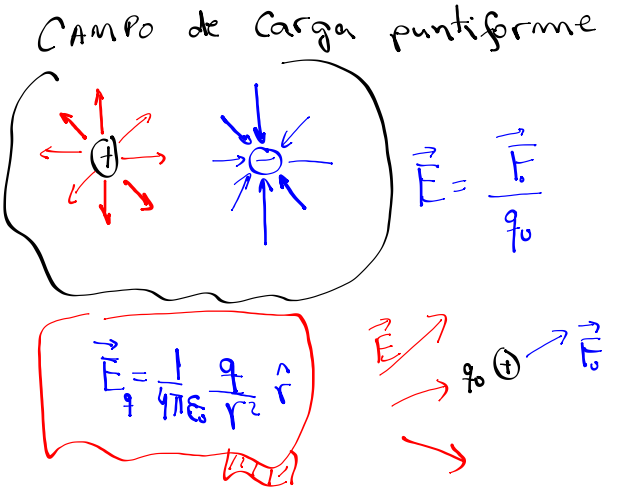
Na presença de outras cargas (q2, q3, q4)...



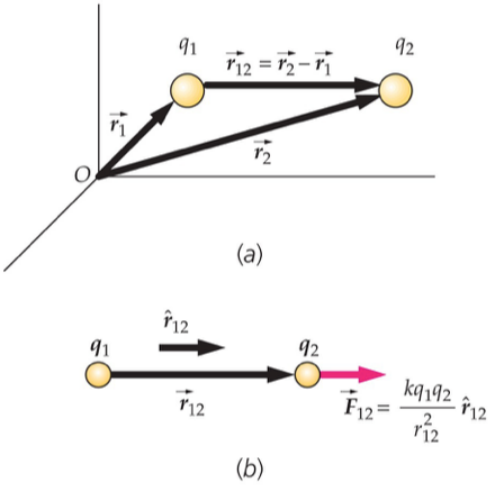
$$\vec{F} = \vec{F}_1 + \vec{F}_2 + \vec{F}_3 + \cdots$$

Principio de superposição

$$\vec{F} = \sum_i \vec{F}_i \Rightarrow \vec{E} = \frac{\vec{F}}{q_0} = \sum_i \vec{E}_i$$



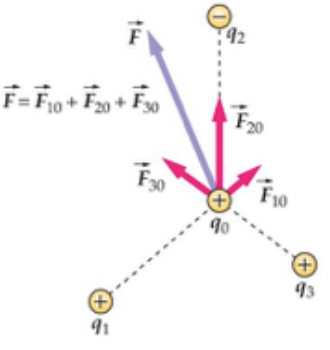
Resumindo...



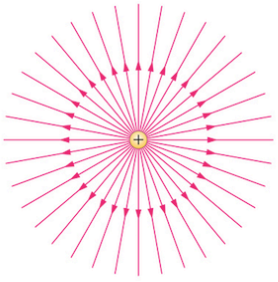
Força de Coulomb (notação)

Principio de superposição

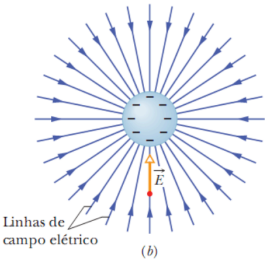
(cargas puntiformes)



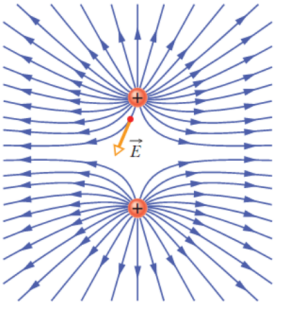
Linhas de campo

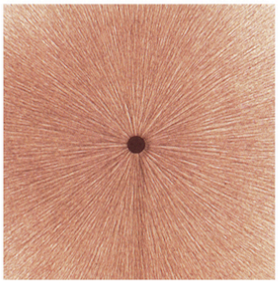


(a)

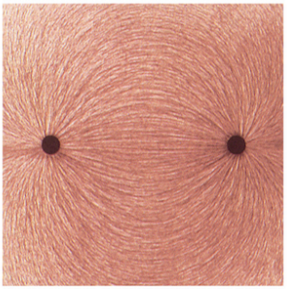


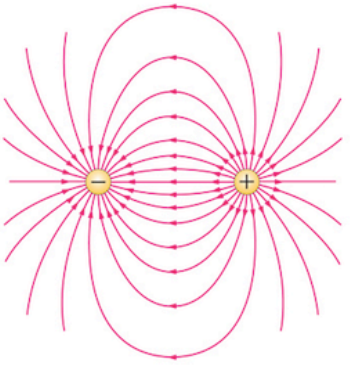
(b)

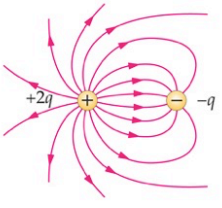




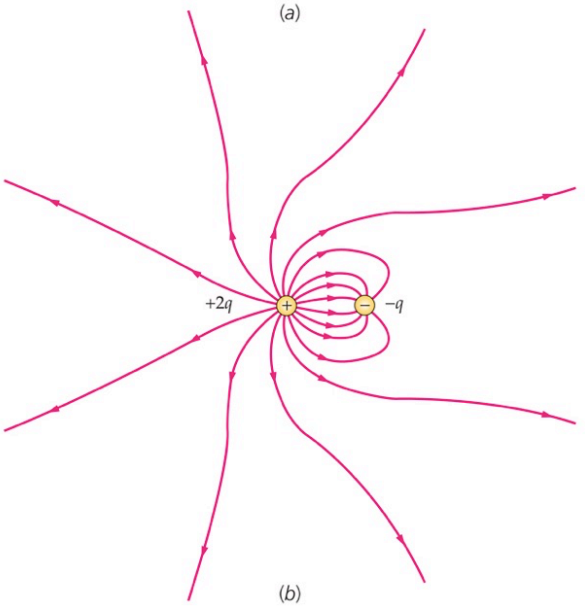
(b)





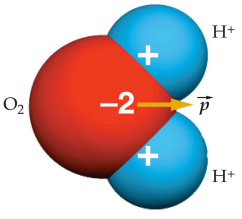


(a)



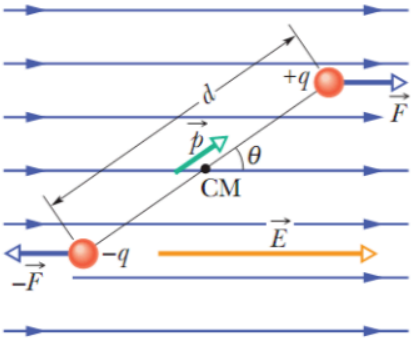
(b)

Dipolo elétrico



Exemplo de dipolo natural

(molécula de agua)

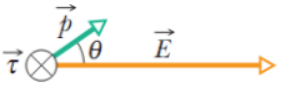


(a)

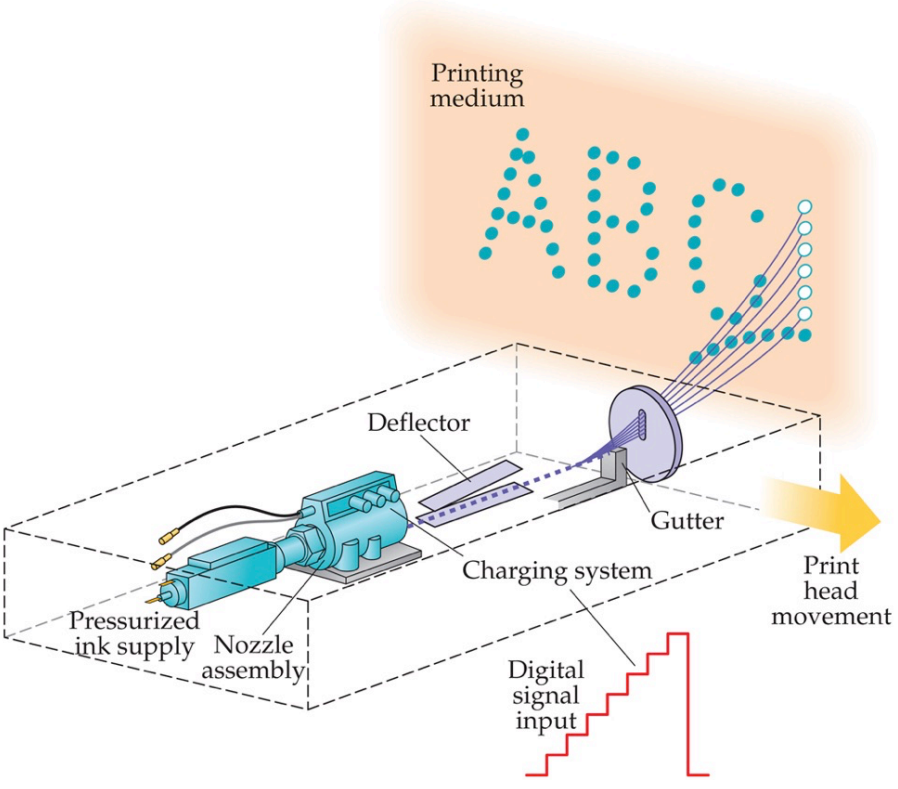
Força liquida nula!

(campo uniforme)

O torque tende a alinhar o dipolo com o campo.



(b)

$$\vec{\tau} = \vec{p} \times \vec{E}$$ (torque em um dipolo)

Exemplo de Aplic.: impressora jato de tinta