



Net force on \vec{p} :

$$\vec{F} = \vec{F}_{+q} + \vec{F}_{-q}$$

$$= q\vec{E}(r = r + \frac{s}{2}) - q\vec{E}(r = r - \frac{s}{2})$$

$$= q \frac{2k\lambda}{(r + s/2)} \hat{i} - q \frac{2k\lambda}{(r - s/2)} \hat{i}$$

$$= 2qk\lambda \left\{ \frac{(r - s/2) - (r + s/2)}{(r + s/2)(r - s/2)} \right\} \hat{i}$$

$$= 2qk\lambda \left\{ \frac{-s}{r^2 - s^2/4} \right\} \hat{i}$$

$$= -\frac{2p\lambda k}{r^2 - s^2/4} \hat{i}$$

negative \Rightarrow attractive

And, for $r \gg s$:

$$\vec{F} \approx \frac{2p\lambda k}{r^2}$$