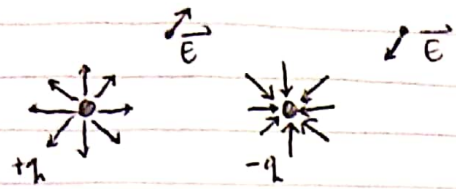
No.

Date 18 . 03 . 2019

Medan listrik ($\vec{E}$)



$$\vec{E}_1 = \frac{\Sigma \vec{F}}{q_1}$$

$$= \frac{F_{q_3}}{q_1} + \frac{F_{q_2}}{q_1}$$

$$\vec{E} = k\frac{q_3}{\rho^2} + k\frac{q_2}{\rho^2}$$

1. $\vec{E} = \frac{1}{4\pi\varepsilon_0}\frac{q}{r^2}\hat{r}_0$

   $= k\frac{q}{r^2}\hat{r}_0$ → oleh muatan diskrit

2. $\vec{E} = \frac{1}{4\pi\varepsilon_0}\int \frac{\hat{\lambda}\, dl}{r^2}\hat{r}_0$ → $q = \lambda l$ → muatan terdistribusi pada pengawat

3. $\vec{E} = \frac{1}{4\pi\varepsilon_0}\iint \frac{\sigma\, da}{r^2}\hat{r}_0$ → luar permukaan

4. $\vec{E} = \frac{1}{4\pi\varepsilon_0}\iiint \frac{\rho\, d\tau}{r^2}\hat{r}_0$

$$d\vec{E} = dE_y + dE_x$$
$$d\vec{E} = dE_y$$
$$d\vec{E} = dE\cos\theta$$

$$\vec{E} = \frac{1}{4\pi\varepsilon_0}\int_{-L}^{L}\frac{\lambda\, dl}{r^2}\cos\theta$$

$$= \frac{2}{4\pi\varepsilon_0}\int_{0}^{L}\frac{\lambda\, dx}{(x^2+z^2)}\cos\theta$$

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$$\vec{E} = \boxed{\frac{2\lambda z}{4\pi\varepsilon_0}} \int_0^L \frac{dx}{(x^2+z^2)^{3/2}}$$

$$= \square \int \frac{dx}{(x^2+z^2)^{3/2}}$$

$$= \square \left(\frac{x}{z^2\sqrt{x^2+z^2}} \right) \Big|_0^L$$

$$= \square \left[\frac{l}{z^2\sqrt{l^2+z^2}} - \frac{0}{z^2\sqrt{0+z^2}} \right]$$

$$= \square \left[\frac{l}{z^2\sqrt{l^2+z^2}} \right.$$