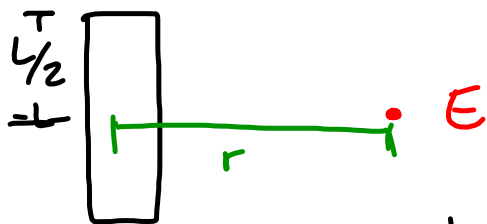


LIST OF EQUATIONS $\rightarrow$ E/M



$$E = \frac{1}{4\pi\epsilon_0} \left[\frac{Q}{r\sqrt{r^2 + (\frac{L}{2})^2}} \right]$$

• Uniform thin ring of charge

$$E = \frac{1}{4\pi\epsilon_0} \frac{qz}{(r^2 + z^2)^{3/2}}$$

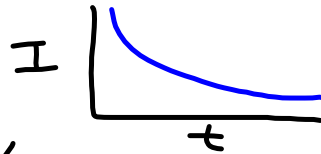
• E-field of capacitor (between plates)

$$E = \frac{Q}{A\epsilon_0}$$

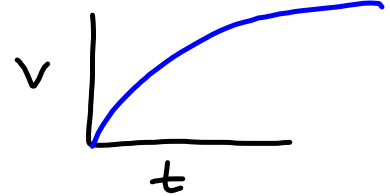
- RC Circuits
Charging

$$\tau = RC$$

$$I = I_0 e^{-t/RC}$$



$$V = V_0 (1 - e^{-t/RC})$$



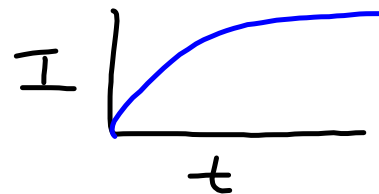
- RL Circuits

- time constant

$$\tau = \frac{L}{R}$$

- charging

$$I = I_0 (1 - e^{-Rt/L})$$



- Change in Emf

$$\mathcal{E} = -N \frac{d}{dt} (BA)$$

Chapters in Matter and Interactions

- Mechanics $\rightarrow 1, 2, 3, 4, 5, 6, 9, 10, 11$
- E/M $\rightarrow 13, 14, 15, 16, 17, 18, 19, 20,$
21, 22