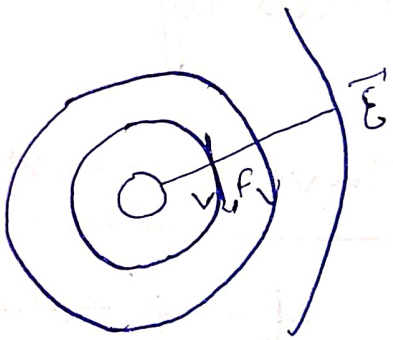
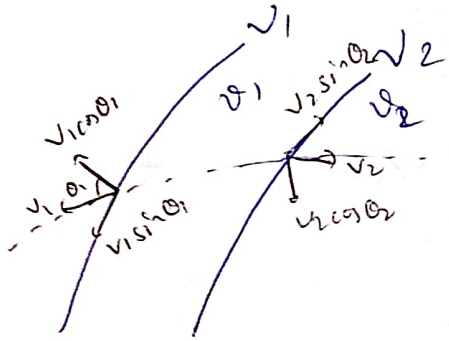
- Electron optics :-

→ Bethe's law :-

Inhomogeneous $\vec{E}$

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





$$\frac{1}{2}mv_1^2 = eV_1$$

$$v_1 = \sqrt{\frac{2eV_1}{m}} \quad \text{---(1)}$$

$$v_2 = \sqrt{\frac{2eV_2}{m}} \quad \text{—(2)}$$

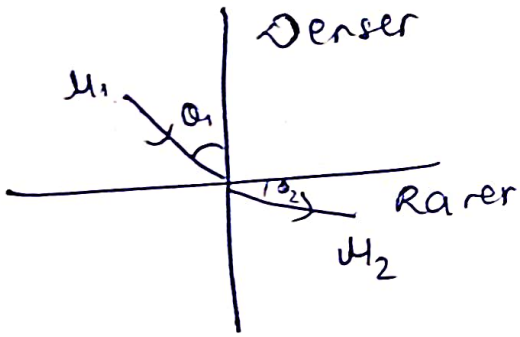
Inhomogeneous $\vec{E}$ = mag. vary.

uniform $\vec{E}$ = mag. const.

$\vec{E}$ dir → $\vec{F}$ dir.

uniform medium → μ fixed, path of light straight

if μ changed → path curved



$$v_1 \sin\theta_1 = v_2 \sin\theta$$

$$\frac{\sin\theta_1}{\sin\theta_2} = \frac{v_2}{v_1} = \sqrt{\frac{V_2}{V_1}}$$