TALLER 9

Ec. $\nabla \cdot \vec{j} + \frac{\partial \rho}{\partial t} = 0$

$\swarrow$ $\searrow \frac{\partial \rho}{\partial t} = 0$

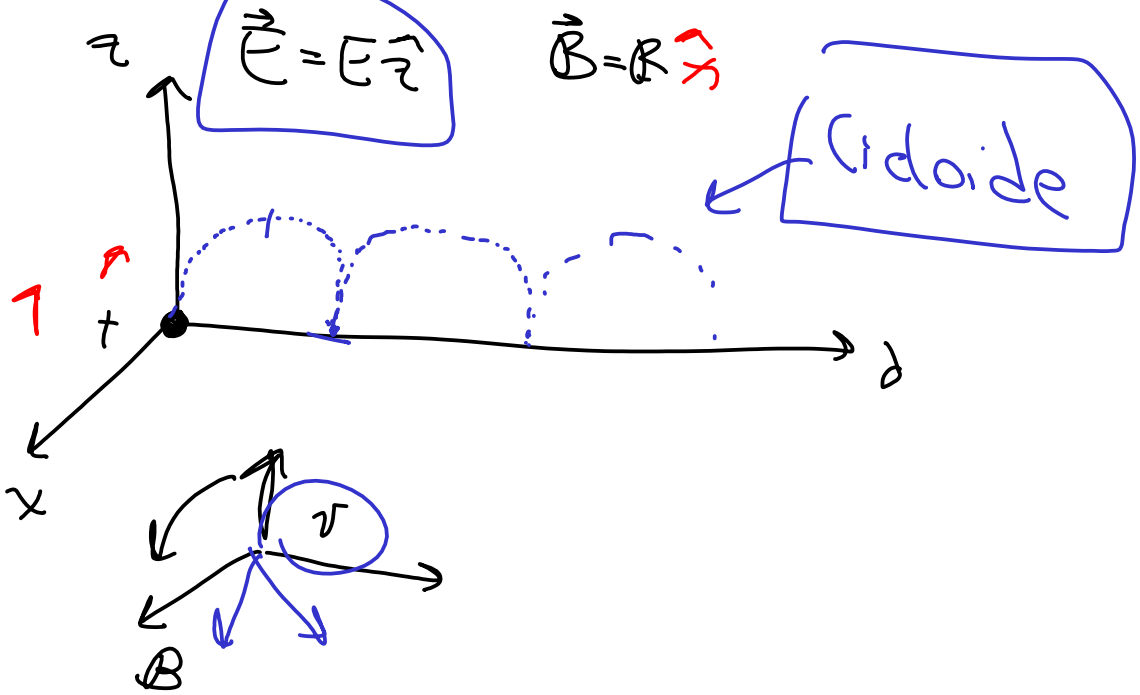
$\nabla \cdot \vec{j} = 0$

$\vec{F}_m = q(\vec{v} \times \vec{B})$; $[B] = T$ SI.

$= G$ cgs.

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

$\vec{F}_L = q(\vec{E} + \vec{v} \times \vec{B})$ Fuerza de Lorentz



$$\sum F = m\ddot{y}\hat{j} + m\ddot{z}\hat{z} = q\left(E\hat{z} + B\dot{z}\hat{j} - B\dot{y}\hat{z}\right)$$

$$\begin{cases} \ddot{y} = \dfrac{QB}{m}\dot{z} \\ \ddot{z} = \dfrac{QE}{m} - \dfrac{QB}{m}\dot{y} \end{cases} \qquad \begin{matrix} y(0) = z(0) = 0 \\ \dot{y}(0) = \dot{z}(0) = 0 \end{matrix}$$

$$\begin{cases} y(t) = \dfrac{E}{\omega B}\left(\omega t - \operatorname{sen}(\omega t)\right) \\ z(t) = \dfrac{E}{\omega B}\left(1 - \cos(\omega t)\right) \end{cases} \qquad \omega = \frac{QB}{m}.$$

$$R = \frac{E}{\omega B}$$

$$\left(y - R\omega t\right)^2 + \left(z - R\right)^2 = R^2$$

$$\vec{F}_M = \int I(d\vec{l} \times \vec{B})$$

$d\vec{l}$

$$d\vec{F}_M = \frac{dq}{dt} d\vec{x} \times \vec{B}$$

I

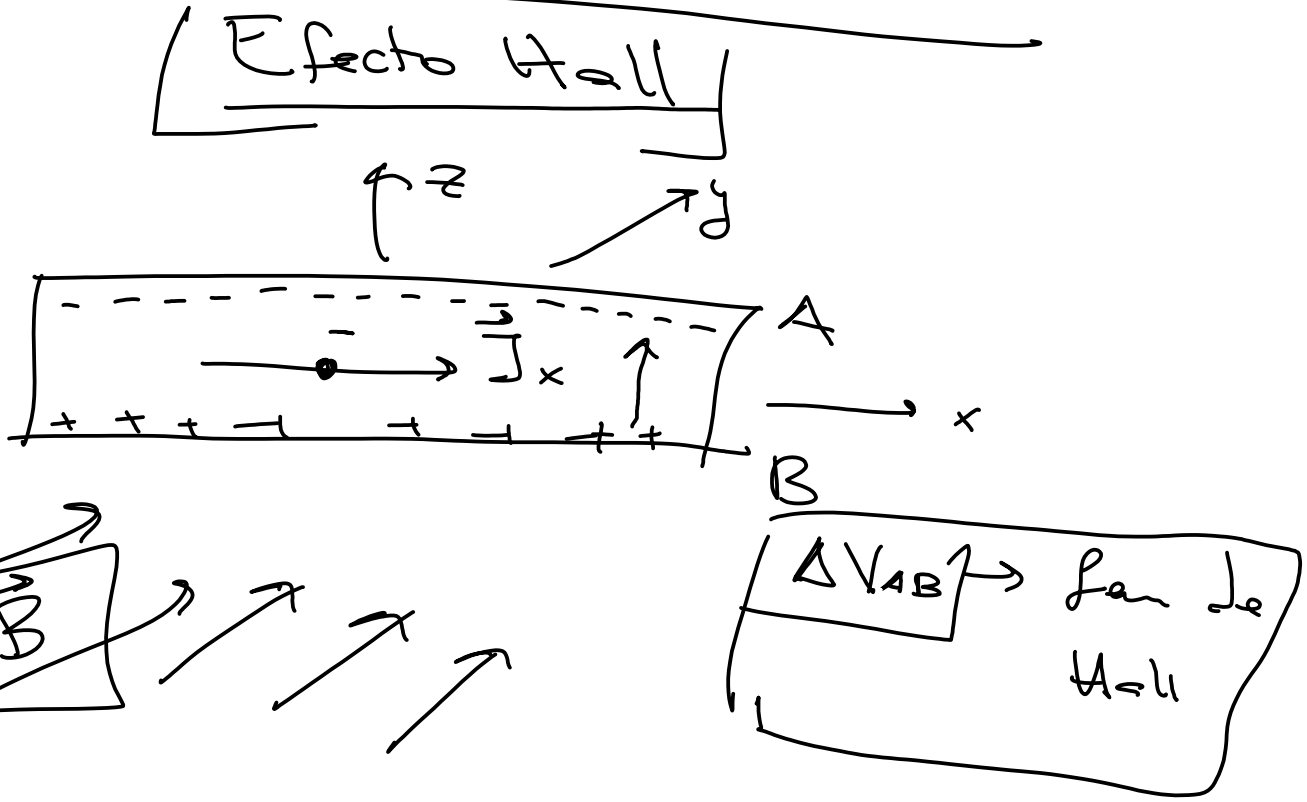
$$\Phi_B = \oint \vec{B} \cdot d\vec{A} = 0$$

$[\Phi_B] = Wb$

Weber

$$\nabla \cdot \vec{B} = 0$$

Efecto Hall



$$nq = \frac{-J \times B_0}{E_z}$$