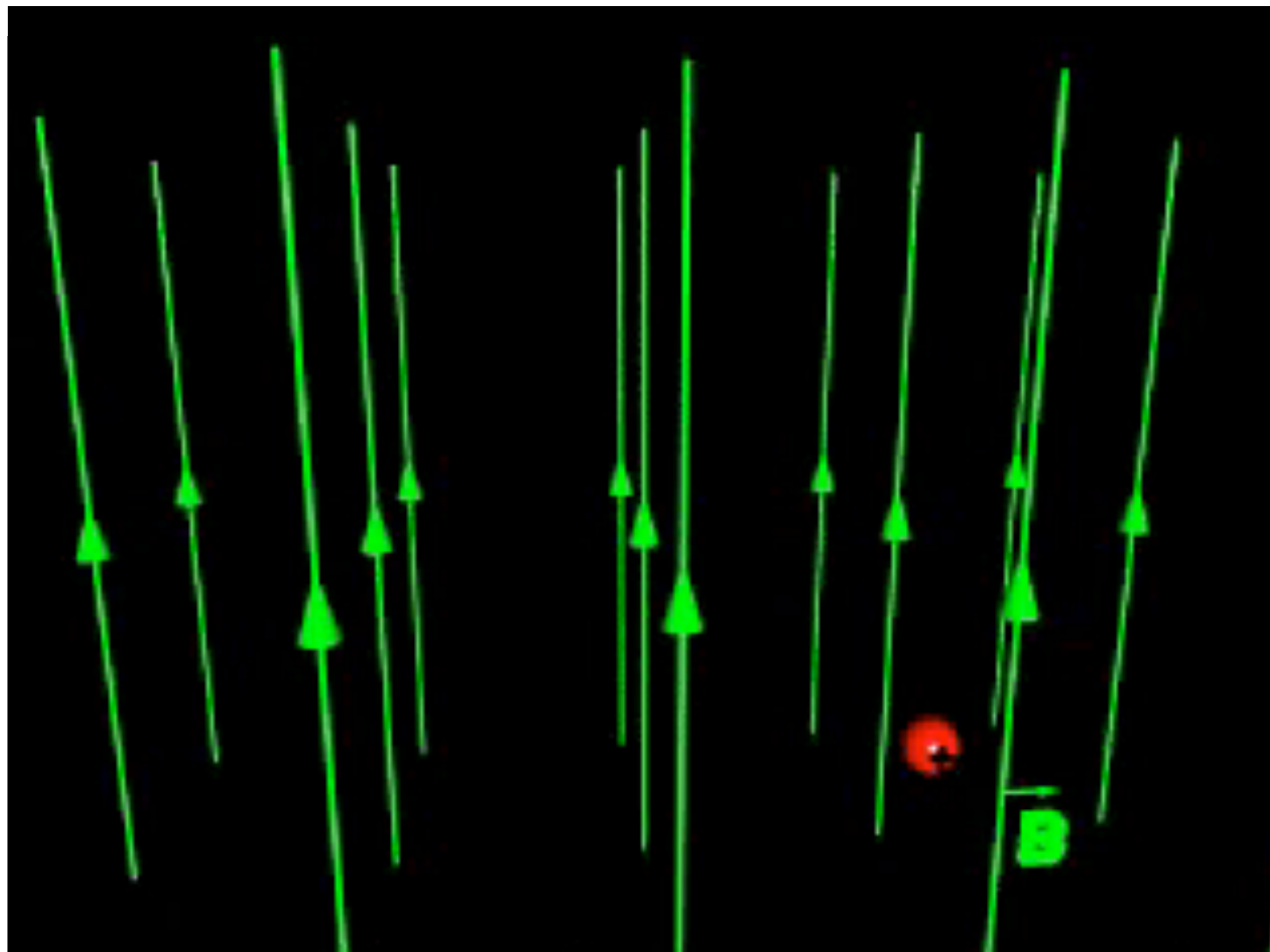


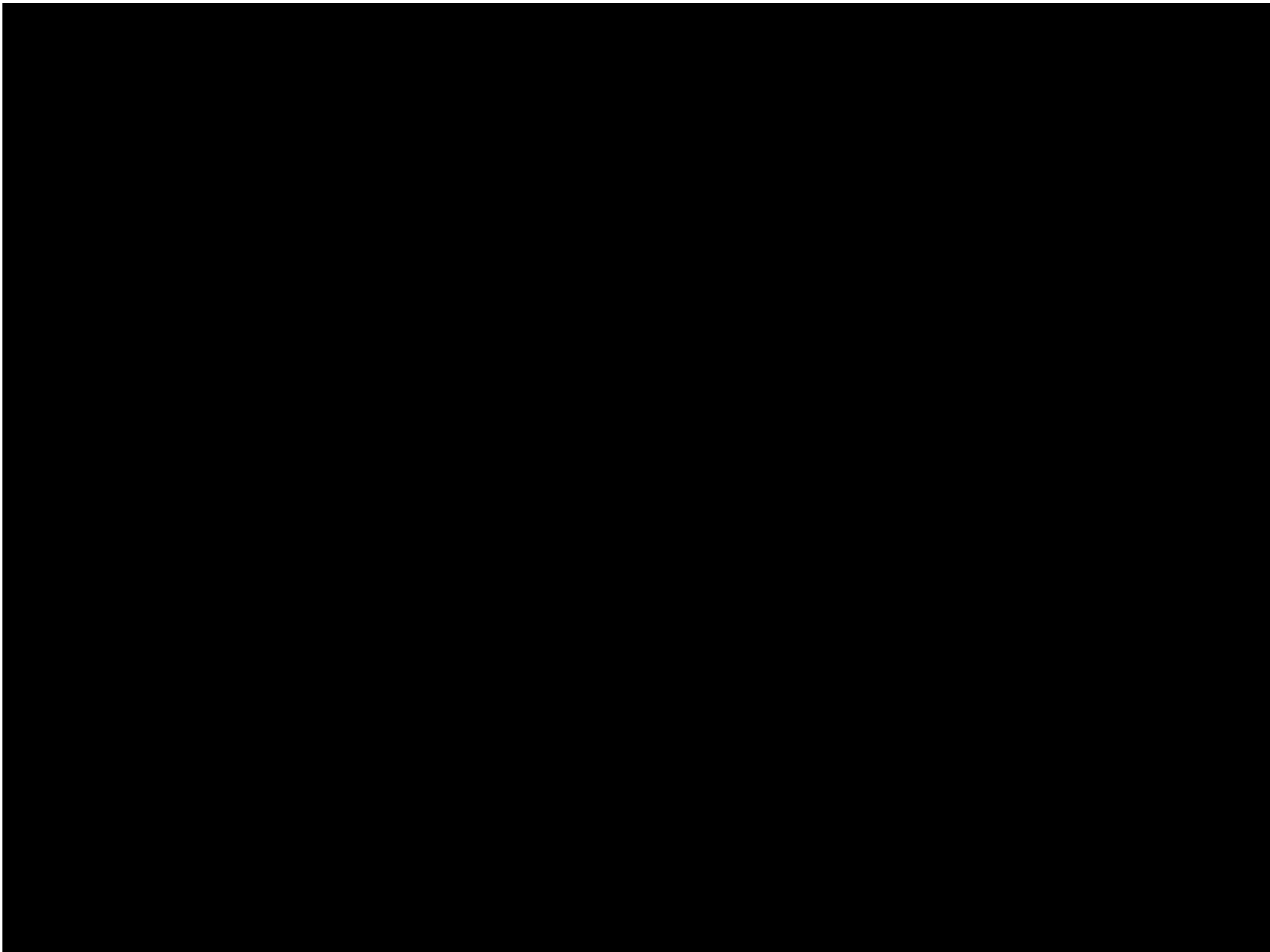
Clase 22

16/04/2013

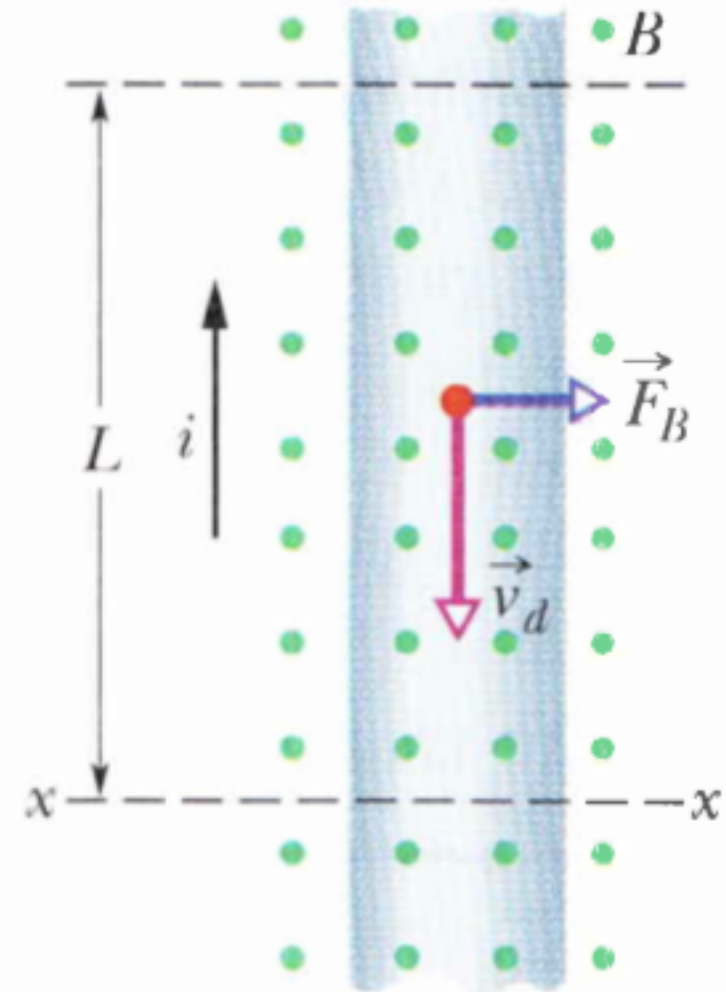
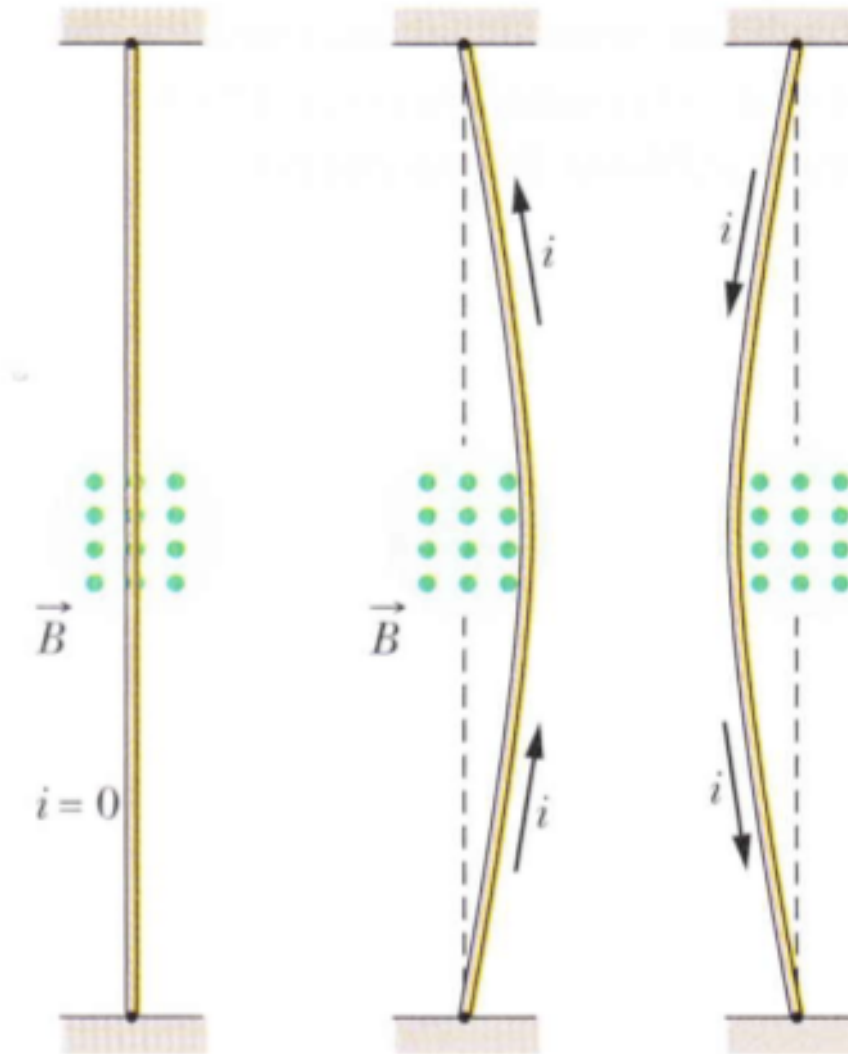
Lecturas 28.8 - 28.10



Ciclotrones y sincrotrones



Fuerza magnética en un alambre portador de carga

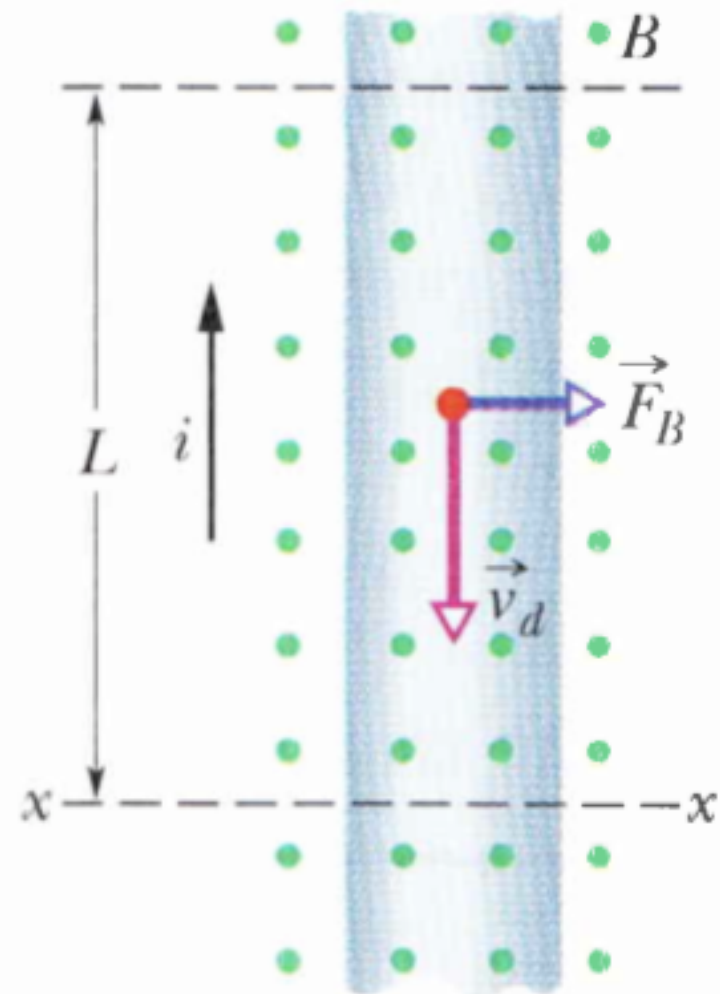


$$q = it = i \frac{L}{v_d}$$

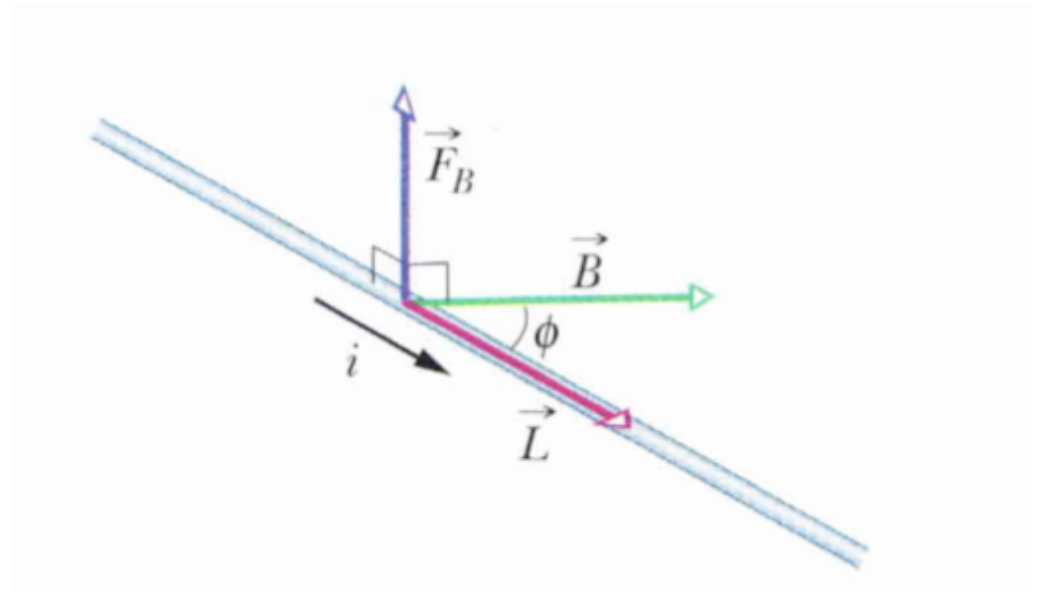
$$F_B = qv_d B \sin \phi = \frac{iL}{v_d} v_d B \sin 90^\circ$$

$$F_B = iLB.$$

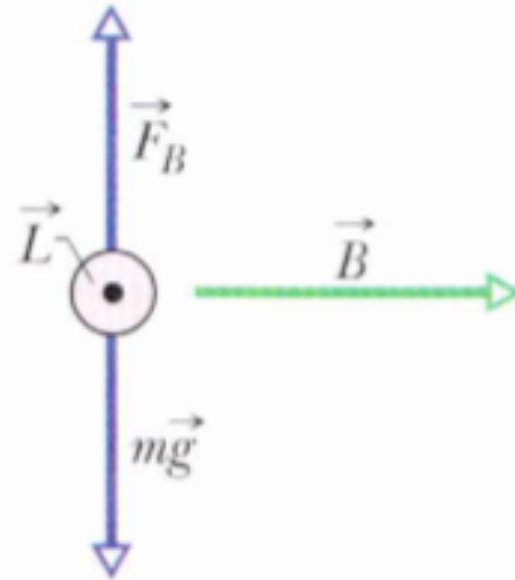
$$\vec{F}_B = i\vec{L} \times \vec{B}$$



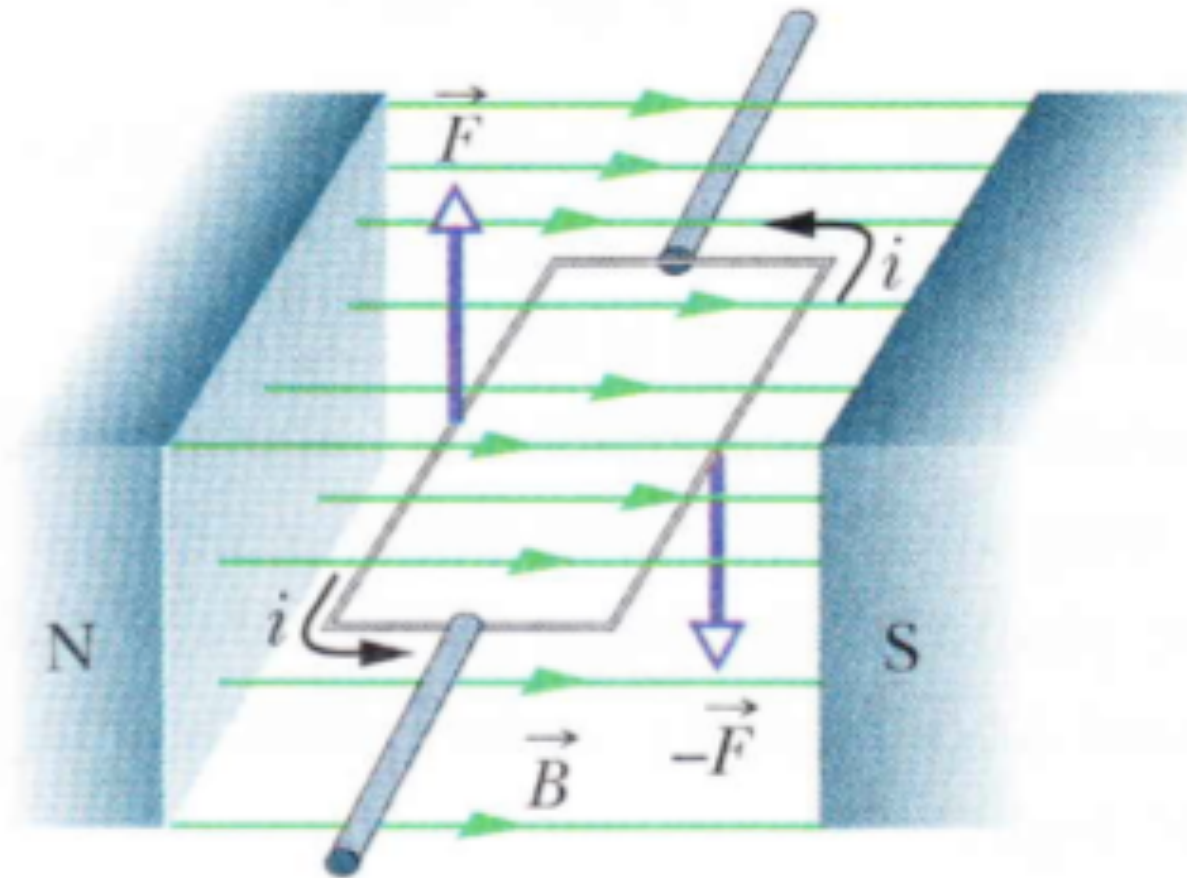
$$\vec{F}_B = i\vec{L} \times \vec{B}$$

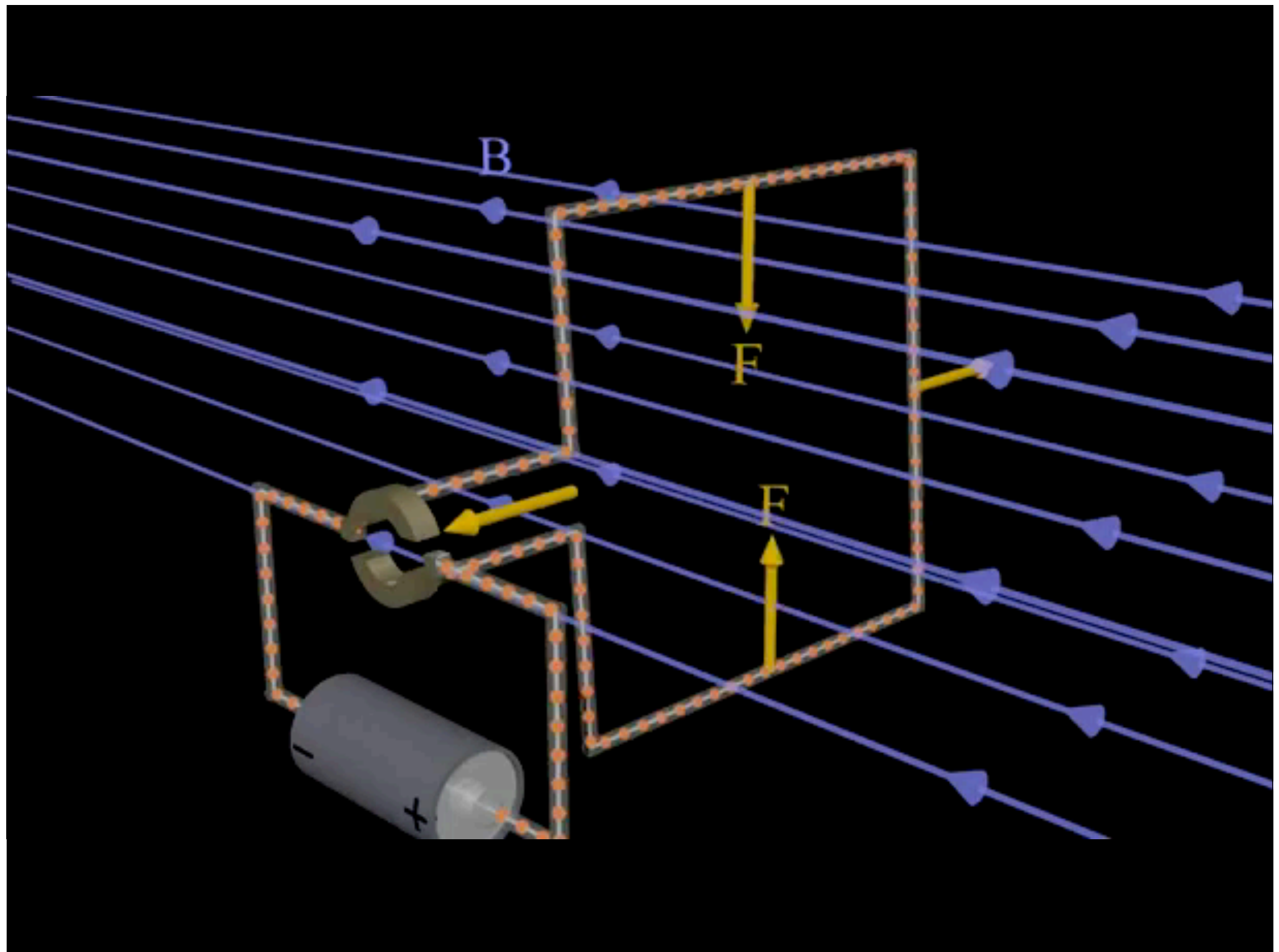


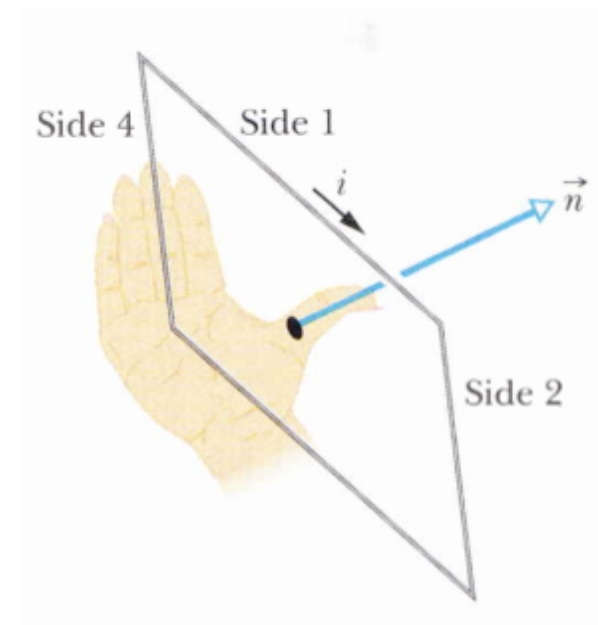
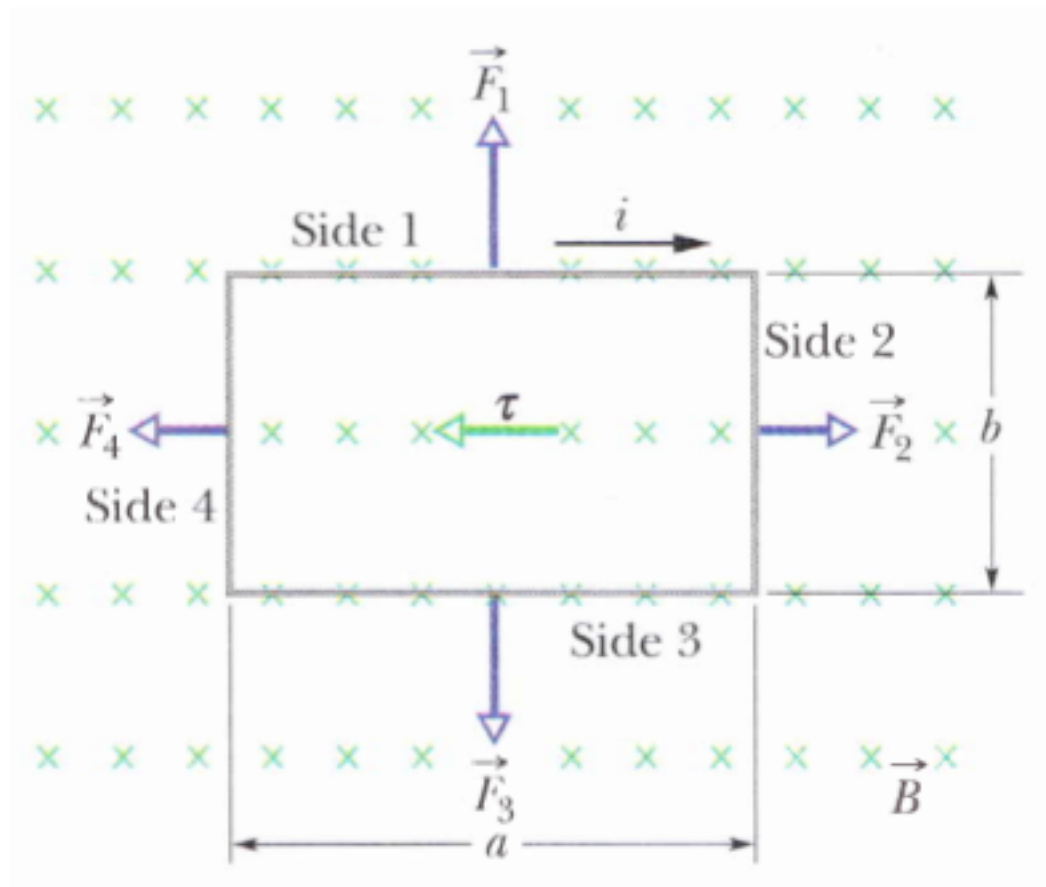
$$iLB \sin \phi = mg,$$



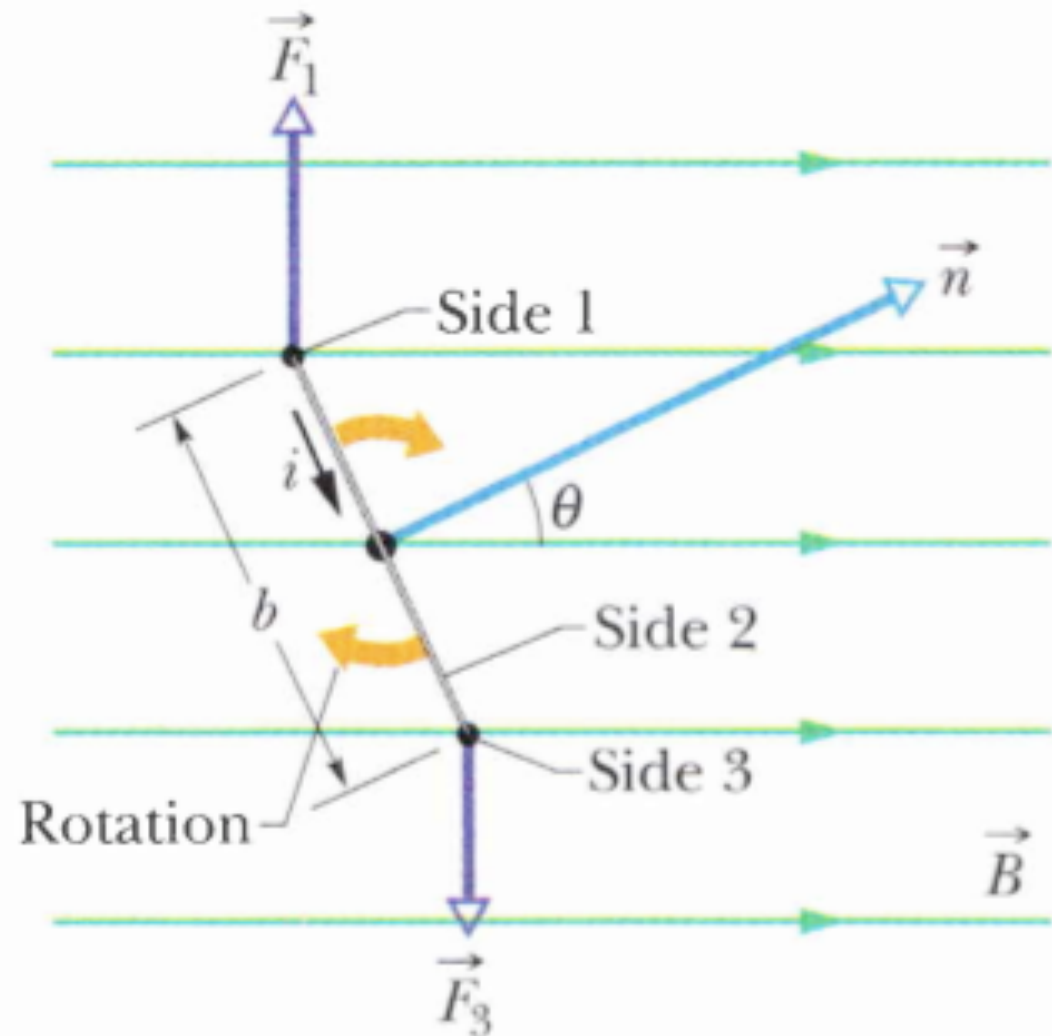
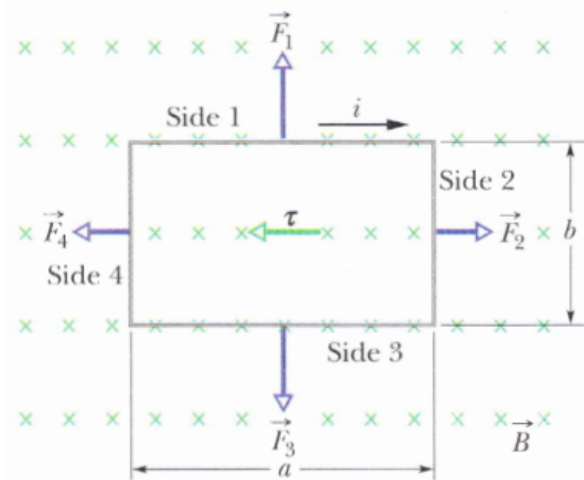
Torque en un lazo de corriente







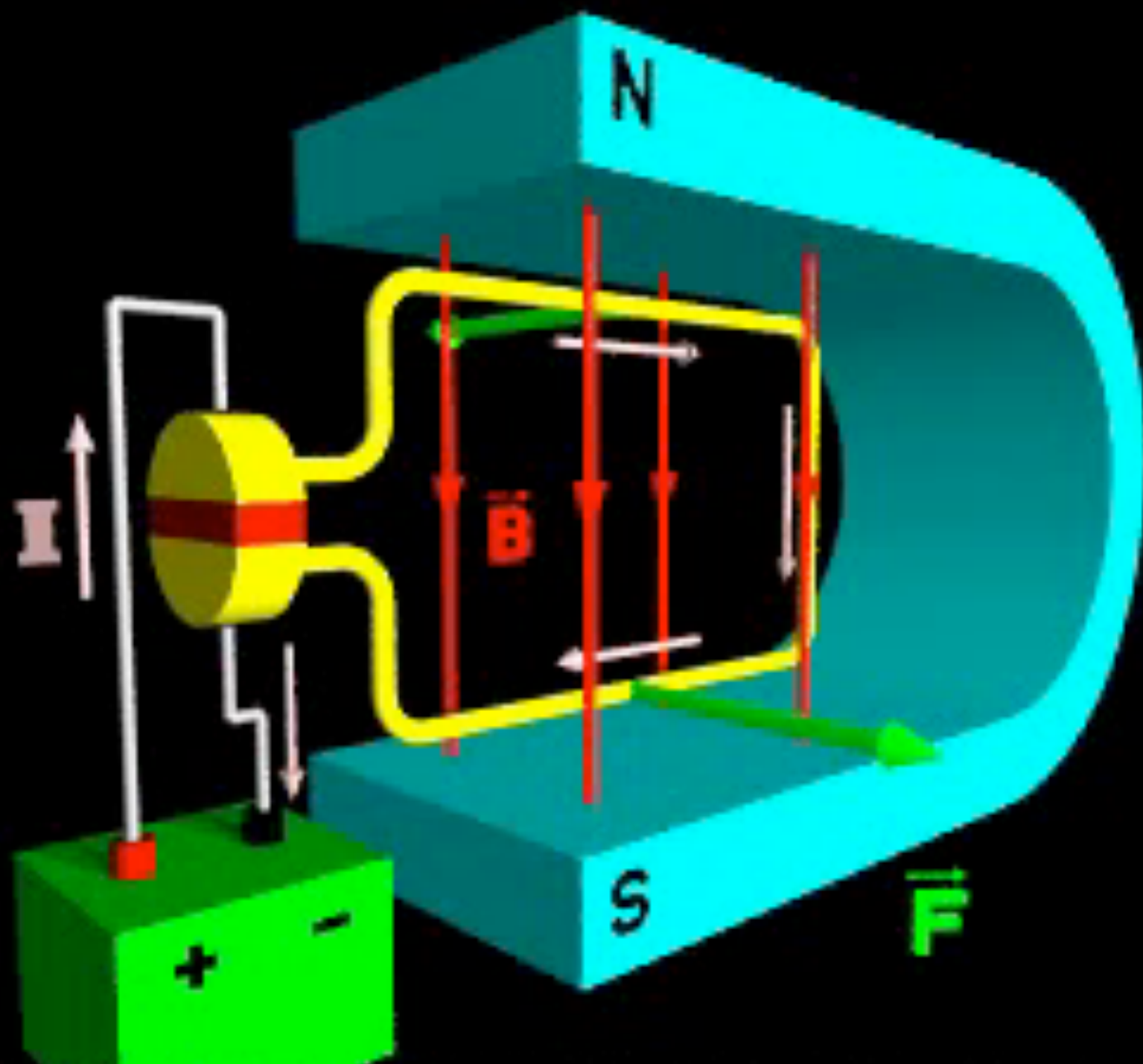
$$F_2 = ibB \sin(90^\circ - \theta) = ibB \cos \theta.$$



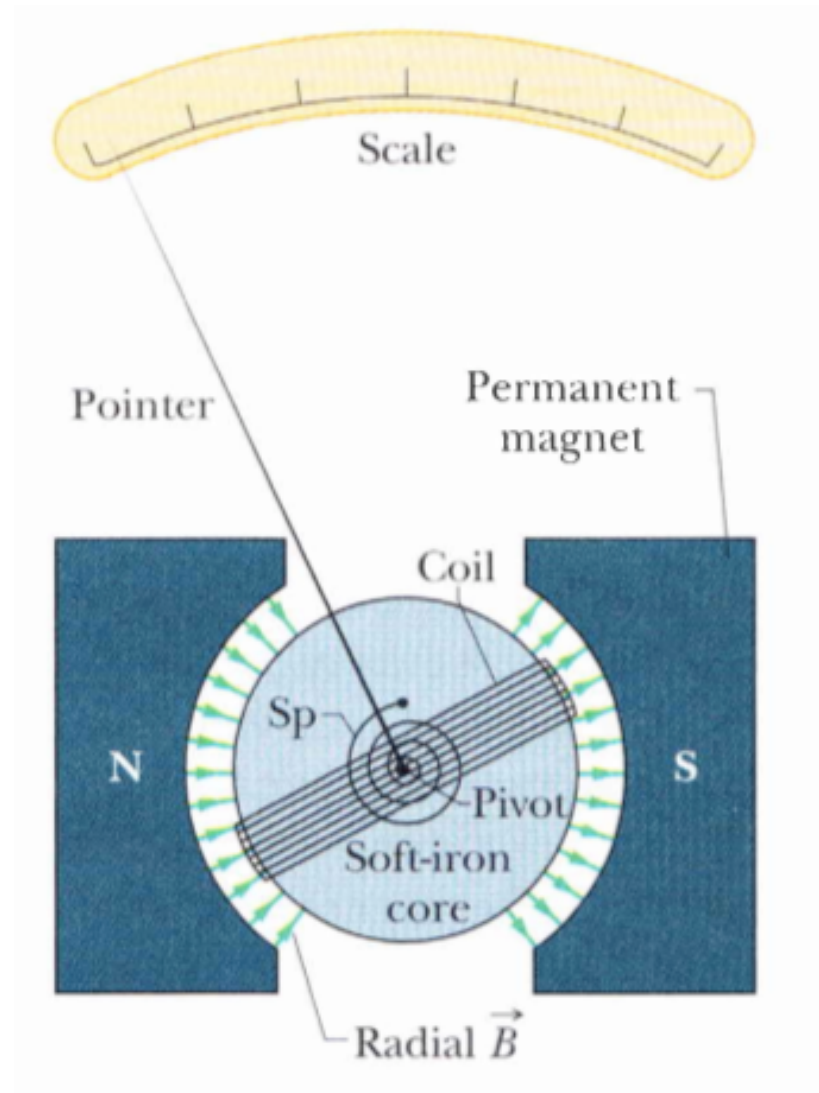
$$\tau' = \left(iaB \frac{b}{2} \sin \theta \right) + \left(iaB \frac{b}{2} \sin \theta \right) = iabB \sin \theta.$$

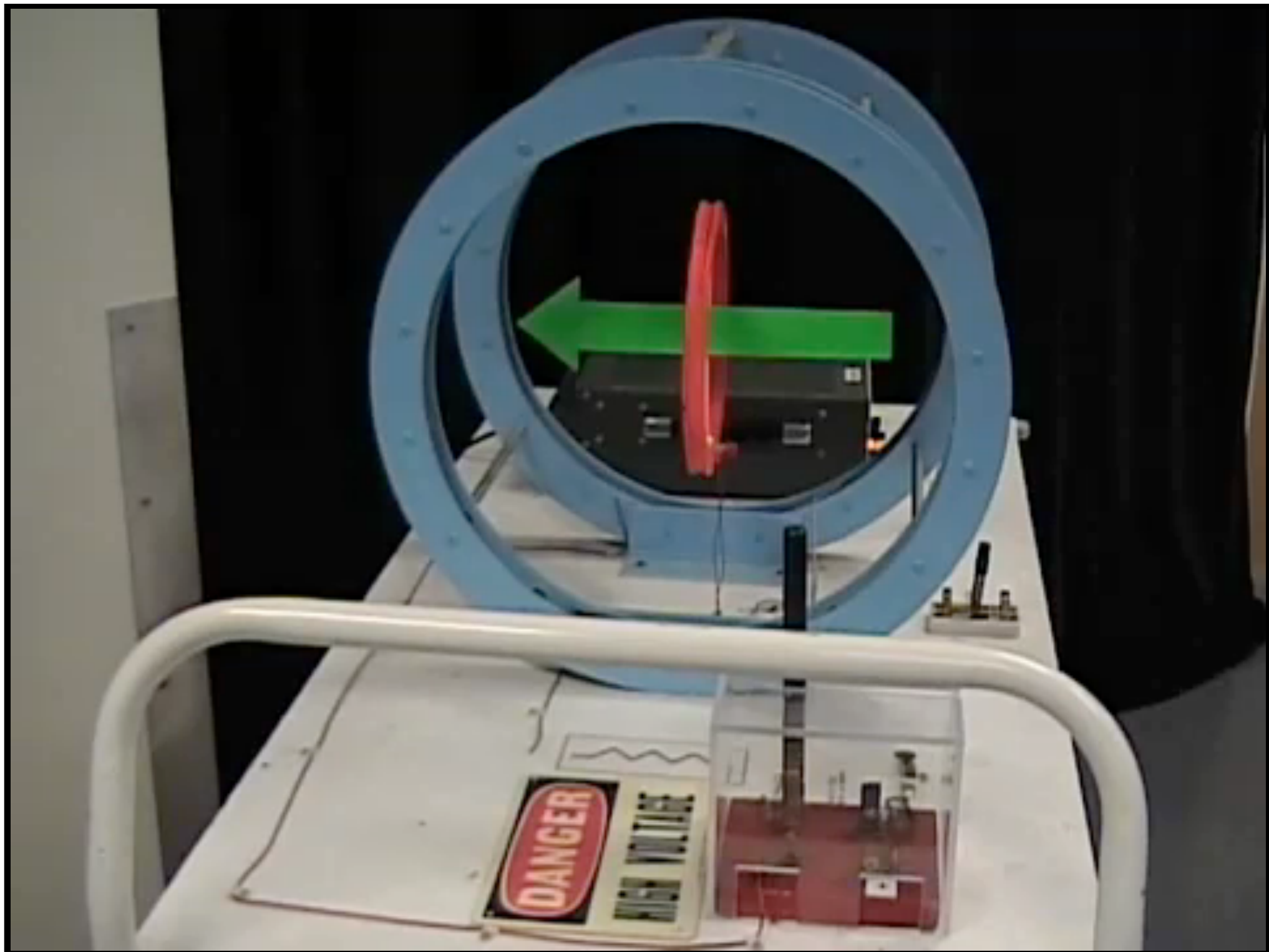
N vueltas

$$\tau = N\tau' = NiabB \sin \theta = (NiA)B \sin \theta,$$



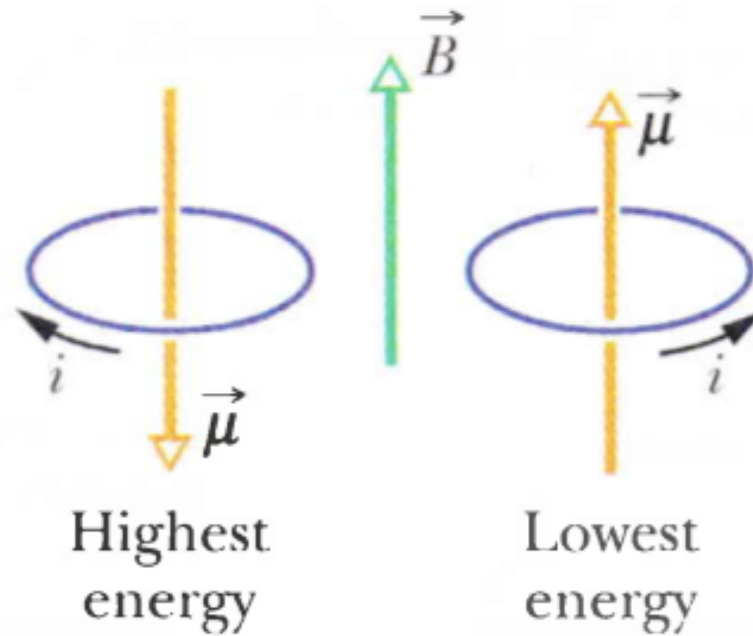
Galvanómetro





Momento dipolar magnético

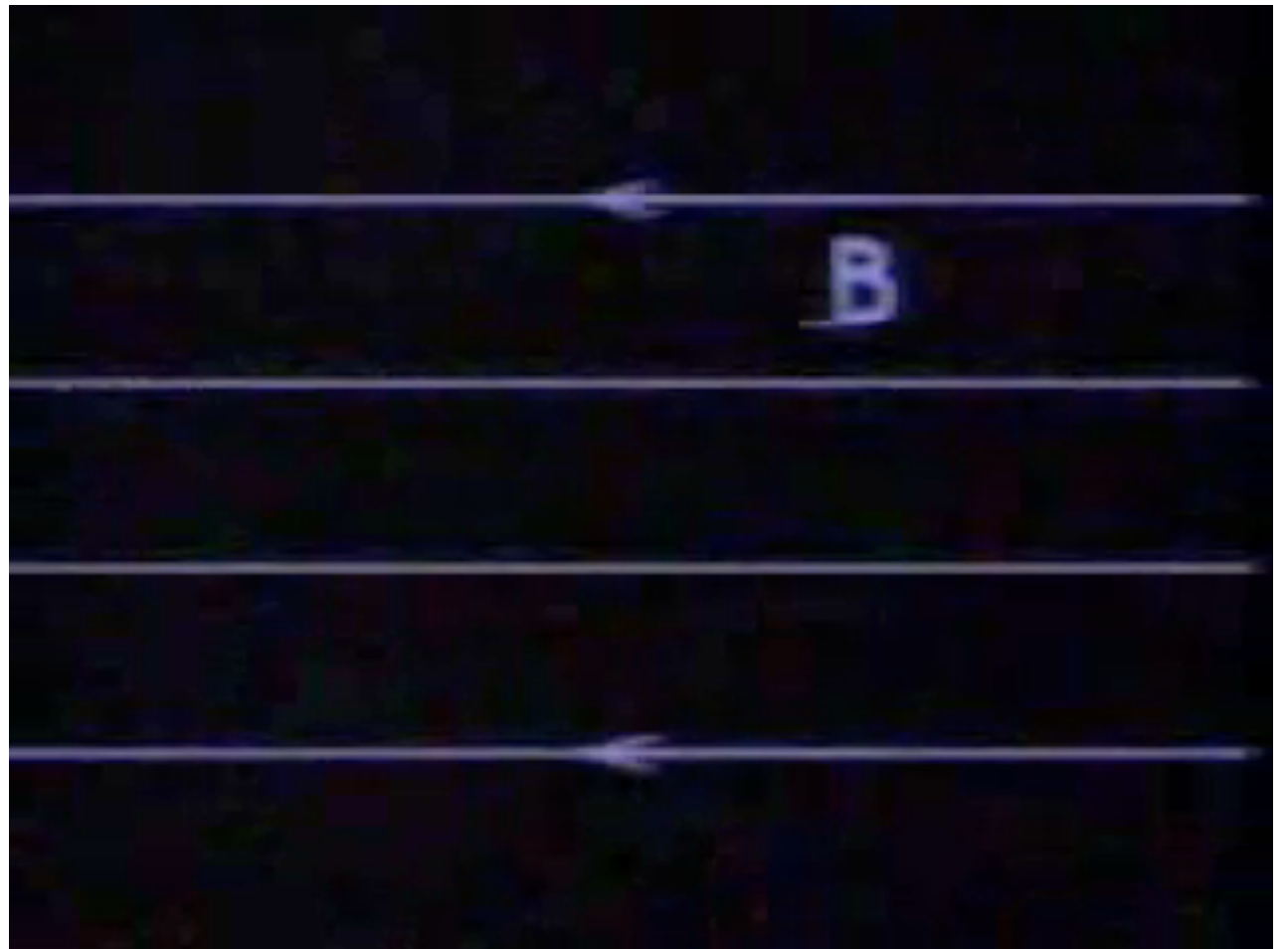
$$\mu = NiA$$



$$\tau = \mu B \sin \theta,$$

Energía potencial magnética

$$U(\theta) = -\vec{\mu} \cdot \vec{B}.$$



$$U(\theta) = -\vec{p} \cdot \vec{E}.$$