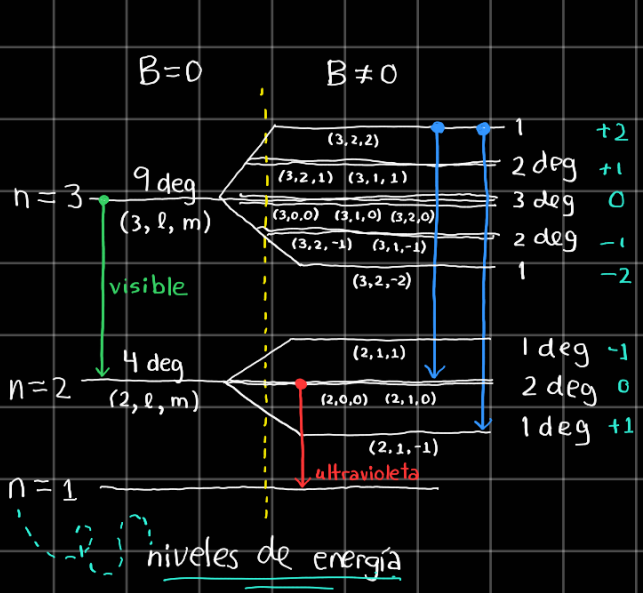
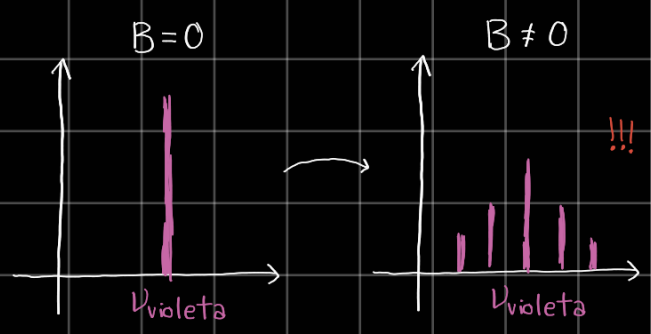
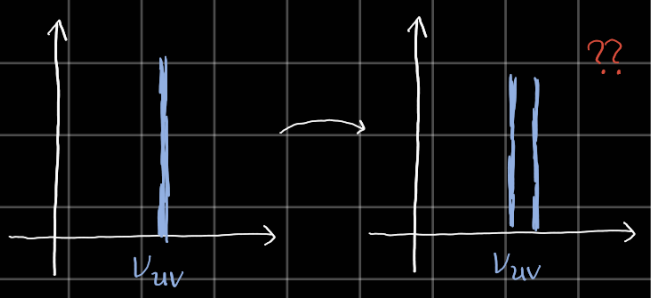
# COPIAR FALTANTE




Spin $\boxed{\ell=0}$ $\Delta\mathcal{E}_{2\to1} = h\nu_{uv}$ se "abre" en 2!!!

Goudsmit y Ulhenbeck, 1925 (?)

El electrón tiene un momento magnético

$$\vec{\mu} \simeq -g\frac{\mu_0}{\hbar}\vec{S}$$

Stern y Gerlach, 1922

donde $\vec{S}$ es un momento angular.

Pero si $\vec{S}$ es momento angular, $\vec{S} = \vec{S}_x\hat{\imath} + \vec{S}_y\hat{\jmath} + \vec{S}_z\hat{k}$ entonces

$$[\hat{S}_x, \hat{S}_y] = i\hbar\hat{S}_z \qquad [\hat{S}^2, \hat{S}_x] = [\hat{S}^2, \hat{S}_y] = [\hat{S}^2, \hat{S}_z] = 0$$

$$\Rightarrow \exists \text{ base } |s, m_s\rangle$$

$$\hat{S}^2|s, m_s\rangle = \hbar^2 s(s+1)|s, m_s\rangle$$

$$\hat{S}_z|s, m_s\rangle = \hbar^2 m_s|s, m_s\rangle$$

$m_s = -s, -s+1, \ldots, s-1, s \quad \Rightarrow \quad 2\ell+1 = 2 \quad \Rightarrow \quad \text{"}\ell\text{"} = \frac{1}{2} \quad \therefore \; m_s = \frac{1}{2}, -\frac{1}{2}$