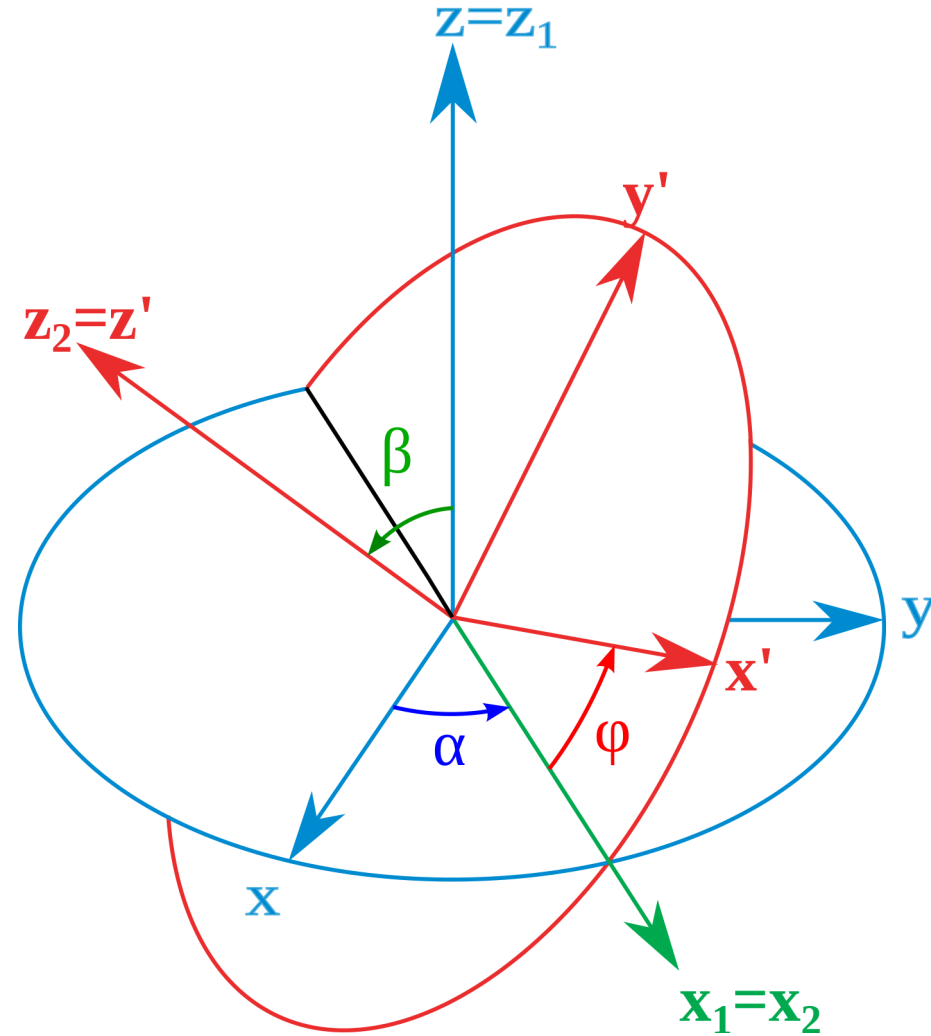


LP 04

Précession dans les domaines  
macroscopique et  
microscopique

# Angles d'Euler

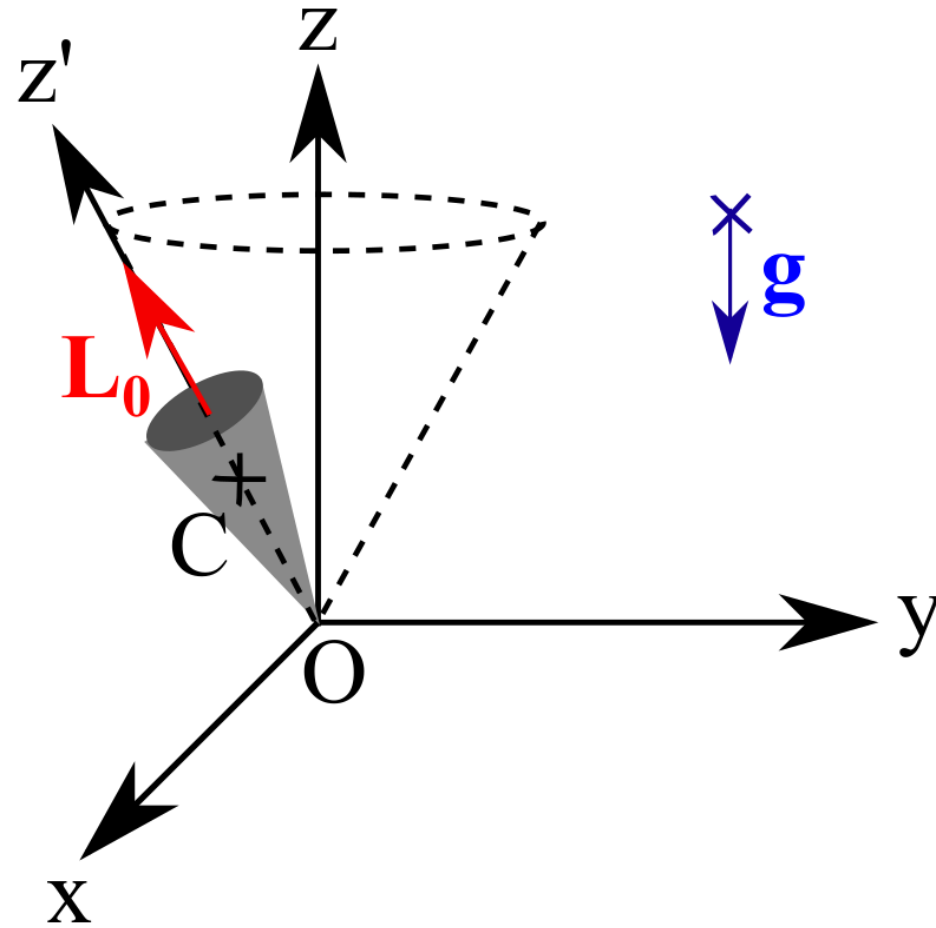


# Approximation gyroscopique

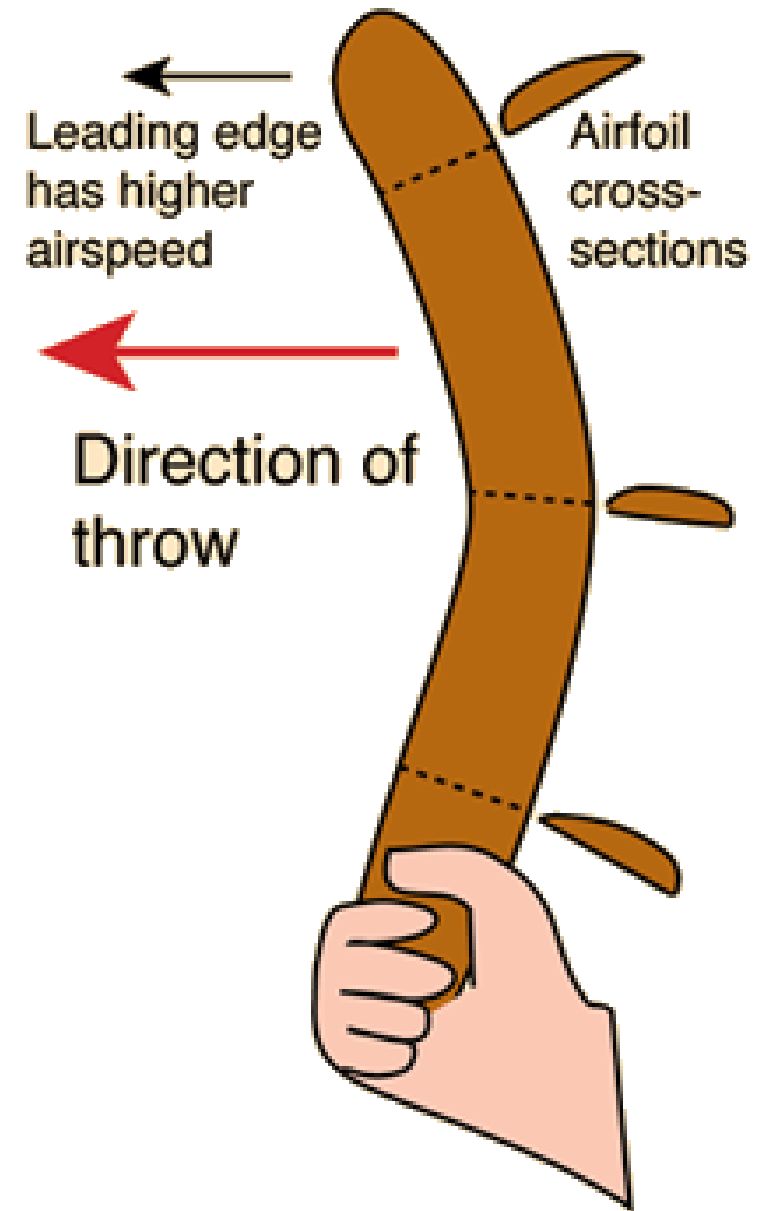
$$\vec{\omega}_{\mathcal{R}'} = \begin{pmatrix} \dot{\beta} \cos(\varphi) + \dot{\alpha} \sin(\beta) \sin(\varphi) \\ -\dot{\beta} \sin(\varphi) + \dot{\alpha} \sin(\beta) \cos(\varphi) \\ \dot{\varphi} + \dot{\alpha} \cos(\beta) \end{pmatrix}_{\mathcal{R}'} \simeq \dot{\varphi} \vec{e}_{z'}$$

$$\vec{L} = \begin{pmatrix} I_1 & 0 & 0 \\ 0 & I_2 & 0 \\ 0 & 0 & I_3 \end{pmatrix}_{\mathcal{R}'} \quad \vec{\omega}_{\mathcal{R}'} \simeq I_3 \dot{\varphi} \vec{e}_{z'}$$

# Mouvement d'une toupie



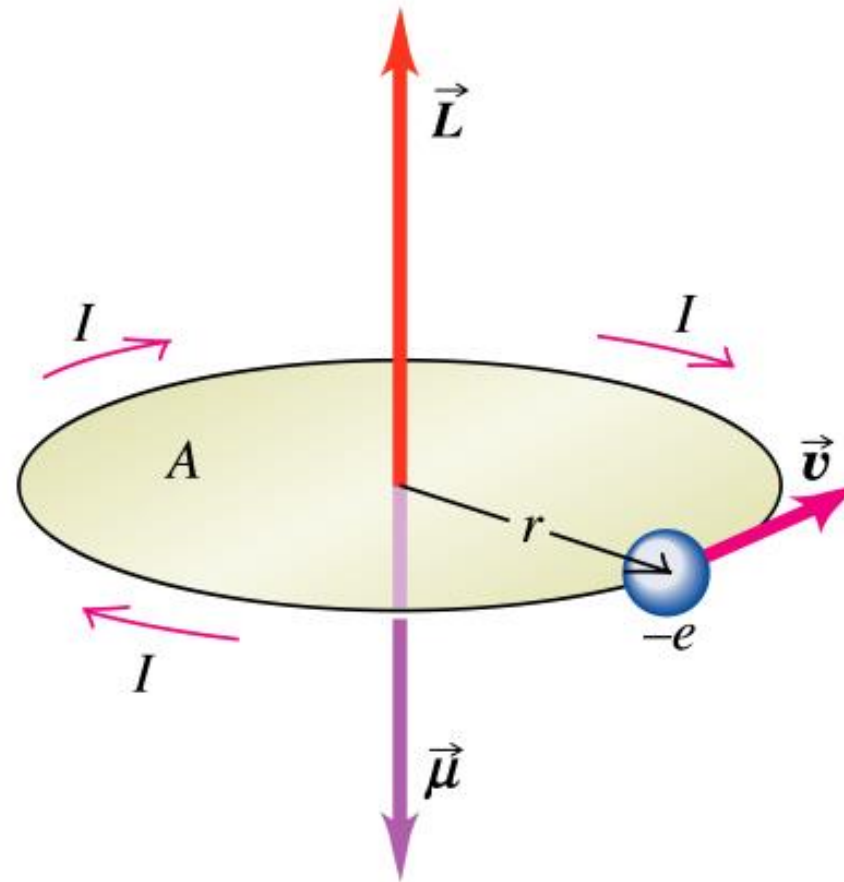
# Boomerang



# Equation de précession

$$\left. \frac{d\vec{L}}{dt} \right|_{\mathcal{R}} = \vec{\omega} \wedge \vec{L}$$

# Moment magnétique d'un électron



# RMN du proton

Ethanol

