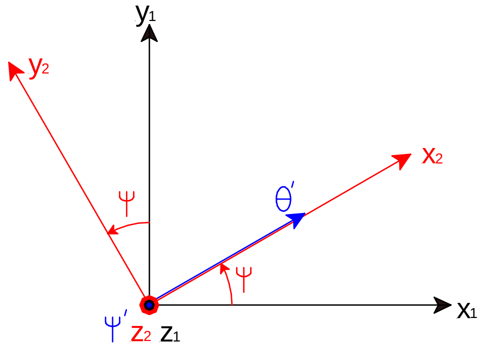
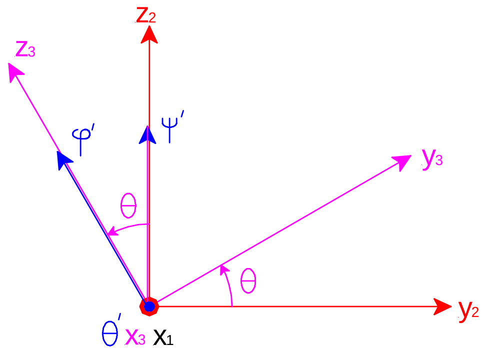
Angles d'Euler



PRECESSION :

$$\vec{\Omega}_{2/1} = \psi' \,\vec{z_2}$$

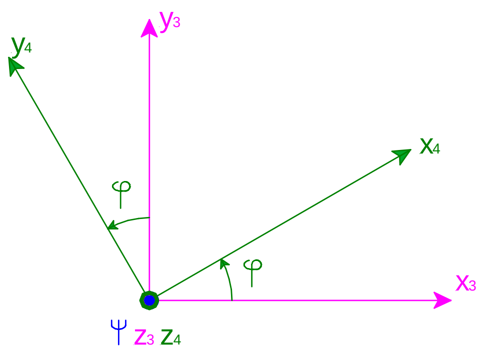
$$\vec{\psi} = (\vec{x_1}\,,\,\vec{x_2})$$



NUTATION :

$$\vec{\Omega}_{3/2} = \theta' \,\vec{x_2}$$

$$\vec{\theta} = (\vec{y_2}\,,\,\vec{y_3})$$



ROTATION PROPRE :

$$\vec{\Omega}_{4/3} = \varphi' \,\vec{z_2}$$

$$\vec{\varphi} = (\vec{x_3}\,,\,\vec{x_4})$$

● Représente les axes vus de dessus (normaux au plan de la figure)

$$\vec{\Omega}_{4/1} = \vec{\Omega}_{4/3} + \vec{\Omega}_{3/2} + \vec{\Omega}_{2/1} = \varphi' \,\vec{z_3} + \theta' \,\vec{x_2} + \psi' \,\vec{z_2}$$

$$\vec{\Omega}_{4/1} = \left.\begin{array}{c} \theta' \\ \psi' \sin\theta \\ \varphi' + \psi' \cos\theta \end{array}\right|_{R_3} = \left.\begin{array}{c} \theta' \\ -\varphi' \sin\theta \\ \varphi' \cos\theta + \psi' \end{array}\right|_{R_2}$$

$$= \left.\begin{array}{c} \theta' \cos\psi - \varphi' \sin\theta \sin\psi \\ \theta' \sin\psi - \varphi' \sin\theta \cos\psi \\ \psi' + \varphi' \cos\theta \end{array}\right|_{R_1} = \left.\begin{array}{c} s\,(\theta\,,\varphi\,,\psi) \\ t\,(\theta\,,\varphi\,,\psi) \\ u\,(\theta\,,\varphi\,,\psi) \end{array}\right|_{R_4}$$