

August 23, 2023

Abstract

Ejercicio 2

Rotación $R_x(\alpha)$:

$$R_x(\alpha) = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos(\alpha) & -\sin(\alpha) \\ 0 & \sin(\alpha) & \cos(\alpha) \end{bmatrix} = \begin{bmatrix} 1 & 0 & 0 \\ 0 & -0,2225209340 & -0,9749279122 \\ 0 & 0,9749279122 & 0,2225209340 \end{bmatrix} \quad (1)$$

Rotación $R_x(\alpha)R_y(\beta)R_z(\gamma)$:

$$\begin{bmatrix} 3.0616e-17 & 5.3029e-17 & 1.0000e+00 \\ 6.8017e-01 & 7.3305e-01 & -5.9697e-17 \\ -7.3305e-01 & 6.8017e-01 & -1.3625e-17 \end{bmatrix} \quad (2)$$

Calculo yaw pitch y roll

yaw γ :

$$\gamma = \arctan_2(R_{12}, R_{11}) = 0/0 \text{ Kaputt} \quad (3)$$

pitch β :

$$\beta = \arctan_2(-) \quad (4)$$

Ejercicio 3

Para pasar de A a W

$${}^W\xi_A = \begin{bmatrix} \cos(\theta) & -\sin(\theta) & A_x \\ \sin(\theta) & \cos(\theta) & A_y \\ 0 & 0 & 1 \end{bmatrix} \quad (5)$$

Para pasar de W a A

$${}^A\xi_W = {}^W\xi_A^{-1} \quad (6)$$