

$$\delta_t = 1^*(\pi/180) = 0.0175 \text{ [rad]}$$

$$\varepsilon_v = -3^*(\pi/180) = -0.0524 \text{ [rad]}$$

Euler angles rotation sequence is Z-X-Y

$$R = A_3 * A_2 * A_1$$

$$A_3 = \begin{bmatrix} \cos \delta_t & \sin \delta_t & 0 \\ -\sin \delta_t & \cos \delta_t & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

$$A_2 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos \varepsilon_v & \sin \varepsilon_v \\ 0 & -\sin \varepsilon_v & \cos \varepsilon_v \end{bmatrix}$$

$$A_1 = \begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$$

After substitution of the angles and multiplication of the direction cosine matrices you end up with the rotation matrix (or transformation tensor).

$$R = \begin{bmatrix} 0.9998 & 0.0175 & 0 \\ -0.0174 & 0.9985 & -0.0523 \\ -0.0009 & 0.0523 & 0.9986 \end{bmatrix}$$