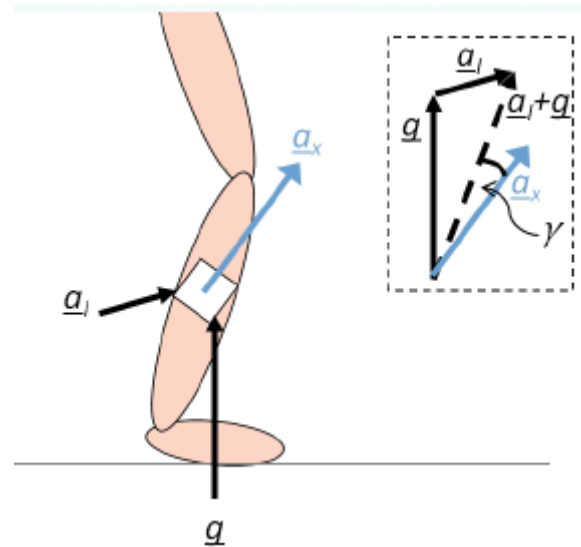
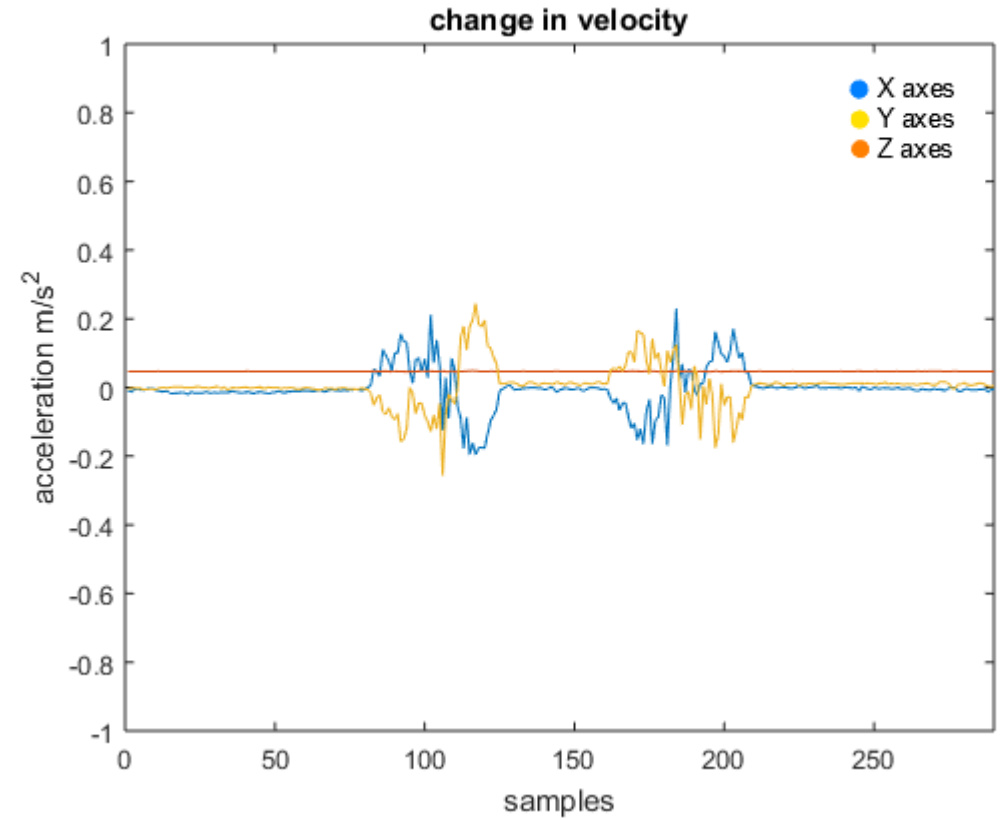
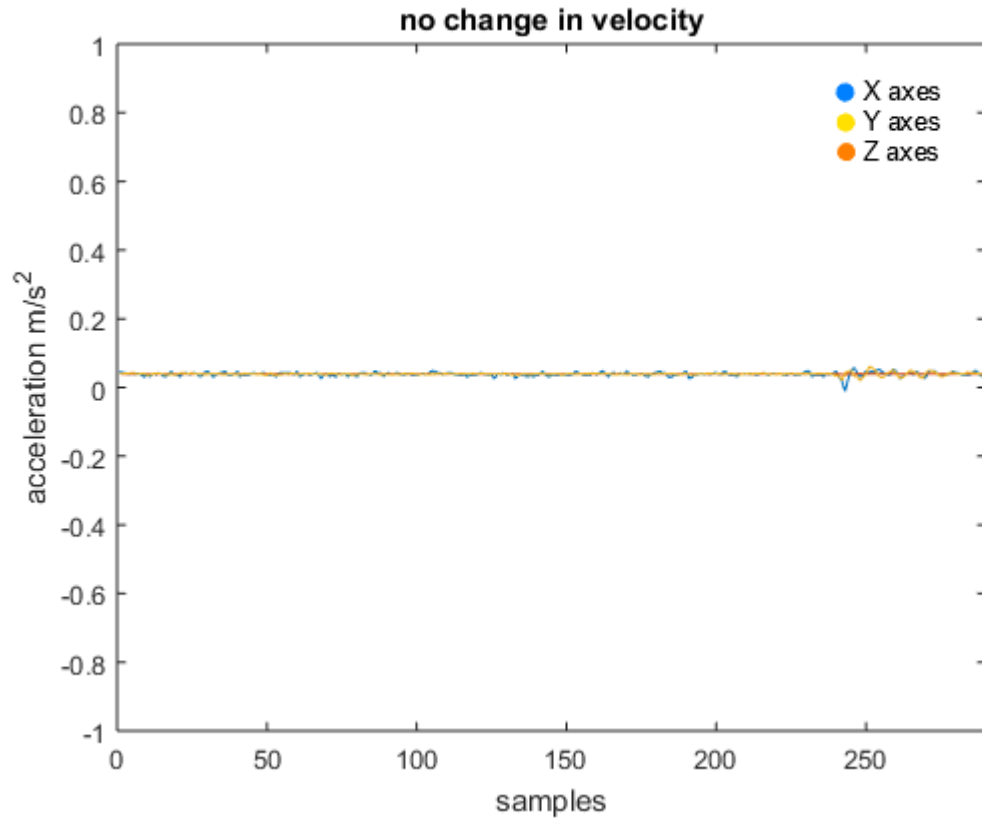


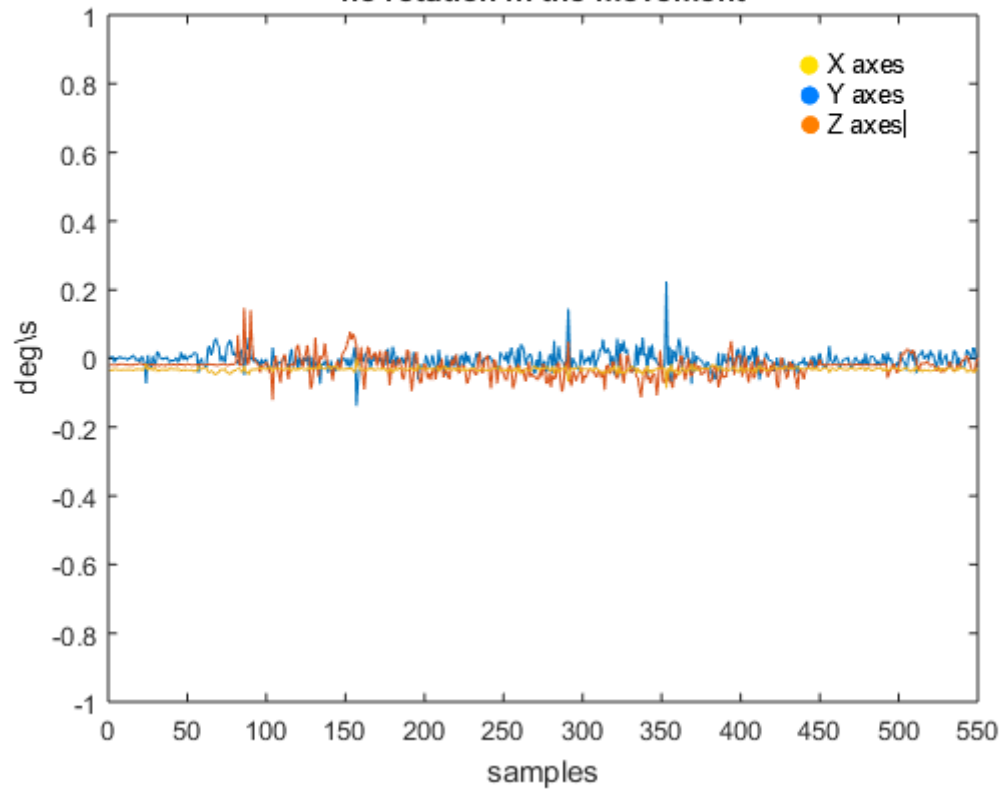
Acceleration



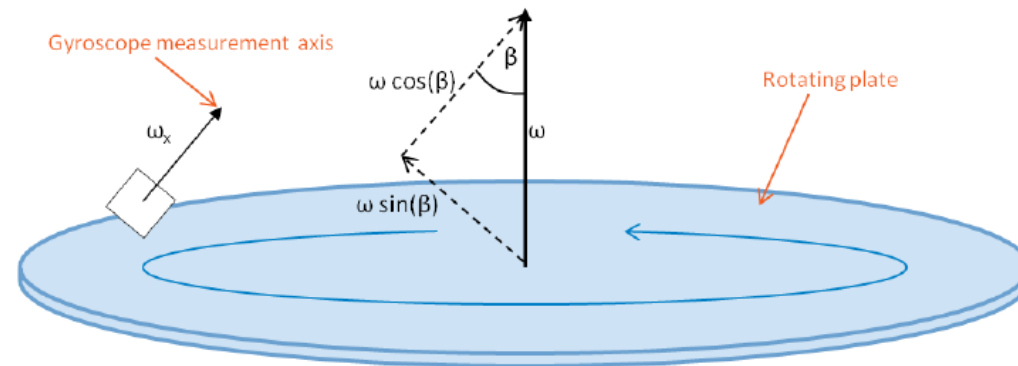
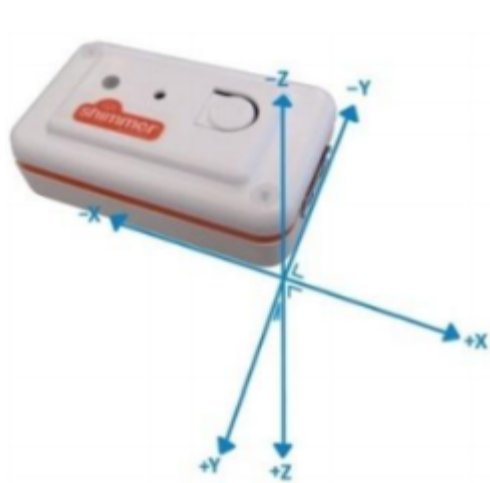
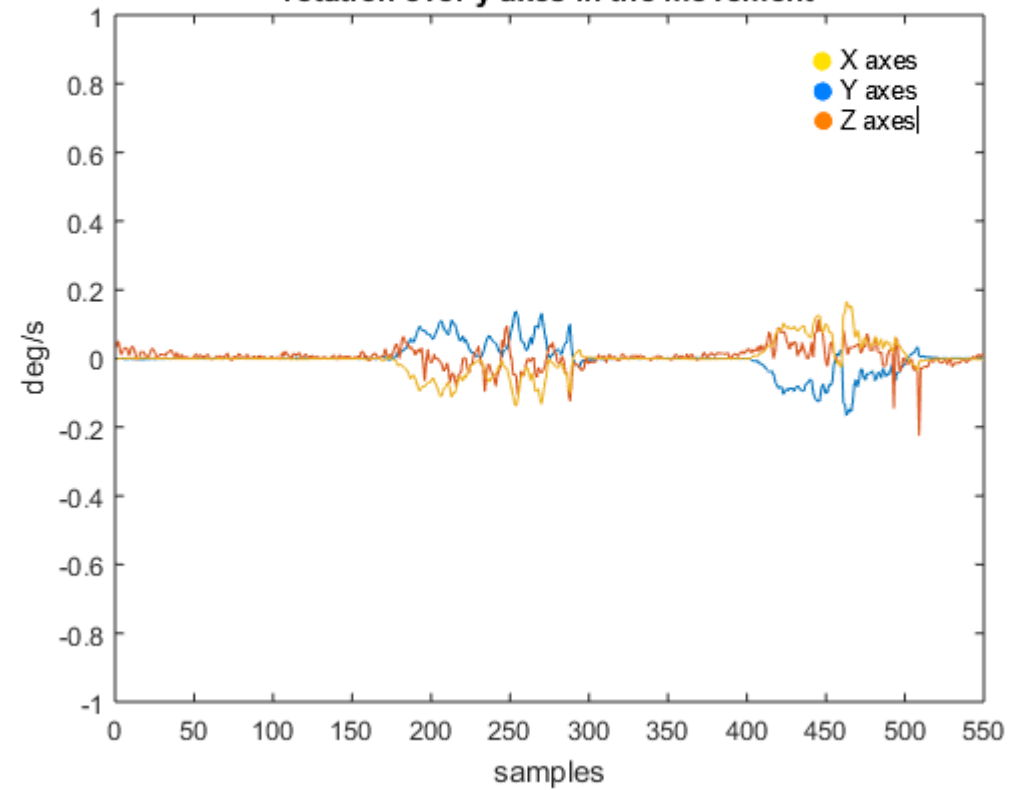
$$\underline{a} = \begin{bmatrix} a_x \\ a_y \\ a_z \end{bmatrix} = \begin{bmatrix} a_I \cos(\theta_x) + g \cos(\varphi_x) \\ a_I \cos(\theta_y) + g \cos(\varphi_y) \\ a_I \cos(\theta_z) + g \cos(\varphi_z) \end{bmatrix},$$

Gyroscope

no rotation in the movement

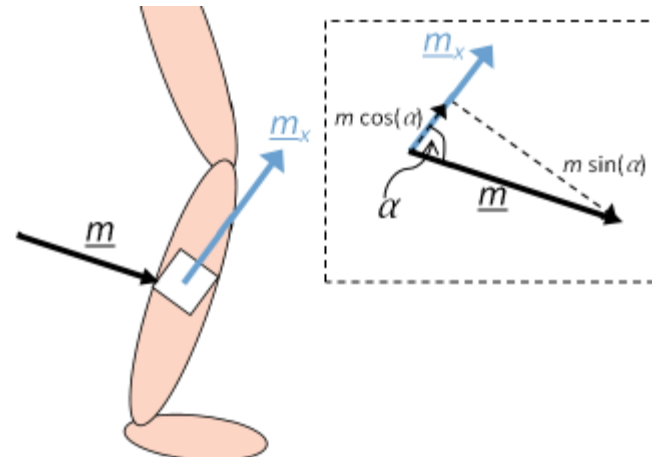
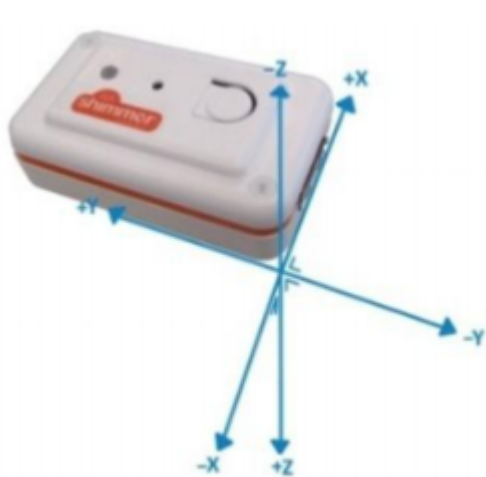
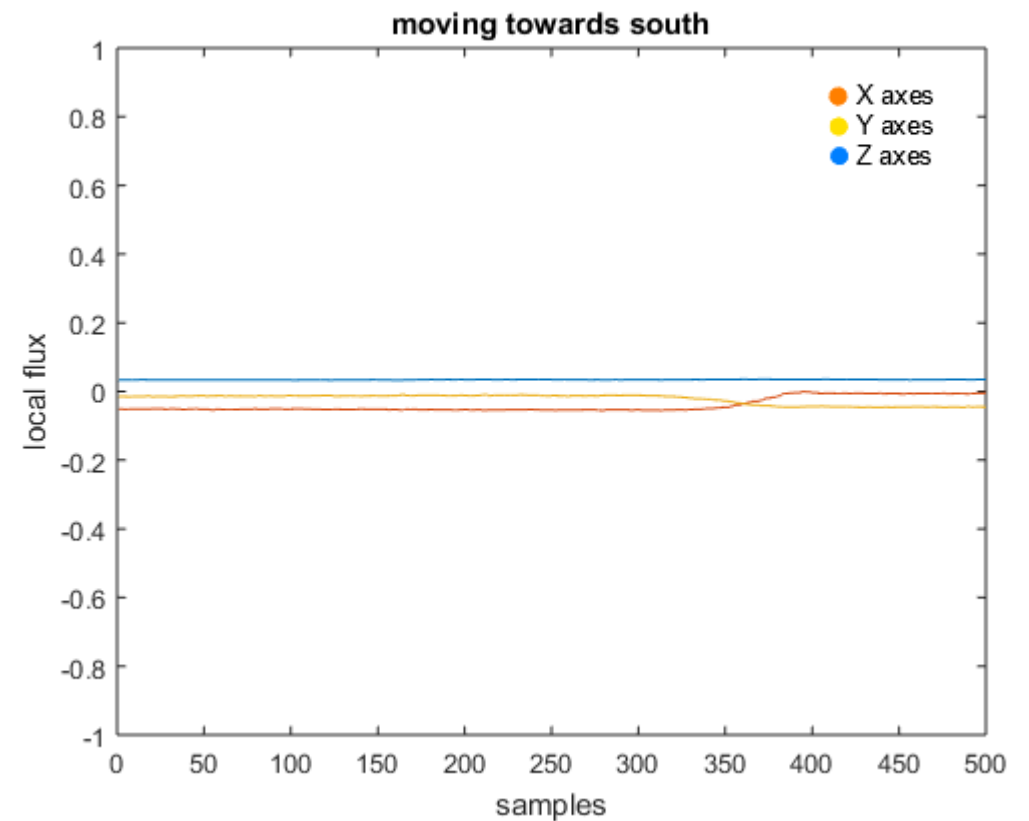
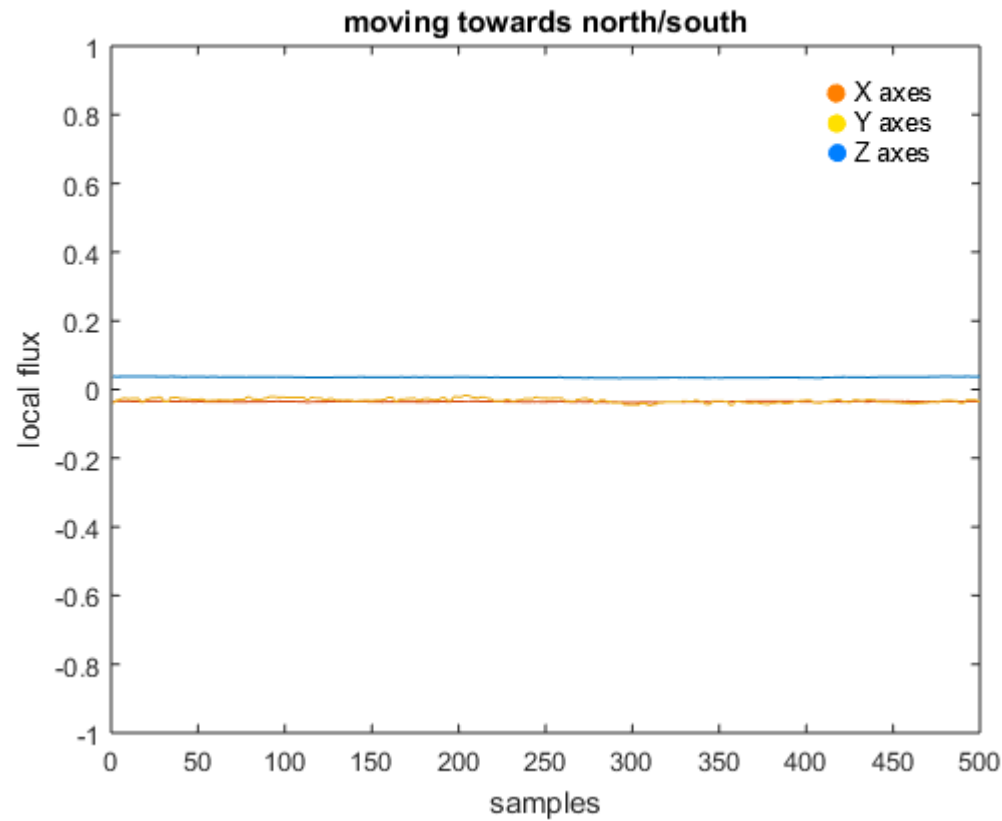


rotation over y axes in the movement



$$\underline{\omega} = \begin{bmatrix} \omega_x \\ \omega_y \\ \omega_z \end{bmatrix} = \begin{bmatrix} \omega \cos(\beta_x) \\ \omega \cos(\beta_y) \\ \omega \cos(\beta_z) \end{bmatrix},$$

Magnetometer



$$\underline{m} = \begin{bmatrix} m_x \\ m_y \\ m_z \end{bmatrix} = \begin{bmatrix} m \cos(\alpha_x) \\ m \cos(\alpha_y) \\ m \cos(\alpha_z) \end{bmatrix}$$