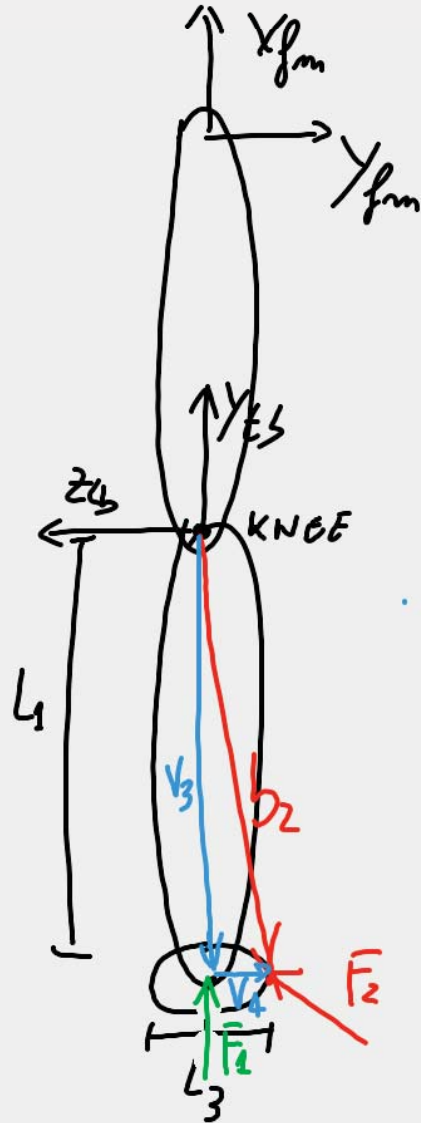
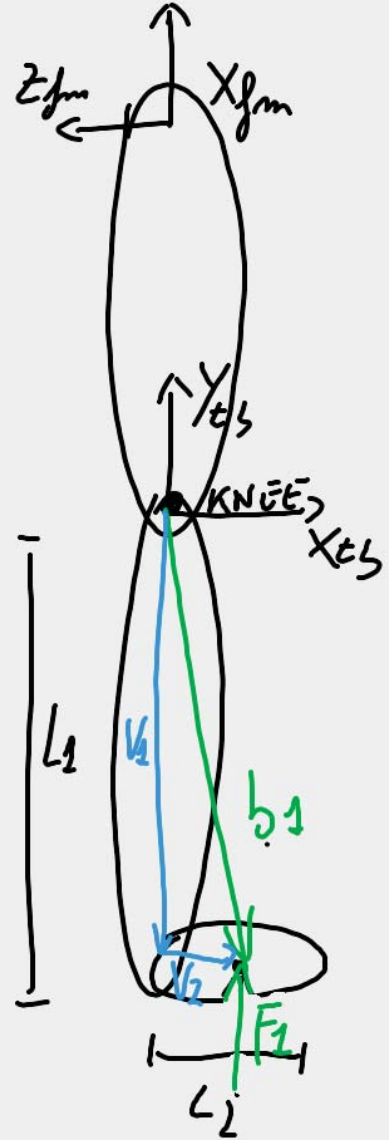


FEB 2022



$$\vec{b}_2 = \vec{V}_3 + \vec{V}_4$$

$${}^{fcm}V_4 = \begin{bmatrix} 0 \\ \frac{L_3}{2} \\ 0 \end{bmatrix}$$

$${}^{fcm}V_3 = {}^{fcm}V_1 + {}^{fcm}V_2 = \begin{bmatrix} -L_1 \\ 0 \\ -\frac{L_2}{2} \end{bmatrix}$$

$$\vec{m} = \vec{m}_1 + \vec{m}_2$$

$$\vec{m}_1 = \vec{b}_1 \times \vec{F}_1$$

$$\vec{b}_2 = \vec{V}_3 + \vec{V}_4$$

$${}^{fcm}V_2 = \begin{bmatrix} -L_1 \\ 0 \\ 0 \end{bmatrix}$$

$${}^{fcm}V_1 = \begin{bmatrix} 0 \\ 0 \\ -\frac{L_2}{2} \end{bmatrix}$$

$$\text{from } \vec{F}_1 = \begin{bmatrix} 90 \\ 0 \\ 0 \end{bmatrix} \text{ N}$$

$$\text{from } \vec{F}_2 = \begin{bmatrix} 50 \sin(15^\circ) \\ -50 \cos(15^\circ) \\ 0 \end{bmatrix}$$