



$$\dot{x} = Ax + Bu$$

$$u = [F]$$

$$x = \begin{bmatrix} x_{k_1} \\ x_{k_2} \\ v_{m_1} \\ v_{m_2} \end{bmatrix}$$

$$\frac{d^4 v_{m_1}}{dt^4} + a_3 \frac{d^3 v_{m_1}}{dt^3} + a_2 \frac{d^2 v_{m_1}}{dt^2}$$

$$+ a_1 v_{m_1} = b F$$