



$$\left\{ \begin{array}{l} \frac{d^2}{dt^2}x_1 = \frac{K_2x_2}{M} + \frac{x_1 \left( -\frac{4K_1\left(\frac{L}{2}-\ell_0\right)}{L} - 2K_2 \right)}{M} \\ \frac{d^2}{dt^2}x_2 = \frac{K_2x_1}{M} + \frac{x_2 \left( -\frac{4K_1\left(\frac{L}{2}-\ell_0\right)}{L} - 2K_2 \right)}{M} \end{array} \right.$$