



$$\ddot{x}_1(t) = \frac{-b_1 \dot{x}_1(t) - k_1 x_1(t) + b_2 (\dot{x}_2(t) - \dot{x}_1(t)) + k_2 (x_2(t) - x_1(t))}{m_1}$$

$$\ddot{x}_2(t) = \frac{F(t) - b_2 (\dot{x}_2(t) - \dot{x}_1(t)) - k_2 (x_2(t) - x_1(t))}{m_2}$$