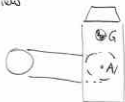


field view

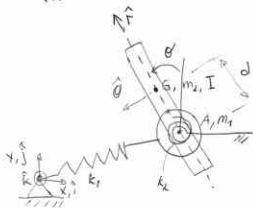


25.7.2021  
A. K. S. S.

top view



vibration model



Equations of motion

$$x: (m_1 + m_2) \ddot{x} - \cos(\theta) m_2 d \ddot{\theta} + \sin(\theta) m_2 d \dot{\theta}^2 + k_1 x = 0$$

$$y: (m_1 + m_2) \ddot{y} - \sin(\theta) m_2 d \ddot{\theta} - \cos(\theta) m_2 d \dot{\theta}^2 + k_1 y = 0$$

$$\theta: (I + m_2 d^2) \ddot{\theta} - \cos(\theta) m_2 d \ddot{x} - \sin(\theta) m_2 d \ddot{y} + k_2 \theta = 0$$

$$x: \ddot{x} = \frac{1}{m_1 + m_2} [\cos(\theta) m_2 d \ddot{\theta} - \sin(\theta) m_2 d \dot{\theta}^2 - k_1 x]$$

$$y: \ddot{y} = \frac{1}{m_1 + m_2} [\sin(\theta) m_2 d \ddot{\theta} + \cos(\theta) m_2 d \dot{\theta}^2 - k_1 y]$$

$$\theta: \ddot{\theta} = \frac{1}{I + m_2 d^2} [\cos(\theta) m_2 d \ddot{x} + \sin(\theta) m_2 d \ddot{y} - k_2 \theta]$$