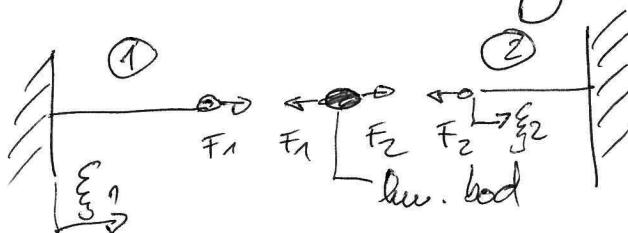


(1) Počáteční kmitání

$$\frac{\partial^2 \xi}{\partial t^2} = C_0 \frac{\partial^2 \xi}{\partial x^2}$$

Počáteční nařízený



1. úsek

$$\xi_1(x_1=0, t) = 0 \\ \text{okr. podm.}$$

$$F_1 = EA_1 \dot{\xi}_1 = \\ = EA_1 \frac{\partial \xi_1(l_1, t)}{\partial x_1} = EA X_1'(l_1) T_1(t)$$

2. úsek

$$\xi_2(x_2=l_2, t) = 0$$

$$F_2 = EA_2 \dot{\xi}_2 = \\ = EA_2 \frac{\partial \xi_2(0, t)}{\partial x_2} = EA X_2'(0) T_2(t)$$

Musí platit, že

$$\xi_1(x_1=l_1, t) = \xi_2(x_2=0, t)$$

Počáteční hmotnost

$$u \frac{\partial^2 \xi_2(0, t)}{\partial t^2} = F_2 - F_1 = u \frac{\partial^2 \xi_1(l_1, t)}{\partial t^2}$$

$$= EA_2 X_2'(0) T_{22}(t) - EA_1 X_1'(l_1) T_1(t)$$

④ Periodické řešení elektřiny až soubory, pokud může být fázová fáze stejná, proto můžeme zjednodušit  $T_1(t) = T_2(t) = T(t)$

Rézervní je tedy  $T = A \cos \Omega t + B \sin \Omega t$

$$\ddot{x} = X\ddot{T}; \ddot{y} = \ddot{X}\ddot{T}; \ddot{z} = \ddot{X}\ddot{T} = -\Omega^2 X T$$

$$y = \sin \Omega t$$

$$\dot{y} = \Omega \cos \Omega t$$

$$\ddot{y} = -\Omega^2 \sin \Omega t = -\Omega^2 y$$

$$\left( \begin{array}{l} x = C \cos \omega x + D \sin \omega x \\ x' = -C \omega \sin \omega x + D \omega \cos \omega x \end{array} \right) \xrightarrow[\text{dale}]{\text{bude} \atop \text{řešba}}$$

$$M \frac{\partial^2 \ddot{x}_2(\Omega t)}{\partial t^2} =$$

$$= -M \Omega^2 X_2 T_2 = \\ = -M \Omega^2 X_2 T$$

$$( \omega = \frac{E}{S} )$$

$$-M \Omega^2 [C_2 \cos \omega_2 t + D_2 \sin \omega_2 t] T(t) =$$

$$EA_2 [-C_2 \omega_2 \sin \omega_2 t + D_2 \omega_2 \cos \omega_2 t] T(t) -$$

$$-EA_1 [-C_1 \omega_1 \sin \omega_1 t + D_1 \omega_1 \cos \omega_1 t] T(t)$$

$$\left. \begin{aligned} -M \Omega^2 C_2 &= EA_2 D_2 \omega_2 + EA_1 C_1 \omega_1 \sin \omega_1 t - \\ &\quad - EA_1 D_1 \omega_1 \cos \omega_1 t \end{aligned} \right\} C_1 = 0$$

$$\Rightarrow \boxed{-M \Omega^2 C_2 = EA_2 D_2 \omega_2 - EA_1 D_1 \omega_1 \cos \omega_1 t}$$

③ Okrejone podmínky

②  $\xi_1(x_1=0, t) = \emptyset = X_1(x_1=0) T_1(t)$

$$\underbrace{[C_1 \cos \omega_1 t + D_1 \sin \omega_1 t]}_1 T_1(t) = \emptyset$$
$$\Rightarrow \boxed{C_1 = \emptyset}$$

③  $\xi_1(x_1=l_1, t) = \xi_2(x_2=0, t)$

$$[C_1 \cos \omega_1 l_1 + D_1 \sin \omega_1 l_1] T_1(t) = [C_2 \cos \omega_2 l_1 + D_2 \sin \omega_2 l_1] T_1(t)$$
$$\boxed{D_1 \sin \omega_1 l_1 = C_2}$$

④  $\xi_2(x_2=l_2, t) = \emptyset$

$$[C_2 \cos \omega_2 l_2 + D_2 \sin \omega_2 l_2] T_2(t) = \emptyset$$

① 
$$\begin{bmatrix} \sin \omega_1 l_1 & -1 & \emptyset & D_1 & \emptyset \\ EA_1 d_1 \cos \omega_1 l_1 & -m \omega^2 & EA_2 & C_2 & \emptyset \\ 0 & \cos \omega_2 l_2 & \sin \omega_2 l_2 & D_2 & \emptyset \end{bmatrix} = \begin{bmatrix} \emptyset \\ \emptyset \\ \emptyset \end{bmatrix}$$

④ 1) Védeke el. fr. elei sausoly

$$\det [ ] = \emptyset$$

2) Védeke napré.  $D_1 = 1$

$$\Rightarrow C_2, D_2 \quad \text{al. frony}$$