

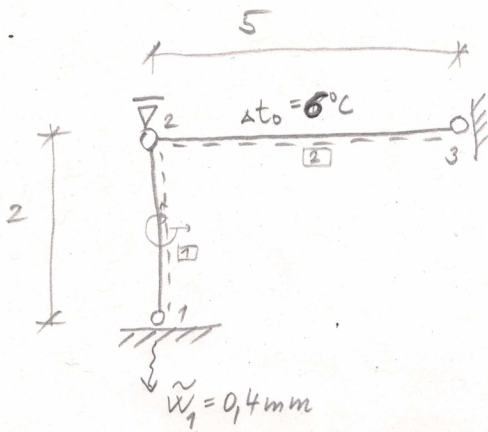
$$E = 40 \text{ GPa} = 40 \cdot 10^6 \text{ kPa}$$

$$A = 905 \text{ m}^2$$

$$\alpha_T = 1 \cdot 10^{-5} \text{ K}^{-1}$$

+ REAKCE (K VVNITĚNÍHO STYČNÍKU)
V POUDVNĚ PODPOŘE

$$EA = 2 \cdot 10^6 \text{ kPa} \cdot \text{m}^2$$



$$\{r\} = \{u_2\}$$

$$\{S\} = \{\emptyset\}$$

(15 min)

$$[K_{12}] = \begin{bmatrix} u_1 & w_1 & \varphi_1 & u_2 & w_2 & \varphi_2 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 1 \cdot 10^6 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -1 \cdot 10^6 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} \hat{X}_{21}$$

$$p_{12} = 2 \times 10^0$$

$$s_{12} = -1$$

$$c_{12} = 0$$



$$\{\tilde{R}_{12}\} = \begin{Bmatrix} 0 \\ 400 \\ 0 \\ 0 \\ -400 \\ 0 \end{Bmatrix} \tilde{X}_{21}$$

$$[K_{23}] = \begin{bmatrix} u_2 & w_2 & \varphi_2 & u_3 & w_3 & \varphi_3 \\ 94 \cdot 10^6 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -94 \cdot 10^6 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix} \hat{X}_{23}$$

$$p_{23} = 0$$

$$s_{23} = 0$$

$$c_{23} = 1$$



$$\{\bar{R}_{23}\} = \begin{Bmatrix} 120 \\ 0 \\ 0 \\ 0 \\ -120 \\ 0 \end{Bmatrix} \bar{X}_{23}$$

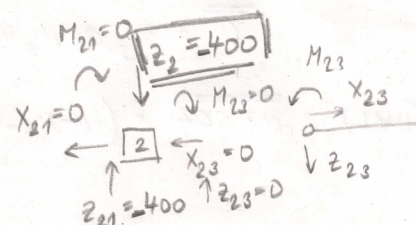
$$[K]\{r\} = \{S\} - \{R\}$$

$$[0.4 \cdot 10^6]\{u_2\} = \{0\} - \{120\}$$

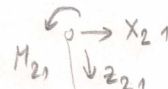
$$0.4 \cdot 10^6 u_2 = -120$$

$$u_2 = -3 \cdot 10^{-4} \text{ m}$$

$$\{\tilde{R}_{12}\} = \begin{Bmatrix} 0 \\ 400 \\ 0 \\ 0 \\ -400 \\ 0 \end{Bmatrix} \rightarrow \{\tilde{R}_{12}^*\} = \begin{Bmatrix} -400 \\ 0 \\ 0 \\ 400 \\ 0 \\ 0 \end{Bmatrix} \rightarrow N_1 = 400 \text{ kN (TAH)}$$



$$\{\bar{R}_{23}\} = \begin{Bmatrix} 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \end{Bmatrix} \rightarrow N_2 = \emptyset$$

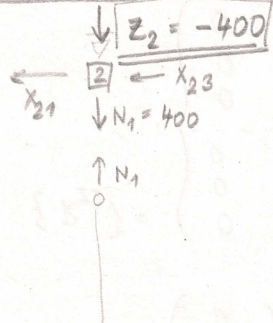


SKALARNE:

$\mu_2 = ?$

$\rightarrow X_{23} + X_{21} = 0$

(10 min)



$$X_{21} = N_1 \cdot c_{12} = \frac{2 \cdot 10^6}{2} (\mu_2 \cdot 0 + (-94 \cdot 10^{-3}) \cdot (-1)) \cdot 0 = 0$$

$$X_{23} = -N_2 \cdot c_{23} = -\frac{2 \cdot 10^6}{5} (-\mu_2 \cdot 1) \cdot 1 + 2 \cdot 10^6 \cdot 1 \cdot 10^{-5} \cdot 6 = 1 = 0,4 \cdot 10^6 \mu_2 + 120$$

$$94 \cdot 10^6 \mu_2 + 120 = 0$$

$$\mu_2 = -3 \cdot 10^{-4} \text{ m}$$

$$\underline{\underline{N_1 = \frac{2 \cdot 10^6}{2} (-3 \cdot 10^{-4} \cdot 0 - 0,4 \cdot 10^{-3} \cdot (-1)) = 400 \text{ kN (TAH)}}}$$

$$\underline{\underline{N_2 = \frac{2 \cdot 10^6}{5} (+3 \cdot 10^{-4} \cdot 1) - 2 \cdot 10^6 \cdot 1 \cdot 10^{-5} \cdot 6 = 0}}}$$

PC: R_a, V_x, M_y + maximální $\oplus$ hodnoty (umírti dlouhé spojte' zřetřeur)
(3 min)

