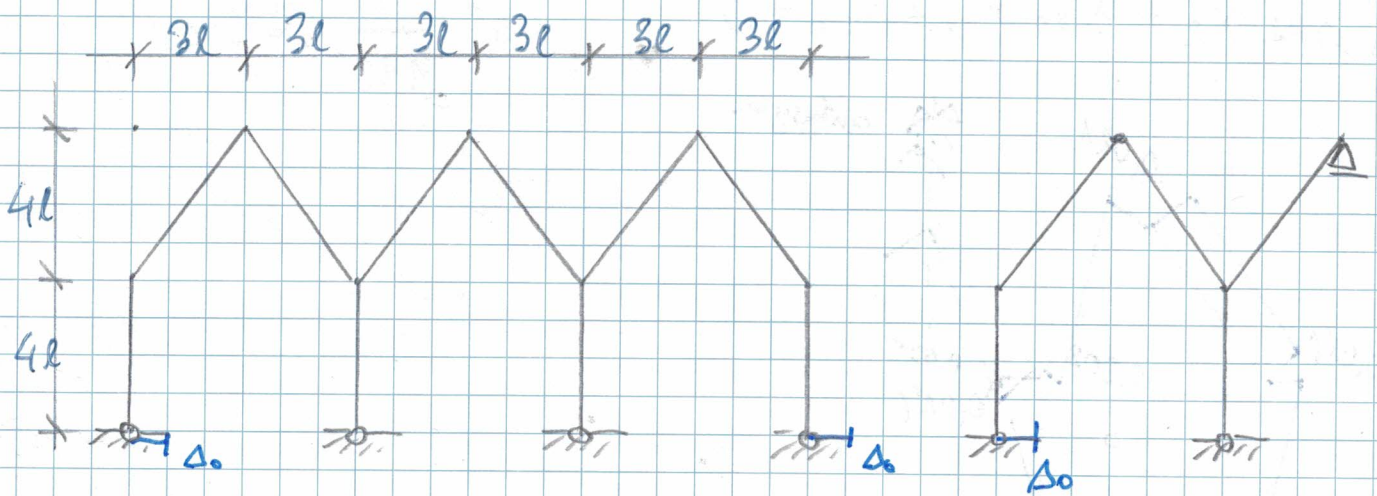


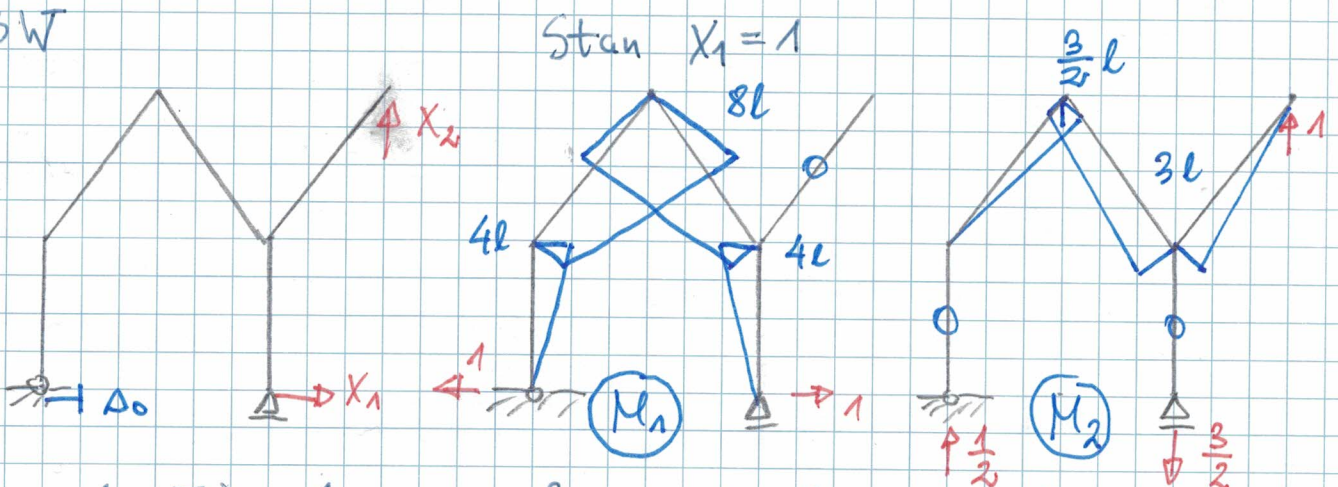
Kolloquium 1.2. v.a. 2024/25

$$Eg = \text{const.} \quad EA \rightarrow \infty$$

sch. pot.



USW



$$\delta_{11} = \frac{1}{Eg} \left[2 \cdot \frac{1}{2} 4l \cdot 4l \cdot \frac{2}{3} 4l + 2 \cdot \frac{1}{2} 4l \cdot 5l \left(\frac{2}{3} 4l + \frac{1}{3} 8l \right) + 2 \cdot \frac{1}{2} 8l \cdot 5l \cdot \left(\frac{2}{3} 8l + \frac{1}{3} 4l \right) \right] = 416 \frac{l^3}{Eg}$$

$$\delta_{12} = \frac{1}{Eg} \left[\frac{1}{2} \frac{3}{2} l \cdot 5l \cdot \left(\frac{1}{3} 4l + \frac{2}{3} 8l \right) + \frac{1}{2} \frac{3}{2} l \cdot 5l \left(\frac{2}{3} 8l + \frac{1}{3} 4l \right) + \frac{1}{2} \cdot 3l \cdot 5l \cdot \left(\frac{2}{3} 4l + \frac{1}{3} 8l \right) \right] = 90 \frac{l^3}{Eg}$$

$$\delta_{22} = \frac{1}{Eg} \left[\frac{1}{2} \frac{3}{2} l \cdot 5l \cdot \frac{2}{3} l + \frac{1}{2} \frac{3}{2} l \cdot 5l \cdot \left(\frac{2}{3} \frac{3}{2} l + \frac{1}{3} 3l \right) + \frac{1}{2} 3l \cdot 5l \cdot \left(\frac{2}{3} 3l + \frac{1}{3} \frac{3}{2} l \right) + \frac{1}{2} 3l \cdot 5l \cdot \frac{2}{3} 3l \right] = 45 \frac{l^3}{Eg}$$

$$\delta_{10} = -(-1) \Delta_0 = \Delta_0 \quad \delta_{20} = 0$$

n -nia zgodności

$$\begin{cases} \delta_{11} X_1 + \delta_{12} X_2 + \delta_{10} = 0 \\ \delta_{12} X_1 + \delta_{22} X_2 + \delta_{20} = 0 \end{cases}$$

$$\Rightarrow \begin{aligned} X_1 &= -\frac{1}{236} \frac{EY}{l^3} \Delta_0 \\ X_2 &= \frac{1}{118} \frac{EY}{l^3} \Delta_0 \end{aligned}$$

