$$\delta_{22} = \frac{1}{EI}\int_0^{l_1+l_2} \bar{M}_2 \bar{M}_2\, dz = \frac{1}{EI}\left[\int_0^{0,55} (-0,54z)^2 dz + \int_{0,55}^{1,3} (\cancel{-0,54z-1,54} -2,08z-0,847)^2 dz\right] = 0,0000465841$$

$$\delta_{21} = \frac{1}{E}\int_0^{l_1+l_2} \bar{M}_1 \bar{M}_2\, dz = \frac{1}{EI}\left[\int_0^{0,3} (-0,46z)(-0,54z)\, dz + \int_{0,3}^{0,55} (0,54z-0,3)\cdot(-0,54z)\, dz + \int_{0,55}^{1,3} (0,54z-0,3)(-2,08z-0,847)\, dz\right] = -3,52261\cdot 10^{-6}$$

Найдем Δp_1, Δp_2

$$\Delta p_1 = p_1\delta_{11} + p_2\delta_{12} = \theta^2(0,038\cdot 3,42898\cdot 10^{-7} + 0,0888\cdot(-3,52261\cdot 10^{-6})) = -2,99778\cdot 10^{-7}\theta^2$$

$$\Delta p_2 = p_1\delta_{21} + p_2\delta_{22} = \theta^2(0,038\cdot(-3,52261\cdot 10^{-6}) + 0,0888\cdot 0,0000465841) = 4,00281\cdot 10^{-6}\theta^2$$

Запишем ур-е движения:

$$\sum_{k=1}^{n} u_k'' m_k + \delta_{jk} + u_j = \Delta p_j \cos(\theta t) \quad \forall\, j = \overline{1,n}$$

Решение ищем в виде: $u_1(t) = D_1\cos(\theta t)$, $u_2(t) = D_2\cos(\theta t)$

$$u_j'' = -\theta^2 D_j \cos(\theta t)$$

$$\begin{cases} u_1'' m_1\delta_{11} + m_2 u_2''\delta_{12} + u_1 = \Delta p_1\cos(\theta t) \\ u_1'' m_1\delta_{21} + m_2 u_2''\delta_{22} + u_2 = \Delta p_2\cos(\theta t) \end{cases}$$

$$\begin{cases} -\theta^2\delta_{11}m_1D_1\cos(\theta t) - \theta^2\delta_{12}m_2D_2\cos(\theta t) + D_1\cos(\theta t) = \Delta p_1\cos(\theta t) \\ -\theta^2\delta_{21}m_1D_1\cos(\theta t) - \theta^2\delta_{22}m_2D_2\cos(\theta t) + D_2\cos(\theta t) = \Delta p_2\cos(\theta t) \end{cases}$$

$$\begin{cases} D_1(1-\theta^2\delta_{11}m_1) - D_2(\cancel{1-m}\, m_2\delta_{12}\theta^2) = \Delta p_1 \\ D_2(-\theta^2\delta_{21}m_1) + D_2(1-m_2\delta_{22}\theta^2) = \Delta p_2 \end{cases}$$

СЛАУ относительно $D = \begin{pmatrix} D_1 \\ D_2 \end{pmatrix}$

$AD = B$

Подставим δ_{ij}, m_j, Δp_j

~~$D_1(1-\theta^2 3,42898\cdot 10^{-7}) - D_2(1$~~

$$\begin{cases} D_1(1-\theta^2 3,2120496\cdot 10^{-6}) + D_2(\theta^2\cdot 1,04269256\cdot 10^{-7}) = -2,99778\cdot 10^{-7}\theta^2 \\ D_1(\theta^2\cdot 5,13543672\cdot 10^{-5}) + D_2(1-\theta^2 1,37888936\cdot 10^{-3}) = 4,00281\cdot 10^{-6}\theta^2 \end{cases}$$

~~Метод Крамера: $D_1 = \frac{\Delta_1}{\Delta}$, $D_2 = \frac{\Delta_2}{\Delta}$~~