$$\delta_{22} = \frac{1}{EI}\int_0^{l_1+l_2} M_2 M_2\, dz = \frac{1}{EI}\left[\int_0^{0,8}(0,448z)^2 dz + \int_{0,8}^{1,45}(-0,552z+0,8)^2 dz\right]$$

$$= 6,907\cdot 10^{-7}$$

$$\delta_{21} = \frac{1}{EI}\int_0^{l_1+l_2} M_1 M_2\, dz = \frac{1}{EI}\left[\int_0^{0,35}(-0,759z)(0,448z)dz + \int_{0,35}^{0,8}(0,241z-0,35)(0,448z)dz\right.$$

$$\left. + \int_{0,8}^{1,45}(0,241z-0,35)(-0,552z+0,8)dz\right] = -4,54\cdot 10^{-7}$$

Найдем $\Delta p_1, \Delta p_2$

$$\Delta p_1 = p_1\delta_{11} + p_2\delta_{12} = \Theta^2(0,0249\cdot 3,8\cdot 10^{-7} + 0,0378(-4,54\cdot 10^{-7})) =$$

$$-10^{-7}\Theta^2\cdot 0,07624$$

$$\Delta p_2 = p_1\delta_{21} + p_2\delta_{22} = \Theta^2(0,0249(-4,54)10^{-7} + 0,0378\cdot 6,907\cdot 10^{-7}) =$$

$$= 0,148\,\Theta^2\cdot 10^{-7}$$

Запишем ур-е движения:

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

Решение ищем в виде: $u_1(t) = D_1\cos(\Theta t)$

$u_j'' = -\Theta^2 D_j\cos(\Theta t)$ $\quad u_2(t) = D_2\cos(\Theta t)$

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

$$\begin{cases} -\Theta^2\delta_{11}m_1 D_1\cos(\Theta t) - \Theta^2\delta_{12}m_2 D_2\cos(\Theta t) + D_1\cos(\Theta t) = \Delta p_1\cos(\Theta t) \\ -\Theta^2\delta_{21}m_1 D_1\cos(\Theta t) - \Theta^2\delta_{22}m_2 D_2\cos(\Theta t) + D_2\cos(\Theta t) = \Delta p_2\cos(\Theta t) \end{cases}$$

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

СЛАУ отн. $\overline{D} = \begin{pmatrix} D_1 \\ D_2 \end{pmatrix}$

$A\overline{D} = B$

Подставим $\delta_{ij}, m_j, \Delta p_j$

$$\begin{cases} D_1(1-\Theta^2\cdot 31,57\cdot 10^{-7}) + D_2(\Theta^2\cdot 171,6\cdot 10^{-7}) = -0,076\,\Theta^2 10^{-7} \\ D_1(\Theta^2\cdot 37,68\cdot 10^{-7}) + D_2(1-\Theta^2\cdot 261\cdot 10^{-7}) = 0,148\,\Theta^2 10^{-7} \end{cases}$$

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

Δ_i - замена i-го столбца на B и его определитель