



$$\begin{bmatrix} K_{11} & K_{12} & K_{13} & K_{14} \\ K_{21} & K_{22} & K_{23} & K_{24} \\ K_{31} & K_{32} & K_{33} & K_{34} \\ K_{41} & K_{42} & K_{43} & K_{44} \end{bmatrix} \begin{bmatrix} q_1 \\ q_2 \\ q_3 \\ q_4 \end{bmatrix} = \begin{bmatrix} F_1 \\ F_2 \\ F_3 \\ F_4 \end{bmatrix}$$

$$\begin{bmatrix} K_{33} & K_{34} & K_{35} & K_{36} \\ K_{43} & K_{44} & K_{45} & K_{46} \\ K_{53} & K_{54} & K_{55} & K_{56} \\ K_{63} & K_{64} & K_{65} & K_{66} \end{bmatrix} \begin{bmatrix} q_3 \\ q_4 \\ q_5 \\ q_6 \end{bmatrix} = \begin{bmatrix} F_3 \\ F_4 \\ F_5 \\ F_6 \end{bmatrix}$$

The diagram illustrates the assembly of the global stiffness matrix and load vector. The global matrix is shown as a block matrix where the element matrices are highlighted with colored backgrounds: orange for the left bay and blue for the right bay. Arrows from the equations above point to the corresponding rows and columns in this assembly.

$$\begin{bmatrix} K_{11} & K_{12} & K_{13} & K_{14} & 0 & 0 \\ K_{21} & K_{22} & K_{23} & K_{24} & 0 & 0 \\ K_{31} & K_{32} & K_{33} & K_{34} & K_{35} & K_{36} \\ K_{41} & K_{42} & K_{43} & K_{44} & K_{45} & K_{46} \\ 0 & 0 & K_{53} & K_{54} & K_{55} & K_{56} \\ 0 & 0 & K_{63} & K_{64} & K_{65} & K_{66} \end{bmatrix} \begin{bmatrix} q_1 \\ q_2 \\ q_3 \\ q_4 \\ q_5 \\ q_6 \end{bmatrix} = \begin{bmatrix} F_1 \\ F_2 \\ F_3 \\ F_4 \\ F_5 \\ F_6 \end{bmatrix}$$