$$\begin{bmatrix} \rho\omega^2 + k_{11} & k_{12} & k_{13} \\ k_{21} & \rho\omega^2 + k_{22} & k_{23} \\ k_{31} & k_{32} & \rho\omega^2 + k_{33} \end{bmatrix} \begin{Bmatrix} \{A_{ij}\} \\ \{B_{ij}\} \\ \{C_{ij}\} \end{Bmatrix} = 0$$

or

$$\left( \begin{bmatrix} [a_{1ij}] & [b_{1ij}] & [c_{1ij}] \\ [a_{2ij}] & [b_{2ij}] & [c_{2ij}] \\ [a_{3ij}] & [b_{3ij}] & [c_{ij}] \end{bmatrix} + \omega^2 \begin{bmatrix} [f_{1ij}] & [0] & [0] \\ [0] & [f_{2ij}] & [0] \\ [0] & [0] & [f_{3ij}] \end{bmatrix} \right) \begin{Bmatrix} \{A_{ij}\} \\ \{B_{ij}\} \\ \{C_{ij}\} \end{Bmatrix} = \begin{Bmatrix} \{0\} \\ \{0\} \\ \{0\} \end{Bmatrix}$$

Where constants $A[i, j], B[i, j], C[i, j],$ are unknown.