

$$\begin{aligned}
\begin{bmatrix} C_2 \\ C_4 \end{bmatrix} &= \begin{bmatrix} \frac{\sqrt{5}}{6\omega_1} & \frac{2\sqrt{5}}{3\omega_1} \\ \frac{\sqrt{17}}{6\omega_2} & -\frac{\sqrt{17}}{3\omega_2} \end{bmatrix} \begin{bmatrix} \vec{v}_0 \end{bmatrix} \\
&= \begin{bmatrix} \frac{\sqrt{5}}{6\omega_1} (v_{01} + 4v_{02}) \\ \frac{\sqrt{17}}{6\omega_2} (v_{01} - 2v_{02}) \end{bmatrix}
\end{aligned} \tag{5.43}$$