

In the case that $e > n + r + 1$, we have confirmed that there exists an iso $\varphi_{2n+r}^r : W \rightarrow V'$ for appropriate subrepresentation V' and quotient W of M . Define the following coefficients:

$$\begin{aligned}\Phi_3(q^{1/2}) &:= q^{3/2} + 1 \\ [3]_{q^{1/2}} &:= q^{3/2} + q + q^{1/2} + 1 \\ q^{1/2} [2]_{q^{1/2}} &:= q + q^{1/2}\end{aligned}$$

Then, we may empirically compute the following:

$$\begin{aligned}\varphi_6^0 = \varphi_5^1 &= \begin{bmatrix} 0 & 0 & -\Phi_3(q^{1/2}) & 0 & 0 \\ 0 & -\Phi_3(q^{1/2}) & [3]_{q^{1/2}} & 0 & 0 \\ 0 & 0 & [3]_{q^{1/2}} & 0 & -\Phi_3(q^{1/2}) \\ -[3]_{q^{1/2}} & [3]_{q^{1/2}} & q^{1/2} [2]_{q^{1/2}} & 0 & [3]_{q^{1/2}} \\ [3]_{q^{1/2}} & 0 & [3]_{q^{1/2}} & -[3]_{q^{1/2}} & 0 \end{bmatrix} \\ \varphi_5^3 &= \begin{bmatrix} -q^{1/2} [2]_{q^{1/2}} & [3]_{q^{1/2}} & q^{1/2} \\ q^{1/2} & q^{3/2} & 0 \\ 0 & -q - 1 & \end{bmatrix} \\ \varphi_4^0 &= \begin{bmatrix} 0 & -[3]_{q^{1/2}} \\ -1 & 1 \end{bmatrix} \\ \varphi_4^2 &= \begin{bmatrix} 0 & [3]_{q^{1/2}} & 0 \\ 1 & -1 & 0 \\ -1 & 0 & 1 \end{bmatrix} \\ \varphi_3^1 &= \begin{bmatrix} 0 & -[3]_{q^{1/2}} \\ q^{1/2} [2]_{q^{1/2}} & -q^{1/2} [2]_{q^{1/2}} \end{bmatrix}\end{aligned}$$

$$\begin{aligned}
\iota_{4,2,2} &= [1 \quad \alpha \quad 1] \\
\iota_{4,2,1} &= [1 \quad \frac{1}{2}\alpha \quad \frac{1}{2}\alpha \quad 1 \quad \frac{1}{2}\alpha] \\
\iota_{4,4,2} &= \begin{bmatrix} 1 & 0 & 0 & 0 & 0 & 0 & \alpha & 1 & 0 \\ 0 & 1 & 0 & 0 & 0 & -1 & -1 & -\alpha & 0 \\ 0 & 0 & 1 & 0 & 0 & \alpha & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 & 0 & 0 & -1 & -\alpha & -1 \\ 0 & 0 & 0 & 0 & 1 & \frac{1}{2}\alpha & \frac{1}{2}\alpha & 1 & \frac{1}{2}\alpha \end{bmatrix} \\
\iota_{4,6,0} &= [\alpha \quad 1 \quad 1 \quad \alpha \quad 1] \\
\iota_{4,6,1} &= \begin{bmatrix} 1 & 0 & 0 & 0 & \frac{1}{2}\alpha & 0 & -\frac{1}{2} & -\frac{1}{2} & 0 & 0 & 1 & 1/2 & \alpha & \frac{1}{2} \\ 0 & 1 & 0 & 0 & -1 & 0 & \frac{1}{2}\alpha & \frac{1}{2}\alpha & 1 & 0 & \alpha & \frac{1}{2}\alpha & -1 & \frac{1}{2}\alpha \\ 0 & 0 & 1 & 0 & -1 & 0 & 0 & \alpha & 1 & 0 & -\alpha & 0 & -1 & 0 \\ 0 & 0 & 0 & 1 & \alpha & 0 & 0 & -1 & -\alpha & 0 & 1 & -1 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 1 & \frac{1}{2}\alpha & \frac{1}{2}\alpha & 0 & 0 & 0 & \frac{1}{2}\alpha & -1 & \frac{1}{2}\alpha \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 1 & -\frac{1}{2}\alpha & \frac{1}{2}\alpha & 1 & \frac{1}{2}\alpha \end{bmatrix} \\
\iota_{5,2,3} &= [1 \quad \beta \quad \beta \quad 1] \\
\iota_{5,4,2} &= [\beta \quad \beta \quad 1 \quad 1 \quad \beta+1 \quad \beta \quad \beta \quad \beta \quad 1] \\
\iota_{5,4,3} &= \begin{bmatrix} 1 & \beta & \beta & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 1 & \beta & \beta & 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \beta & \beta & 1 & 0 & 0 & 0 & 0 \\ \beta & \beta & 1 & 0 & 1 & \beta+1 & \beta & 0 & \beta & \beta & 0 & 1 & 0 & 0 & 0 \\ -\beta-1 & -\beta & -\beta & 0 & -\beta & -\beta-1 & -\beta-1 & 0 & -\beta-1 & -\beta-1 & 0 & 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 & 0 & 0 & \beta & 0 & 0 & \beta & 0 & 0 & 0 & 1 & 0 \end{bmatrix} \\
\iota_{5,6,1} &= [1 \quad \alpha \quad \alpha \quad \alpha \quad -\beta \quad \alpha \quad -\beta \quad \alpha \quad -\beta \quad 1 \quad \alpha \quad \alpha \quad \alpha \quad -\beta] \\
\iota_{6,2,4} &= [1 \quad \gamma \quad 2 \quad \gamma \quad 1] \\
\iota_{6,4,3} &= [\gamma \quad 2 \quad \gamma \quad 1 \quad 1 \quad 2\gamma \quad 3 \quad \gamma \quad 2 \quad 2\gamma \quad 2 \quad 2 \quad \gamma \quad 1] \\
\iota_{6,4,3} &= [1 \quad \delta \quad \varepsilon \quad \varepsilon \quad \delta \quad 1]
\end{aligned}$$

$$\begin{aligned}
[1 - v^3 + 2*v2 - v^3 + 2*v1]e = 6n = 4r = 3[-v^3 + 2*v2 - v^3 + 2*v11 - 2*v^3 + 4*v3 - v^3 + 2*v2 - 2*v^3 + \\
4*v22 - v^3 + 2*v1]e = 7n = 2r = 5[1 - v^5 + v^4 - v^3 + v^2 + 1 - v^5 + v^2 + 1 - v^5 + v^2 + 1 - v^5 + v^4 - v^3 + v^2 + 11]
\end{aligned}$$

The following illustrates triviality of the kernel at various e :







