

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:

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

The following illustrates triviality of the kernel at various  $e$ :







