## $227^{\mathrm{th}}$ Eigenvector

$\boldsymbol{N_e = 6 \qquad s = 0 \qquad m_s = 0}$

**Irred. Representation : $\boldsymbol{\Gamma_1}$**

$$E_{227} = \frac{1}{2}\left(-J - 4t + 5U + 50W + \sqrt{A_8}\right)$$

$$\begin{aligned}
|\Psi_{227}\rangle &= |6,0,0,\Gamma_1\rangle \\
&= C_{227,1}\left(|0222\rangle + |2022\rangle + |2202\rangle + |2220\rangle\right) \\
&+ C_{227,2}\left(|22du\rangle - |22ud\rangle + |2d2u\rangle + |2du2\rangle - |2u2d\rangle - |2ud2\rangle\right. \\
&\qquad \left. + |d22u\rangle + |d2u2\rangle + |du22\rangle - |u22d\rangle - |u2d2\rangle - |ud22\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{227-1} &= \sqrt{3}t \\
C_{227-2} &= \frac{J + 4t + U - 2W - \sqrt{A_8}}{4\sqrt{3}} \\
N_{227} &= 2\sqrt{C_{227,1}^2 + 3C_{227,2}^2}
\end{aligned}$$