222^{nd} Eigenvector

$\boldsymbol{N_e = 6 \qquad s = 1 \qquad m_s = -1}$

Irred. Representation : $\boldsymbol{\Gamma_{4,3}}$

$$E_{222} = \frac{1}{2}(J - 4t + 4U + 52W)$$

$$\begin{aligned} |\Psi_{222}\rangle &= |6, 1, -1, \Gamma_{4,3}\rangle \\ &= \frac{1}{2}\left(|22dd\rangle - |2dd2\rangle + |d22d\rangle + |dd22\rangle\right) \end{aligned}$$