42^{nd} Eigenvector

$\boldsymbol{N_e} \;=\; \mathbf{3} \qquad \boldsymbol{s = \frac{1}{2}} \qquad \boldsymbol{m_s = -\frac{1}{2}}$

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

$$E_{42} \;=\; t + U + 4W$$

$$\begin{aligned} |\Psi_{42}\rangle \;&=\; |3, \frac{1}{2}, -\frac{1}{2}, \Gamma_1\rangle \\ &=\; \frac{1}{2\sqrt{3}} \left(|002d\rangle + |00d2\rangle + |020d\rangle + |02d0\rangle + |0d02\rangle + |0d20\rangle \right. \\ &\qquad \left. + |200d\rangle + |20d0\rangle + |2d00\rangle + |d002\rangle + |d020\rangle + |d200\rangle \right) \end{aligned}$$