

112nd Eigenvector

$$N_e = 4 \quad s = 0 \quad m_s = 0$$

Irred. Representation : Γ_1

$$E_{112} = \frac{1}{2} \left(-J + 3(U + 6W) + \sqrt{A_3} \right)$$

$$\begin{aligned} |\Psi_{112}\rangle &= |4, 0, 0, \Gamma_1\rangle \\ &= C_{112,1} (|0022\rangle + |0202\rangle + |0220\rangle + |2002\rangle + |2020\rangle + |2200\rangle) \\ &+ C_{112,2} (|02du\rangle - |02ud\rangle + |0d2u\rangle + |0du2\rangle - |0u2d\rangle - |0ud2\rangle + |20du\rangle - |20ud\rangle \\ &\quad + |2d0u\rangle + |2du0\rangle - |2u0d\rangle - |2ud0\rangle + |d02u\rangle + |d0u2\rangle + |d20u\rangle + |d2u0\rangle \\ &\quad + |du02\rangle + |du20\rangle - |u02d\rangle - |u0d2\rangle - |u20d\rangle - |u2d0\rangle - |ud02\rangle - |ud20\rangle) \end{aligned}$$

$$C_{112-1} = 2\sqrt{\frac{2}{3}}t$$

$$C_{112-2} = \frac{J + U - 2W - \sqrt{A_3}}{4\sqrt{6}}$$

$$N_{112} = \sqrt{6C_{112,1}^2 + 24C_{112,2}^2}$$