

154th Eigenvector

$$N_e = 4 \quad s = 1 \quad m_s = 1$$

Irred. Representation : $\Gamma_{5,1}$

$$E_{154} = \frac{A_{11}}{6}$$

$$\begin{aligned} |\Psi_{154}\rangle &= |4, 1, 1, \Gamma_{5,1}\rangle \\ &= C_{154,1} (|02uu\rangle + |0uu2\rangle + |20uu\rangle + |2uu0\rangle - |u02u\rangle - |u20u\rangle + |uu02\rangle + |uu20\rangle) \\ &+ C_{154,2} (|0u2u\rangle - |2u0u\rangle - |u0u2\rangle + |u2u0\rangle) \\ &+ C_{154,3} (|duuu\rangle - |uduu\rangle + |uudu\rangle - |uud\rangle) \end{aligned}$$

$$C_{154-1} = -\frac{1}{3}t (J + U - 2W + 2 \cos(\theta_3) \sqrt{A_2})$$

$$C_{154-2} = -4t^2$$

$$\begin{aligned} C_{154-3} &= \frac{1}{8} (-J^2 - 4UJ - 40WJ + 32t^2 - 4U^2) \\ &+ \left(-\frac{1}{72} (60W - A_{11}) (6(J + 2(U + 5W)) - A_{11}) \right) \end{aligned}$$

$$N_{154} = 2\sqrt{2C_{154,1}^2 + C_{154,2}^2 + C_{154,3}^2}$$