

81st Eigenvector

$$N_e = 3 \quad s = \frac{1}{2} \quad m_s = \frac{1}{2}$$

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

$$E_{81} = \frac{1}{2} \left(-J - 2t + U + 10W - \sqrt{A_7} \right)$$

$$\begin{aligned} |\Psi_{81}\rangle &= |3, \frac{1}{2}, \frac{1}{2}, \Gamma_{5,1}\rangle \\ &= C_{81,1} (|002u\rangle - |00u2\rangle + |02u0\rangle - |0u20\rangle - |200u\rangle + |2u00\rangle + |u002\rangle - |u200\rangle) \\ &+ C_{81,2} (|0duu\rangle + |0uud\rangle + |d0uu\rangle + |duu0\rangle + |u0du\rangle + |ud0u\rangle + |uu0d\rangle + |uud0\rangle) \\ &+ C_{81,3} (|0udu\rangle + |du0u\rangle + |u0ud\rangle + |udu0\rangle) \end{aligned}$$

$$C_{81-1} = \frac{1}{2} \sqrt{\frac{3}{2}} t$$

$$C_{81-2} = \frac{J + 2t + U - 2W + \sqrt{A_7}}{4\sqrt{6}}$$

$$C_{81-3} = -\frac{J + 2t + U - 2W + \sqrt{A_7}}{2\sqrt{6}}$$

$$N_{81} = 2\sqrt{2C_{81,1}^2 + 2C_{81,2}^2 + C_{81,3}^2}$$