

63rd Eigenvector

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

Irred. Representation : $\Gamma_{5,3}$

$$E_{63} = \frac{1}{2} \left(-J - 2t + U + 10W - \sqrt{A_7} \right)$$

$$\begin{aligned} |\Psi_{63}\rangle &= |3, \frac{1}{2}, -\frac{1}{2}, \Gamma_{5,3}\rangle \\ &= C_{63,1} (|002d\rangle - |00d2\rangle - |020d\rangle + |0d02\rangle + |20d0\rangle - |2d00\rangle - |d020\rangle + |d200\rangle) \\ &+ C_{63,2} (|0ddu\rangle + |d0ud\rangle - |du0d\rangle - |udd0\rangle) \\ &+ C_{63,3} (|0dud\rangle + |0udd\rangle + |d0du\rangle - |dd0u\rangle - |ddu0\rangle - |dud0\rangle + |u0dd\rangle - |ud0d\rangle) \end{aligned}$$

$$C_{63-1} = -\frac{1}{2} \sqrt{\frac{3}{2}} t$$

$$C_{63-2} = -\frac{J + 2t + U - 2W + \sqrt{A_7}}{2\sqrt{6}}$$

$$C_{63-3} = \frac{J + 2t + U - 2W + \sqrt{A_7}}{4\sqrt{6}}$$

$$N_{63} = 2\sqrt{2C_{63,1}^2 + C_{63,2}^2 + 2C_{63,3}^2}$$