

53rd Eigenvector

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

Irred. Representation : $\Gamma_{3,2}$

$$E_{53} = \frac{1}{2} \left(-J + t + 3U + 9W + \sqrt{A_4} \right)$$

$$\begin{aligned} |\Psi_{53}\rangle &= |4, 0, 0, \Gamma_{3,2}\rangle \\ &= C_{53,1} (|022\rangle) \\ &+ C_{53,2} (|202\rangle + |220\rangle) \\ &+ C_{53,3} (|2du\rangle - |2ud\rangle) \\ &+ C_{53,4} (|d2u\rangle + |du2\rangle - |u2d\rangle - |ud2\rangle) \end{aligned}$$

$$C_{53-1} = \frac{2t}{\sqrt{3}}$$

$$C_{53-2} = -\frac{t}{\sqrt{3}}$$

$$C_{53-3} = \frac{-J + t - U + W + \sqrt{A_4}}{2\sqrt{3}}$$

$$C_{53-4} = -\frac{-J + t - U + W + \sqrt{A_4}}{4\sqrt{3}}$$

$$N_{53} = \sqrt{C_{53,1}^2 + 2 \left(C_{53,2}^2 + C_{53,3}^2 + 2C_{53,4}^2 \right)}$$