

74th Eigenvector

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

Irred. Representation : $\Gamma_{4,1}$

$$E_{74} = \frac{A_{20}}{3}$$

$$\begin{aligned} |\Psi_{74}\rangle &= |3, \frac{1}{2}, \frac{1}{2}, \Gamma_{4,1}\rangle \\ &= C_{74,1} (|002u\rangle + |00u2\rangle - |2u00\rangle - |u200\rangle) \\ &+ C_{74,2} (|020u\rangle + |02u0\rangle - |0u02\rangle - |0u20\rangle + |200u\rangle + |20u0\rangle - |u002\rangle - |u020\rangle) \\ &+ C_{74,3} (|0udu\rangle - |0uud\rangle - |du0u\rangle - |duu0\rangle + |u0du\rangle - |u0ud\rangle + |ud0u\rangle + |udu0\rangle) \end{aligned}$$

$$\begin{aligned} C_{74-1} &= -\frac{t(J + 12t + U)}{3\sqrt{2}} \\ &+ \left(-\frac{t(U - 2W + (\sqrt{3}\sin(\theta_4) - \cos(\theta_4))\sqrt{A_5})}{3\sqrt{2}} \right) \end{aligned}$$

$$\begin{aligned} C_{74-2} &= \frac{t(-J + 4t - U)}{2\sqrt{2}} \\ &+ \left(-\frac{t(U - 2W + (\sqrt{3}\sin(\theta_4) - \cos(\theta_4))\sqrt{A_5})}{2\sqrt{2}} \right) \end{aligned}$$

$$C_{74-3} = \frac{A_{20}^2 - 3(t + 2U + 8W)A_{20} + 9(-4t^2 + (U + 4W)t + (U + 4W)^2)}{18\sqrt{2}}$$

$$N_{74} = 2\sqrt{C_{74,1}^2 + 2(C_{74,2}^2 + C_{74,3}^2)}$$