

106th Eigenvector

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

Irred. Representation : $\Gamma_{5,2}$

$$E_{106} = \frac{A_{18}}{3}$$

$$\begin{aligned} |\Psi_{106}\rangle &= |4, 1, -1, \Gamma_{5,2}\rangle \\ &= C_{106,1} (|02dd\rangle - |20dd\rangle - |dd02\rangle + |dd20\rangle) \\ &+ C_{106,2} (|0d2d\rangle - |0dd2\rangle + |2d0d\rangle - |2dd0\rangle - |d02d\rangle + |d0d2\rangle - |d20d\rangle + |d2d0\rangle) \\ &+ C_{106,3} (|dddu\rangle + |ddud\rangle - |dudd\rangle - |uddd\rangle) \end{aligned}$$

$$C_{106-1} = 4t^2$$

$$C_{106-2} = \frac{1}{6}t (3J + 6U + 60W - 2A_{18})$$

$$\begin{aligned} C_{106-3} &= \frac{1}{8} (-J^2 - 4UJ - 40WJ + 32t^2 - 4U^2) \\ &+ \left(-\frac{1}{18} (30W - A_{18}) (3J + 6U + 30W - A_{18}) \right) \end{aligned}$$

$$N_{106} = 2\sqrt{C_{106,1}^2 + 2C_{106,2}^2 + C_{106,3}^2}$$