174$^{\text{th}}$ **Eigenvector**

$$N_e \;=\; 5 \qquad s = \frac{1}{2} \qquad m_s = -\frac{1}{2}$$

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

$$E_{174} \;=\; \frac{1}{3}\left(-J - 3t + 5U + 50W - 2\cos\left(\theta_5\right)\sqrt{A_6}\right)$$

$$
\begin{aligned}
|\Psi_{174}\rangle \;&=\; |5, \tfrac{1}{2}, -\tfrac{1}{2}, \Gamma_{4,1}\rangle \\
&=\; C_{174,1}\left(|022d\rangle + |02d2\rangle + |202d\rangle + |20d2\rangle - |2d02\rangle - |2d20\rangle - |d202\rangle - |d220\rangle\right) \\
&+\; C_{174,2}\left(|0d22\rangle - |220d\rangle - |22d0\rangle + |d022\rangle\right) \\
&+\; C_{174,3}\left(|2ddu\rangle - |2dud\rangle + |d2du\rangle - |d2ud\rangle - |du2d\rangle - |dud2\rangle + |ud2d\rangle + |udd2\rangle\right)
\end{aligned}
$$

$$C_{174-1} \;=\; \frac{t\left(J + 4t + U - 2W + 2\cos\left(\theta_5\right)\sqrt{A_6}\right)}{2\sqrt{2}}$$

$$C_{174-2} \;=\; \frac{t\left(-J + 12t - U + 2W - 2\cos\left(\theta_5\right)\sqrt{A_6}\right)}{3\sqrt{2}}$$

$$C_{174-3} \;=\; \frac{-A_{22}^2 + 3(t - 4(U + 8W))A_{22} + 18\left(2t^2 + (U + 8W)t - 2(U + 8W)^2\right)}{18\sqrt{2}}$$

$$N_{174} \;=\; 2\sqrt{2C_{174,1}^2 + C_{174,2}^2 + 2C_{174,3}^2}$$