

## 171<sup>st</sup> Eigenvector

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

Irred. Representation :  $\Gamma_{3,1}$

$$E_{171} = \frac{1}{2} (-J + 2t + 3U + 34W + \sqrt{A_7})$$

$$\begin{aligned} |\Psi_{171}\rangle &= |5, \frac{1}{2}, -\frac{1}{2}, \Gamma_{3,1}\rangle \\ &= C_{171,1} (|022d\rangle + |0d22\rangle + |20d2\rangle + |220d\rangle + |22d0\rangle + |2d02\rangle + |d022\rangle + |d220\rangle) \\ &+ C_{171,2} (|02d2\rangle + |202d\rangle + |2d20\rangle + |d202\rangle) \\ &+ C_{171,3} (|2ddu\rangle - |2udd\rangle - |d2ud\rangle - |dd2u\rangle + |ddu2\rangle + |du2d\rangle + |u2dd\rangle - |udd2\rangle) \end{aligned}$$

$$C_{171-1} = -\frac{t}{2\sqrt{2}}$$

$$C_{171-2} = \frac{t}{\sqrt{2}}$$

$$C_{171-3} = \frac{J + 2t + U - 2W - \sqrt{A_7}}{4\sqrt{2}}$$

$$N_{171} = 2\sqrt{2C_{171,1}^2 + C_{171,2}^2 + 2C_{171,3}^2}$$