

## 79<sup>th</sup> Eigenvector

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

Irred. Representation :  $\Gamma_{4,3}$

$$E_{79} = \frac{A_{21}}{3}$$

$$\begin{aligned} |\Psi_{79}\rangle &= |3, \frac{1}{2}, \frac{1}{2}, \Gamma_{4,3}\rangle \\ &= C_{79,1} (|002u\rangle - |00u2\rangle - |02u0\rangle + |0u20\rangle + |200u\rangle + |2u00\rangle - |u002\rangle - |u200\rangle) \\ &+ C_{79,2} (|020u\rangle + |0u02\rangle - |20u0\rangle - |u020\rangle) \\ &+ C_{79,3} (|0duu\rangle - |0uud\rangle + |d0uu\rangle - |duu0\rangle - |u0du\rangle - |ud0u\rangle + |uu0d\rangle + |uud0\rangle) \end{aligned}$$

$$\begin{aligned} C_{79-1} &= \frac{t(J - 4t + U)}{2\sqrt{2}} \\ &+ \left( \frac{t \left( U - 2W - (\cos(\theta_4) + \sqrt{3} \sin(\theta_4)) \sqrt{A_5} \right)}{2\sqrt{2}} \right) \end{aligned}$$

$$\begin{aligned} C_{79-2} &= \frac{t(J + 12t + U)}{3\sqrt{2}} \\ &+ \left( \frac{t \left( U - 2W - (\cos(\theta_4) + \sqrt{3} \sin(\theta_4)) \sqrt{A_5} \right)}{3\sqrt{2}} \right) \end{aligned}$$

$$C_{79-3} = \frac{A_{21}^2 - 3(t + 2U + 8W)A_{21} + 9(-4t^2 + (U + 4W)t + (U + 4W)^2)}{18\sqrt{2}}$$

$$N_{79} = 2\sqrt{2C_{79,1}^2 + C_{79,2}^2 + 2C_{79,3}^2}$$