

## 61<sup>st</sup> Eigenvector

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

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

$$E_{61} = \frac{1}{2} \left( -J - 2t + U + 10W + \sqrt{A_7} \right)$$

$$\begin{aligned} |\Psi_{61}\rangle &= |3, \frac{1}{2}, -\frac{1}{2}, \Gamma_{5,2}\rangle \\ &= C_{61,1} (|020d\rangle - |02d0\rangle - |0d02\rangle + |0d20\rangle - |200d\rangle + |20d0\rangle + |d002\rangle - |d020\rangle) \\ &+ C_{61,2} (|0ddu\rangle + |0dud\rangle - |d0du\rangle - |d0ud\rangle - |du0d\rangle + |dud0\rangle - |ud0d\rangle + |udd0\rangle) \\ &+ C_{61,3} (|0udd\rangle - |dd0u\rangle + |ddu0\rangle - |u0dd\rangle) \end{aligned}$$

$$C_{61-1} = -\frac{1}{2} \sqrt{\frac{3}{2}} t$$

$$C_{61-2} = -\frac{J + 2t + U - 2W - \sqrt{A_7}}{4\sqrt{6}}$$

$$C_{61-3} = \frac{J + 2t + U - 2W - \sqrt{A_7}}{2\sqrt{6}}$$

$$N_{61} = 2\sqrt{2C_{61,1}^2 + 2C_{61,2}^2 + C_{61,3}^2}$$