

## 189<sup>th</sup> Eigenvector

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

Irred. Representation :  $\Gamma_{5,3}$

$$E_{189} = \frac{1}{2} (-J + 2t + 3U + 34W - \sqrt{A_4})$$

$$\begin{aligned} |\Psi_{189}\rangle &= |5, \frac{1}{2}, -\frac{1}{2}, \Gamma_{5,3}\rangle \\ &= C_{189,1} (|02d2\rangle - |0d22\rangle - |202d\rangle + |220d\rangle - |22d0\rangle + |2d20\rangle + |d022\rangle - |d202\rangle) \\ &+ C_{189,2} (|2ddu\rangle + |d2ud\rangle - |du2d\rangle - |udd2\rangle) \\ &+ C_{189,3} (|2dud\rangle + |2udd\rangle + |d2du\rangle - |dd2u\rangle - |ddu2\rangle - |dud2\rangle + |u2dd\rangle - |ud2d\rangle) \end{aligned}$$

$$\begin{aligned} C_{189-1} &= -\frac{1}{2} \sqrt{\frac{3}{2}} t \\ C_{189-2} &= -\frac{J - 2t + U - 2W + \sqrt{A_4}}{2\sqrt{6}} \\ C_{189-3} &= \frac{J - 2t + U - 2W + \sqrt{A_4}}{4\sqrt{6}} \\ N_{189} &= 2\sqrt{2C_{189,1}^2 + C_{189,2}^2 + 2C_{189,3}^2} \end{aligned}$$