

## 18<sup>th</sup> Eigenvector

$$N_e = 2 \quad s = 0 \quad m_s = 0$$

Irred. Representation :  $\Gamma_{3,2}$

$$E_{18} = \frac{1}{2} \left( -J - t + U + W + \sqrt{A_1} \right)$$

$$\begin{aligned} |\Psi_{18}\rangle &= |2, 0, 0, \Gamma_{3,2}\rangle \\ &= C_{18,1} (|002\rangle + |020\rangle) \\ &+ C_{18,2} (|0du\rangle - |0ud\rangle) \\ &+ C_{18,3} (|200\rangle) \\ &+ C_{18,4} (|d0u\rangle + |du0\rangle - |u0d\rangle - |ud0\rangle) \end{aligned}$$

$$C_{18-1} = -\frac{J + t + U - W + \sqrt{A_1}}{2\sqrt{6}}$$

$$C_{18-2} = \sqrt{\frac{2}{3}}t$$

$$C_{18-3} = \frac{J + t + U - W + \sqrt{A_1}}{\sqrt{6}}$$

$$C_{18-4} = -\frac{t}{\sqrt{6}}$$

$$N_{18} = \sqrt{2C_{18,1}^2 + 2C_{18,2}^2 + C_{18,3}^2 + 4C_{18,4}^2}$$