

16th Eigenvector

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

Irred. Representation : Γ_1

$$E_{16} = \frac{1}{2} \left(-J + 4t + U + 2W - \sqrt{A_9} \right)$$

$$\begin{aligned} |\Psi_{16}\rangle &= |2, 0, 0, \Gamma_1\rangle \\ &= C_{16,1} (|0002\rangle + |0020\rangle + |0200\rangle + |2000\rangle) \\ &+ C_{16,2} (|00du\rangle - |00ud\rangle + |0d0u\rangle + |0du0\rangle - |0u0d\rangle - |0ud0\rangle \\ &\quad + |d00u\rangle + |d0u0\rangle + |du00\rangle - |u00d\rangle - |u0d0\rangle - |ud00\rangle) \end{aligned}$$

$$C_{16-1} = \sqrt{3}t$$

$$C_{16-2} = \frac{J - 4t + U - 2W + \sqrt{A_9}}{4\sqrt{3}}$$

$$N_{16} = 2\sqrt{C_{16,1}^2 + 3C_{16,2}^2}$$