18^{th} Eigenvector

$\boldsymbol{N_e = 2 \qquad s = 0 \qquad m_s = 0}$

Irred. Representation : $\boldsymbol{\Gamma_{3,1}}$

$$E_{18} = -J - 2t + 2W$$

$$\begin{aligned} |\Psi_{18}\rangle &= |2,0,0,\Gamma_{3,1}\rangle \\ &= C_{18,1}\left(|00du\rangle - |00ud\rangle + |0du0\rangle - |0ud0\rangle + |d00u\rangle + |du00\rangle - |u00d\rangle - |ud00\rangle\right) \\ &+ C_{18,2}\left(|0d0u\rangle - |0u0d\rangle + |d0u0\rangle - |u0d0\rangle\right) \end{aligned}$$

$$\begin{aligned} C_{18-1} &= -\frac{1}{2\sqrt{6}} \\ C_{18-2} &= \frac{1}{\sqrt{6}} \\ N_{18} &= 2\sqrt{2C_{18,1}^2 + C_{18,2}^2} \end{aligned}$$