87^{th} Eigenvector

$\boldsymbol{N_e \;=\; 3 \qquad s = \frac{1}{2} \qquad m_s = \frac{1}{2}}$

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

$$E_{87} \;=\; \frac{1}{2}\left(-J - 2t + U + 10W - \sqrt{A_7}\right)$$

$$\begin{aligned}
|\Psi_{87}\rangle \;&=\; |3, \frac{1}{2}, \frac{1}{2}, \Gamma_{5,3}\rangle \\
&=\; C_{87,1}\left(|002u\rangle - |00u2\rangle - |020u\rangle + |0u02\rangle + |20u0\rangle - |2u00\rangle - |u020\rangle + |u200\rangle\right) \\
&+\; C_{87,2}\left(|0duu\rangle + |0udu\rangle + |d0uu\rangle - |du0u\rangle + |u0ud\rangle - |udu0\rangle - |uu0d\rangle - |uud0\rangle\right) \\
&+\; C_{87,3}\left(|0uud\rangle - |duu0\rangle + |u0du\rangle - |ud0u\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{87-1} \;&=\; -\frac{1}{2}\sqrt{\frac{3}{2}}t \\
C_{87-2} \;&=\; -\frac{J + 2t + U - 2W + \sqrt{A_7}}{4\sqrt{6}} \\
C_{87-3} \;&=\; \frac{J + 2t + U - 2W + \sqrt{A_7}}{2\sqrt{6}} \\
N_{87} \;&=\; 2\sqrt{2C_{87,1}^2 + 2C_{87,2}^2 + C_{87,3}^2}
\end{aligned}$$