77^{th} Eigenvector

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

Irred. Representation : $\boldsymbol{\Gamma_{4,2}}$

$$E_{77} = \frac{A_{20}}{3}$$

$$\begin{aligned}
|\Psi_{77}\rangle &= |3,\frac{1}{2},\frac{1}{2},\Gamma_{4,2}\rangle \\
&= C_{77,1}\left(|002u\rangle - |00u2\rangle + |020u\rangle - |0u02\rangle - |20u0\rangle - |2u00\rangle + |u020\rangle + |u200\rangle\right) \\
&+ C_{77,2}\left(|02u0\rangle + |0u20\rangle - |200u\rangle - |u002\rangle\right) \\
&+ C_{77,3}\left(|0duu\rangle - |0udu\rangle + |d0uu\rangle + |du0u\rangle - |u0ud\rangle + |udu0\rangle - |uu0d\rangle - |uud0\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{77-1} &= \frac{t(-J+4t-U)}{2\sqrt{2}} \\
&+ \left(-\frac{t\left(U-2W+\left(\sqrt{3}\sin(\theta_4)-\cos(\theta_4)\right)\sqrt{A_5}\right)}{2\sqrt{2}}\right) \\
C_{77-2} &= \frac{t(J+12t+U)}{3\sqrt{2}} \\
&+ \left(\frac{t\left(U-2W+\left(\sqrt{3}\sin(\theta_4)-\cos(\theta_4)\right)\sqrt{A_5}\right)}{3\sqrt{2}}\right) \\
C_{77-3} &= -\frac{-4t^2+(U+4W)t+(U+4W)^2+\frac{A_{20}^2}{9}-\frac{1}{3}(t+2U+8W)A_{20}}{2\sqrt{2}} \\
N_{77} &= 2\sqrt{2C_{77,1}^2+C_{77,2}^2+2C_{77,3}^2}
\end{aligned}$$