105^{th} Eigenvector

$\boldsymbol{N_e = 4} \qquad \boldsymbol{s = 1} \qquad \boldsymbol{m_s = -1}$

Irred. Representation : $\boldsymbol{\Gamma_{5,2}}$

$$E_{105} = \frac{A_{11}}{6}$$

$$\begin{aligned}
|\Psi_{105}\rangle &= |4,1,-1,\Gamma_{5,2}\rangle \\
&= C_{105,1}\left(|02dd\rangle - |20dd\rangle - |dd02\rangle + |dd20\rangle\right) \\
&+ C_{105,2}\left(|0d2d\rangle - |0dd2\rangle + |2d0d\rangle - |2dd0\rangle - |d02d\rangle + |d0d2\rangle - |d20d\rangle + |d2d0\rangle\right) \\
&+ C_{105,3}\left(|dddu\rangle + |ddud\rangle - |dudd\rangle - |uddd\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{105-1} &= 4t^2 \\
C_{105-2} &= \frac{1}{3}t\left(J + U - 2W + 2\cos(\theta_3)\sqrt{A_2}\right) \\
C_{105-3} &= \frac{1}{8}\left(-J^2 - 4UJ - 40WJ + 32t^2 - 4U^2\right) \\
&\quad + \left(-\frac{1}{72}(60W - A_{11})(6(J + 2(U + 5W)) - A_{11})\right) \\
N_{105} &= 2\sqrt{C_{105,1}^2 + 2C_{105,2}^2 + C_{105,3}^2}
\end{aligned}$$