205^{th} Eigenvector

$$N_e = 5 \qquad s = \frac{1}{2} \qquad m_s = \frac{1}{2}$$

Irred. Representation : $\Gamma_{4,3}$

$$E_{205} = \frac{1}{3}\left(-J - 3t + 5U + 50W + \left(\cos(\theta_5) + \sqrt{3}\sin(\theta_5)\right)\sqrt{A_6}\right)$$

$$\begin{aligned}
|\Psi_{205}\rangle &= |5, \frac{1}{2}, \frac{1}{2}, \Gamma_{4,3}\rangle \\
&= C_{205,1}\left(|022u\rangle + |0u22\rangle - |20u2\rangle + |220u\rangle - |22u0\rangle + |2u02\rangle - |u022\rangle - |u220\rangle\right) \\
&+ C_{205,2}\left(|02u2\rangle - |202u\rangle - |2u20\rangle + |u202\rangle\right) \\
&+ C_{205,3}\left(|2duu\rangle - |2uud\rangle + |d2uu\rangle - |duu2\rangle - |u2du\rangle - |ud2u\rangle + |uu2d\rangle + |uud2\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{205-1} &= -\frac{t(J + 4t + U)}{2\sqrt{2}} \\
&+ \left(\frac{t\left(-U + 2W + \left(\cos(\theta_5) + \sqrt{3}\sin(\theta_5)\right)\sqrt{A_6}\right)}{2\sqrt{2}}\right) \\
C_{205-2} &= \frac{t(J - 12t + U)}{3\sqrt{2}} \\
&+ \left(\frac{t\left(U - 2W - \left(\cos(\theta_5) + \sqrt{3}\sin(\theta_5)\right)\sqrt{A_6}\right)}{3\sqrt{2}}\right) \\
C_{205-3} &= \frac{15t^2 - (11U + 98W)t + 8U(U + 21W) + J(t - 4(U + 8W))}{6\sqrt{2}} \\
&+ \left(\frac{-A_{24}^2 + 24W(21U + 104W) - 3(t - 4(U + 8W))\left(\cos(\theta_5) + \sqrt{3}\sin(\theta_5)\right)\sqrt{A_6}}{18\sqrt{2}}\right) \\
N_{205} &= 2\sqrt{2C_{205,1}^2 + C_{205,2}^2 + 2C_{205,3}^2}
\end{aligned}$$