204^{th} Eigenvector

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

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

$$E_{204} = \frac{1}{3}\left(-J - 3t + 5U + 50W - 2\cos(\theta_5)\sqrt{A_6}\right)$$

$$\begin{aligned}
|\Psi_{204}\rangle &= |5, \frac{1}{2}, \frac{1}{2}, \Gamma_{4,3}\rangle \\
&= C_{204,1}\left(|022u\rangle + |0u22\rangle - |20u2\rangle + |220u\rangle - |22u0\rangle + |2u02\rangle - |u022\rangle - |u220\rangle\right) \\
&+ C_{204,2}\left(|02u2\rangle - |202u\rangle - |2u20\rangle + |u202\rangle\right) \\
&+ C_{204,3}\left(|2duu\rangle - |2uud\rangle + |d2uu\rangle - |duu2\rangle - |u2du\rangle - |ud2u\rangle + |uu2d\rangle + |uud2\rangle\right)
\end{aligned}$$

$$\begin{aligned}
C_{204-1} &= -\frac{t\left(J + 4t + U - 2W + 2\cos(\theta_5)\sqrt{A_6}\right)}{2\sqrt{2}} \\
C_{204-2} &= \frac{t\left(J - 12t + U - 2W + 2\cos(\theta_5)\sqrt{A_6}\right)}{3\sqrt{2}} \\
C_{204-3} &= \frac{-A_{22}^2 + 3(t - 4(U + 8W))A_{22} + 18\left(2t^2 + (U + 8W)t - 2(U + 8W)^2\right)}{18\sqrt{2}} \\
N_{204} &= 2\sqrt{2C_{204,1}^2 + C_{204,2}^2 + 2C_{204,3}^2}
\end{aligned}$$