182$^{\text{nd}}$ Eigenvector

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

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

$$E_{182} \;=\; \frac{1}{3}\left(-J - 3t + 5U + 50W + \left(\cos\left(\theta_5\right) - \sqrt{3}\sin\left(\theta_5\right)\right)\sqrt{A_6}\right)$$

$$
\begin{aligned}
|\Psi_{182}\rangle \;=\;& |5, \tfrac{1}{2}, -\tfrac{1}{2}, \Gamma_{4,3}\rangle \\
=\;& C_{182,1}\left(|022d\rangle + |0d22\rangle - |20d2\rangle + |220d\rangle - |22d0\rangle + |2d02\rangle - |d022\rangle - |d220\rangle\right) \\
+\;& C_{182,2}\left(|02d2\rangle - |202d\rangle - |2d20\rangle + |d202\rangle\right) \\
+\;& C_{182,3}\left(|2ddu\rangle - |2udd\rangle + |d2ud\rangle - |dd2u\rangle - |ddu2\rangle + |du2d\rangle - |u2dd\rangle + |udd2\rangle\right)
\end{aligned}
$$

$$
\begin{aligned}
C_{182-1} \;=\;& \frac{1}{3}t(J + 6t + U) \\
&+ \left(\frac{1}{6}t\left(2(U - 2W) + \left(\cos\left(\theta_5\right) - \sqrt{3}\sin\left(\theta_5\right)\right)\sqrt{A_6}\right)\right) \\
C_{182-2} \;=\;& \frac{1}{6}\left(J^2 + (t - 2(U + 18W))J + 27t^2 + 9U^2 - 11tU - 98tW + 164UW\right) \\
&+ \left(\frac{1}{18}\left(-A_{23}^2 + 12W(41U + 209W) + 3(J + 4t - 3U - 34W)\left(\sqrt{3}\sin\left(\theta_5\right) - \cos\left(\theta_5\right)\right)\sqrt{A_6}\right)\right) \\
C_{182-3} \;=\;& \frac{1}{6}t(J - 12t + U) \\
&+ \left(\frac{1}{6}t\left(U - 2W + \left(\sqrt{3}\sin\left(\theta_5\right) - \cos\left(\theta_5\right)\right)\sqrt{A_6}\right)\right) \\
N_{182} \;=\;& 2\sqrt{2C_{182,1}^2 + C_{182,2}^2 + 2C_{182,3}^2}
\end{aligned}
$$