108$^{\text{th}}$ **Eigenvector**

$N_e = 4 \qquad s = 1 \qquad m_s = -1$

Irred. Representation : $\Gamma_{5,3}$

$$E_{108} = \frac{A_{11}}{6}$$

$$
\begin{aligned}
|\Psi_{108}\rangle &= |4, 1, -1, \Gamma_{5,3}\rangle \\
&= C_{108,1} \left(|02dd\rangle - |0d2d\rangle + |20dd\rangle - |2d0d\rangle + |d0d2\rangle + |d2d0\rangle - |dd02\rangle - |dd20\rangle \right) \\
&+ \quad C_{108,2} \left(|0dd2\rangle - |2dd0\rangle - |d02d\rangle + |d20d\rangle \right) \\
&+ \quad C_{108,3} \left(|dddu\rangle - |ddud\rangle - |dudd\rangle + |uddd\rangle \right)
\end{aligned}
$$

$$
\begin{aligned}
C_{108-1} &= -\frac{1}{3}t \left(J + U - 2W + 2\cos(\theta_3) \sqrt{A_2} \right) \\
C_{108-2} &= 4t^2 \\
C_{108-3} &= \frac{1}{8} \left(J^2 + 4(U + 10W)J + 4\left(U^2 - 8t^2\right) \right) \\
&\quad + \left(\frac{1}{72} (60W - A_{11}) \left(6(J + 2(U + 5W)) - A_{11} \right) \right) \\
N_{108} &= 2\sqrt{2C_{108,1}^2 + C_{108,2}^2 + C_{108,3}^2}
\end{aligned}
$$