* Rank 0 tensor.

$[Q]$

$Q = Q_s^{(1)}$

* Rank 1 tensor.

$\begin{bmatrix} 0 & 0 & Q_z \end{bmatrix}$

$Q_z = Q_{pz}^{(1)}$

* Rank 2 tensor (s).

$$\begin{bmatrix} Q_{xx} & 0 & 0 \\ 0 & Q_{xx} & 0 \\ 0 & 0 & Q_{zz} \end{bmatrix}$$

$Q_{xx} = -Q_{du}^{(1)} + Q_s^{(1)}$

$Q_{zz} = 2Q_{du}^{(1)} + Q_s^{(1)}$

* Rank 2 tensor (a).  * Rank 3 tensor (s).

$$\begin{bmatrix} 0 & Q_{xxy} & Q_{xxz} \\ 0 & -Q_{xxy} & Q_{xxz} \\ 0 & 0 & Q_{zzz} \\ 0 & Q_{yzy} & 0 \\ Q_{yzy} & 0 & 0 \\ Q_{xxy} & 0 & 0 \end{bmatrix}$$

$Q_{xxy} = Q_{f1}^{(1)}$

$Q_{xxz} = -Q_{faz}^{(1)} + Q_{pz}^{(1)}$

$Q_{zzz} = 2Q_{faz}^{(1)} + Q_{pz}^{(1)} + 2Q_{pz}^{(2)}$

$Q_{yzy} = -Q_{faz}^{(1)} + Q_{pz}^{(2)}$

* Rank 3 tensor (a).

$$\begin{bmatrix} 0 & Q_{yzy} & 0 \\ -Q_{yzy} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$Q_{yzy} = Q_{pz}^{(3)}$

* Rank 4 tensor (sss).

$$\begin{bmatrix} Q_{xxxx} & Q_{xxyy} & Q_{xxzz} & Q_{xxyz} & 0 & 0 \\ Q_{xxyy} & Q_{xxxx} & Q_{xxzz} & -Q_{xxyz} & 0 & 0 \\ Q_{xxzz} & Q_{xxzz} & Q_{zzzz} & 0 & 0 & 0 \\ Q_{xxyz} & -Q_{xxyz} & 0 & Q_{yzyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & Q_{yzyz} & Q_{xxyz} \\ 0 & 0 & 0 & 0 & Q_{xxyz} & \frac{Q_{xxxx}}{2} - \frac{Q_{xxyy}}{2} \end{bmatrix}$$

$$Q_{xxxx} = -2Q_{du}^{(1)} - 4Q_{du}^{(2)} + 3Q_{g0}^{(1)} + Q_s^{(1)} + 2Q_s^{(2)}$$

$$Q_{xxyy} = -2Q_{du}^{(1)} + Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{xxzz} = Q_{du}^{(1)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{xxyz} = Q_{gb}^{(1)}$$

$$Q_{zzzz} = 4Q_{du}^{(1)} + 8Q_{du}^{(2)} + 8Q_{g0}^{(1)} + Q_s^{(1)} + 2Q_s^{(2)}$$

$$Q_{yzyz} = Q_{du}^{(2)} - 4Q_{g0}^{(1)} + Q_s^{(2)}$$

* Rank 4 tensor (ssa).

$$
\begin{bmatrix}
0 & 0 & Q_{xxzz} & Q_{xxyz} & 0 & 0 \\
0 & 0 & Q_{xxzz} & -Q_{xxyz} & 0 & 0 \\
-Q_{xxzz} & -Q_{xxzz} & 0 & 0 & 0 & 0 \\
-Q_{xxyz} & Q_{xxyz} & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & 0 & 0 & -Q_{xxyz} \\
0 & 0 & 0 & 0 & Q_{xxyz} & 0
\end{bmatrix}
$$

$$Q_{xxzz} = 3Q_{du}^{(3)}$$

$$Q_{xxyz} = 2G_{f2}^{(1)}$$

* Rank 4 tensor (aas).

$$
\begin{bmatrix}
Q_{yzyz} & 0 & 0 \\
0 & Q_{yzyz} & 0 \\
0 & 0 & Q_{xyxy}
\end{bmatrix}
$$

$$Q_{yzyz} = -2Q_{du}^{(4)} + Q_s^{(3)}$$

$$Q_{xyxy} = 4Q_{du}^{(4)} + Q_s^{(3)}$$

* Rank 4 tensor (aaa). * Rank 4 tensor (sa).

$$
\begin{bmatrix}
Q_{xxyz} & 0 & 0 \\
-Q_{xxyz} & 0 & 0 \\
0 & 0 & 0 \\
Q_{yzyz} & 0 & 0 \\
0 & -Q_{yzyz} & 0 \\
0 & -Q_{xxyz} & 0
\end{bmatrix}
$$

$$Q_{xxyz} = G_{f2}^{(2)}$$

$$Q_{yzyz} = -3Q_{du}^{(5)}$$

* Rank 4 tensor (as).

$$
\begin{bmatrix}
Q_{yzxx} & -Q_{yzxx} & 0 & Q_{yzyz} & 0 & 0 \\
0 & 0 & 0 & 0 & -Q_{yzyz} & -Q_{yzxx} \\
0 & 0 & 0 & 0 & 0 & 0
\end{bmatrix}
$$

$$Q_{yzxx} = G_{f2}^{(3)}$$

$$Q_{yzyz} = -3Q_{du}^{(6)}$$

* Rank 4 tensor (s).

$$
\begin{bmatrix}
Q_{xxxx} & Q_{xxyy} & Q_{xxzz} & Q_{xxyz} & 0 & 0 & Q_{xxzy} & 0 & 0 \\
Q_{xxyy} & Q_{xxxx} & Q_{xxzz} & -Q_{xxyz} & 0 & 0 & -Q_{xxzy} & 0 & 0 \\
Q_{zzxx} & Q_{zzxx} & Q_{zzzz} & 0 & 0 & 0 & 0 & 0 & 0 \\
Q_{yzxx} & -Q_{yzxx} & 0 & Q_{yzyz} & 0 & 0 & Q_{yzzy} & 0 & 0 \\
0 & 0 & 0 & 0 & Q_{yzzy} & Q_{yzxx} & 0 & Q_{yzyz} & Q_{yzxx} \\
0 & 0 & 0 & 0 & Q_{xxzy} & \frac{Q_{xxxx}}{2} - \frac{Q_{xxyy}}{2} & 0 & Q_{xxyz} & \frac{Q_{xxxx}}{2} - \frac{Q_{xxyy}}{2}
\end{bmatrix}
$$

$$Q_{xxxx} = -2Q_{du}^{(1)} - 4Q_{du}^{(2)} + 3Q_{g0}^{(1)} + Q_s^{(1)} + 2Q_s^{(2)}$$

$$Q_{xxyy} = -2Q_{du}^{(1)} + Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{xxzz} = Q_{du}^{(1)} + 3Q_{du}^{(3)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{xxyz} = 2G_{f2}^{(1)} + G_{f2}^{(2)} + Q_{gb}^{(1)}$$

$$Q_{xxzy} = 2G_{f2}^{(1)} - G_{f2}^{(2)} + Q_{gb}^{(1)}$$

$$Q_{zzxx} = Q_{du}^{(1)} - 3Q_{du}^{(3)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{zzzz} = 4Q_{du}^{(1)} + 8Q_{du}^{(2)} + 8Q_{g0}^{(1)} + Q_s^{(1)} + 2Q_s^{(2)}$$

$$Q_{yzxx} = -2G_{f2}^{(1)} + Q_{gb}^{(1)}$$

$$Q_{yzyz} = Q_{du}^{(2)} - 3Q_{du}^{(5)} - 4Q_{g0}^{(1)} + Q_s^{(2)}$$

$$Q_{yzzy} = Q_{du}^{(2)} + 3Q_{du}^{(5)} - 4Q_{g0}^{(1)} + Q_s^{(2)}$$

* Rank 4 tensor (a).

$$
\begin{bmatrix}
Q_{yzxx} & -Q_{yzxx} & 0 & Q_{yzyz} & 0 & 0 & Q_{yzzy} & 0 & 0 \\
0 & 0 & 0 & 0 & -Q_{yzzy} & -Q_{yzxx} & 0 & -Q_{yzyz} & -Q_{yzxx} \\
0 & 0 & 0 & 0 & 0 & Q_{xyxy} & 0 & 0 & -Q_{xyxy}
\end{bmatrix}
$$

$$Q_{yzxx} = G_{f2}^{(3)}$$

$$Q_{yzyz} = -2Q_{du}^{(4)} - 3Q_{du}^{(6)} + Q_s^{(3)}$$

$$Q_{yzzy} = 2Q_{du}^{(4)} - 3Q_{du}^{(6)} - Q_s^{(3)}$$

$$Q_{xyxy} = 4Q_{du}^{(4)} + Q_s^{(3)}$$

* Rank 4 tensor (t).

$$
\begin{bmatrix}
Q_{xxxx} & 0 & 0 \\
0 & Q_{xxxx} & Q_{yyyz} \\
0 & 0 & Q_{zzzz} \\
0 & Q_{yyyz} & Q_{yyzz} \\
Q_{zzxx} & 0 & 0 \\
0 & Q_{xxyy} & -Q_{yyyz} \\
0 & Q_{yzzy} & 0 \\
0 & -Q_{yyyz} & -\frac{Q_{xxxx}}{2} + \frac{3Q_{xxyy}}{2} + Q_{yyzz} - Q_{yzzy} + Q_{zzxx} \\
\frac{Q_{xxxx}}{2} - \frac{Q_{xxyy}}{2} & 0 & 0 \\
-Q_{yyyz} & 0 & 0
\end{bmatrix}
$$

$$Q_{xxxx} = -2Q_{du}^{(1)} - 4Q_{du}^{(2)} + 3Q_{g0}^{(1)} + 3Q_s^{(1)}$$

$$Q_{yyyz} = -Q_{gb}^{(1)}$$

$$Q_{zzzz} = 4Q_{du}^{(1)} + 8Q_{du}^{(2)} + 8Q_{g0}^{(1)} + 3Q_s^{(1)}$$

$$Q_{yyzz} = Q_{du}^{(1)} + 3Q_{du}^{(3)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{zzxx} = Q_{du}^{(1)} - 3Q_{du}^{(3)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{xxyy} = -2Q_{du}^{(1)} + Q_{g0}^{(1)} + Q_s^{(1)}$$

$$Q_{yzzy} = Q_{du}^{(2)} + 3Q_{du}^{(5)} - 4Q_{g0}^{(1)} + Q_s^{(1)}$$