* Rank 0 tensor.

$$[T]$$

$$T = T_s^{(1)}$$

* Rank 1 tensor. * Rank 2 tensor (s).

$$\begin{bmatrix} T_{xx} & 0 & 0 \\ 0 & T_{yy} & 0 \\ 0 & 0 & T_{zz} \end{bmatrix}$$

$$T_{xx} = -T_{du}^{(1)} + T_{dv}^{(1)} + T_s^{(1)}$$
$$T_{yy} = -T_{du}^{(1)} - T_{dv}^{(1)} + T_s^{(1)}$$
$$T_{zz} = 2T_{du}^{(1)} + T_s^{(1)}$$

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

$$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ T_{yzx} & 0 & 0 \\ 0 & T_{zxy} & 0 \\ 0 & 0 & T_{xyz} \end{bmatrix}$$

$$T_{yzx} = -3M_{du}^{(1)} - M_{dv}^{(1)} + T_{f3}^{(1)}$$
$$T_{zxy} = 3M_{du}^{(1)} - M_{dv}^{(1)} + T_{f3}^{(1)}$$
$$T_{xyz} = 2M_{dv}^{(1)} + T_{f3}^{(1)}$$

* Rank 3 tensor (a).

$$\begin{bmatrix} T_{yzx} & 0 & 0 \\ 0 & T_{zxy} & 0 \\ 0 & 0 & T_{xyz} \end{bmatrix}$$

$$T_{yzx} = -M_{du}^{(2)} + M_{dv}^{(2)} + M_s^{(1)}$$
$$T_{zxy} = -M_{du}^{(2)} - M_{dv}^{(2)} + M_s^{(1)}$$
$$T_{xyz} = 2M_{du}^{(2)} + M_s^{(1)}$$

* Rank 4 tensor (sss).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & T_{xxzz} & 0 & 0 & 0 \\ T_{xxyy} & T_{yyyy} & T_{yyzz} & 0 & 0 & 0 \\ T_{xxzz} & T_{yyzz} & T_{zzzz} & 0 & 0 & 0 \\ 0 & 0 & 0 & T_{yzyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & T_{zxzx} & 0 \\ 0 & 0 & 0 & 0 & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{xxxx} = -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{xxyy} = -2T_{du}^{(1)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{xxzz} = T_{du}^{(1)} + T_{dv}^{(1)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{yyyy} = -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{yyzz} = T_{du}^{(1)} - T_{dv}^{(1)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{zzzz} = 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{yzyz} = T_{du}^{(2)} - T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

$$T_{zxzx} = T_{du}^{(2)} + T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

$$T_{xyxy} = -2T_{du}^{(2)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

* Rank 4 tensor (ssa).

$$\begin{bmatrix} 0 & T_{xxyy} & T_{xxzz} & 0 & 0 & 0 \\ -T_{xxyy} & 0 & T_{yyzz} & 0 & 0 & 0 \\ -T_{xxzz} & -T_{yyzz} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$T_{xxyy} = 4M_{f3}^{(1)} - 2T_{dv}^{(3)}$$

$$T_{xxzz} = -4M_{f3}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(3)}$$

$$T_{yyzz} = 4M_{f3}^{(1)} + 3T_{du}^{(3)} + T_{dv}^{(3)}$$

* Rank 4 tensor (aas).

$$\begin{bmatrix} T_{yzyz} & 0 & 0 \\ 0 & T_{zxzx} & 0 \\ 0 & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{yzyz} = -2T_{du}^{(4)} + 2T_{dv}^{(4)} + T_s^{(3)}$$

$$T_{zxzx} = -2T_{du}^{(4)} - 2T_{dv}^{(4)} + T_s^{(3)}$$

$$T_{xyxy} = 4T_{du}^{(4)} + T_s^{(3)}$$

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

$$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ T_{yzyz} & 0 & 0 \\ 0 & T_{zxzx} & 0 \\ 0 & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{yzyz} = M_{f3}^{(2)} - 3T_{du}^{(5)} - T_{dv}^{(5)}$$

$$T_{zxzx} = M_{f3}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(5)}$$

$$T_{xyxy} = M_{f3}^{(2)} + 2T_{dv}^{(5)}$$

* Rank 4 tensor (as).

$$\begin{bmatrix} 0 & 0 & 0 & T_{yzyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & T_{zxzx} & 0 \\ 0 & 0 & 0 & 0 & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{yzyz} = M_{f3}^{(3)} - 3T_{du}^{(6)} - T_{dv}^{(6)}$$
$$T_{zxzx} = M_{f3}^{(3)} + 3T_{du}^{(6)} - T_{dv}^{(6)}$$
$$T_{xyxy} = M_{f3}^{(3)} + 2T_{dv}^{(6)}$$

* Rank 4 tensor (s).

$$
\begin{bmatrix}
T_{xxxx} & T_{xxyy} & T_{xxzz} & 0 & 0 & 0 & 0 & 0 & 0 \\
T_{yyxx} & T_{yyyy} & T_{yyzz} & 0 & 0 & 0 & 0 & 0 & 0 \\
T_{zzxx} & T_{zzyy} & T_{zzzz} & 0 & 0 & 0 & 0 & 0 & 0 \\
0 & 0 & 0 & T_{yzyz} & 0 & 0 & T_{yzzy} & 0 & 0 \\
0 & 0 & 0 & 0 & T_{zxzx} & 0 & 0 & T_{zxxz} & 0 \\
0 & 0 & 0 & 0 & 0 & T_{xyxy} & 0 & 0 & T_{xyyx}
\end{bmatrix}
$$

$$T_{xxxx} = -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$
$$T_{xxyy} = 4M_{f3}^{(1)} - 2T_{du}^{(1)} - 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{xxzz} = -4M_{f3}^{(1)} + T_{du}^{(1)} + 3T_{du}^{(3)} + T_{dv}^{(1)} - T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{yyxx} = -4M_{f3}^{(1)} - 2T_{du}^{(1)} + 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{yyyy} = -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$
$$T_{yyzz} = 4M_{f3}^{(1)} + T_{du}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{zzxx} = 4M_{f3}^{(1)} + T_{du}^{(1)} - 3T_{du}^{(3)} + T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{zzyy} = -4M_{f3}^{(1)} + T_{du}^{(1)} - 3T_{du}^{(3)} - T_{dv}^{(1)} - T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$
$$T_{zzzz} = 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$
$$T_{yzyz} = M_{f3}^{(2)} + T_{du}^{(2)} - 3T_{du}^{(5)} - T_{dv}^{(2)} - T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$
$$T_{yzzy} = -M_{f3}^{(2)} + T_{du}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$
$$T_{zxzx} = M_{f3}^{(2)} + T_{du}^{(2)} + 3T_{du}^{(5)} + T_{dv}^{(2)} - T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$
$$T_{zxxz} = -M_{f3}^{(2)} + T_{du}^{(2)} - 3T_{du}^{(5)} + T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$
$$T_{xyxy} = M_{f3}^{(2)} - 2T_{du}^{(2)} + 2T_{dv}^{(5)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}$$
$$T_{xyyx} = -M_{f3}^{(2)} - 2T_{du}^{(2)} - 2T_{dv}^{(5)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

* Rank 4 tensor (a).

$$
\begin{bmatrix}
0 & 0 & 0 & T_{yzyz} & 0 & 0 & T_{yzzy} & 0 & 0 \\
0 & 0 & 0 & 0 & T_{zxzx} & 0 & 0 & T_{zxxz} & 0 \\
0 & 0 & 0 & 0 & 0 & T_{xyxy} & 0 & 0 & T_{xyyx}
\end{bmatrix}
$$

$$T_{yzyz} = M_{f3}^{(3)} - 2T_{du}^{(4)} - 3T_{du}^{(6)} + 2T_{dv}^{(4)} - T_{dv}^{(6)} + T_s^{(3)}$$
$$T_{yzzy} = M_{f3}^{(3)} + 2T_{du}^{(4)} - 3T_{du}^{(6)} - 2T_{dv}^{(4)} - T_{dv}^{(6)} - T_s^{(3)}$$
$$T_{zxzx} = M_{f3}^{(3)} - 2T_{du}^{(4)} + 3T_{du}^{(6)} - 2T_{dv}^{(4)} - T_{dv}^{(6)} + T_s^{(3)}$$
$$T_{zxxz} = M_{f3}^{(3)} + 2T_{du}^{(4)} + 3T_{du}^{(6)} + 2T_{dv}^{(4)} - T_{dv}^{(6)} - T_s^{(3)}$$
$$T_{xyxy} = M_{f3}^{(3)} + 4T_{du}^{(4)} + 2T_{dv}^{(6)} + T_s^{(3)}$$
$$T_{xyyx} = M_{f3}^{(3)} - 4T_{du}^{(4)} + 2T_{dv}^{(6)} - T_s^{(3)}$$

* Rank 4 tensor (t).

$$
\begin{bmatrix}
T_{xxxx} & 0 & 0 \\
0 & T_{yyyy} & 0 \\
0 & 0 & T_{zzzz} \\
0 & 0 & T_{yyzz} \\
T_{zzxx} & 0 & 0 \\
0 & T_{xxyy} & 0 \\
0 & T_{yzzy} & 0 \\
0 & 0 & T_{zxxz} \\
T_{xxyy} + T_{yyzz} - T_{yzzy} - T_{zxxz} + T_{zzxx} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}
$$

$T_{xxxx} = -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_{g}^{(1)} + 3T_{s}^{(1)}$

$T_{yyyy} = -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_{g}^{(1)} + 3T_{s}^{(1)}$

$T_{zzzz} = 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_{g}^{(1)} + 3T_{s}^{(1)}$

$T_{yyzz} = T_{du}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_{g}^{(1)} + T_{s}^{(1)}$

$T_{zzxx} = T_{du}^{(1)} - 3T_{du}^{(3)} + T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_{g}^{(1)} + T_{s}^{(1)}$

$T_{xxyy} = -2T_{du}^{(1)} - 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_{g}^{(1)} + T_{s}^{(1)}$

$T_{yzzy} = T_{du}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_{g}^{(1)} + T_{s}^{(1)}$

$T_{zxxz} = T_{du}^{(2)} - 3T_{du}^{(5)} + T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_{g}^{(1)} + T_{s}^{(1)}$