

* Rank 0 tensor. * Rank 1 tensor.

$$[0 \quad 0 \quad M_z]$$

$$M_z = M_{pz}^{(1)}$$

* Rank 2 tensor (s).

$$\begin{bmatrix} 0 & M_{xy} & 0 \\ M_{xy} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$M_{xy} = M_{dxy}^{(1)}$$

* Rank 2 tensor (a).

$$\begin{bmatrix} 0 & M_{xy} & 0 \\ -M_{xy} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$M_{xy} = T_{pz}^{(1)}$$

* Rank 3 tensor (s).

$$\begin{bmatrix} 0 & 0 & M_{xxz} \\ 0 & 0 & M_{yyz} \\ 0 & 0 & M_{zzz} \\ 0 & M_{yzy} & 0 \\ M_{zxx} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$M_{xxz} = -M_{faz}^{(1)} + M_{fbz}^{(1)} + M_{pz}^{(1)} - 2T_{dxy}^{(1)}$$

$$M_{yyz} = -M_{faz}^{(1)} - M_{fbz}^{(1)} + M_{pz}^{(1)} + 2T_{dxy}^{(1)}$$

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

$$M_{yzy} = -M_{faz}^{(1)} - M_{fbz}^{(1)} + M_{pz}^{(2)} - T_{dxy}^{(1)}$$

$$M_{zxx} = -M_{faz}^{(1)} + M_{fbz}^{(1)} + M_{pz}^{(2)} + T_{dxy}^{(1)}$$

* Rank 3 tensor (a).

$$\begin{bmatrix} 0 & M_{yzy} & 0 \\ M_{zxx} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$M_{yzy} = M_{pz}^{(3)} + T_{dxy}^{(2)}$$

$$M_{zxx} = -M_{pz}^{(3)} + T_{dxy}^{(2)}$$

* Rank 4 tensor (sss).

$$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & M_{xxxx} \\ 0 & 0 & 0 & 0 & 0 & M_{yyyy} \\ 0 & 0 & 0 & 0 & 0 & M_{zzzy} \\ 0 & 0 & 0 & 0 & M_{yzzx} & 0 \\ 0 & 0 & 0 & M_{yzzx} & 0 & 0 \\ M_{xxxx} & M_{yyyy} & M_{zzxy} & 0 & 0 & 0 \end{bmatrix}$$

$$\begin{aligned}
M_{xxxy} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{gaz}^{(1)} - M_{gbz}^{(1)} \\
M_{yyxy} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} - M_{gaz}^{(1)} - M_{gbz}^{(1)} \\
M_{zzxy} &= M_{dxy}^{(1)} + 2M_{gbz}^{(1)} \\
M_{yzzx} &= M_{dxy}^{(2)} + 2M_{gbz}^{(1)}
\end{aligned}$$

* Rank 4 tensor (ssa).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & 0 & M_{xxxy} \\
0 & 0 & 0 & 0 & 0 & M_{yyxy} \\
0 & 0 & 0 & 0 & 0 & M_{zzxy} \\
0 & 0 & 0 & 0 & M_{yzzx} & 0 \\
0 & 0 & 0 & -M_{yzzx} & 0 & 0 \\
-M_{xxxy} & -M_{yyxy} & -M_{zzxy} & 0 & 0 & 0
\end{bmatrix}$$

$$\begin{aligned}
M_{xxxy} &= M_{dxy}^{(3)} - 2T_{faz}^{(1)} + 2T_{fbz}^{(1)} + 2T_{pz}^{(1)} \\
M_{yyxy} &= M_{dxy}^{(3)} + 2T_{faz}^{(1)} + 2T_{fbz}^{(1)} - 2T_{pz}^{(1)} \\
M_{zzxy} &= M_{dxy}^{(3)} - 4T_{fbz}^{(1)} \\
M_{yzzx} &= -4T_{faz}^{(1)} - T_{pz}^{(1)}
\end{aligned}$$

* Rank 4 tensor (aas).

$$\begin{bmatrix}
0 & M_{yzzx} & 0 \\
M_{yzzx} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}$$

$$M_{yzzx} = 2M_{dxy}^{(4)}$$

* Rank 4 tensor (aaa).

$$\begin{bmatrix}
0 & M_{yzzx} & 0 \\
-M_{yzzx} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}$$

$$M_{yzzx} = -T_{pz}^{(2)}$$

* Rank 4 tensor (sa).

$$\begin{bmatrix}
0 & 0 & M_{xxxy} \\
0 & 0 & M_{yyxy} \\
0 & 0 & M_{zzxy} \\
0 & M_{yzzx} & 0 \\
M_{zxzy} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}$$

$$\begin{aligned}
M_{xxxy} &= -2M_{dxy}^{(5)} - T_{faz}^{(2)} + T_{fbz}^{(2)} + T_{pz}^{(3)} \\
M_{yyxy} &= 2M_{dxy}^{(5)} - T_{faz}^{(2)} - T_{fbz}^{(2)} + T_{pz}^{(3)} \\
M_{zzxy} &= 2T_{faz}^{(2)} + T_{pz}^{(3)} + 2T_{pz}^{(4)} \\
M_{yzzx} &= -M_{dxy}^{(5)} - T_{faz}^{(2)} - T_{fbz}^{(2)} + T_{pz}^{(4)} \\
M_{zxzy} &= M_{dxy}^{(5)} - T_{faz}^{(2)} + T_{fbz}^{(2)} + T_{pz}^{(4)}
\end{aligned}$$

* Rank 4 tensor (as).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & M_{yzzx} & 0 \\
0 & 0 & 0 & M_{zxzy} & 0 & 0 \\
M_{xyyx} & M_{xyyy} & M_{xyzz} & 0 & 0 & 0
\end{bmatrix}$$

$$\begin{aligned}
M_{yzzx} &= M_{dxy}^{(6)} - T_{faz}^{(3)} + T_{fbz}^{(3)} + T_{pz}^{(6)} \\
M_{zxyz} &= -M_{dxy}^{(6)} - T_{faz}^{(3)} - T_{fbz}^{(3)} + T_{pz}^{(6)} \\
M_{xyxx} &= -2M_{dxy}^{(6)} - T_{faz}^{(3)} + T_{fbz}^{(3)} + T_{pz}^{(5)} \\
M_{xyyy} &= 2M_{dxy}^{(6)} - T_{faz}^{(3)} - T_{fbz}^{(3)} + T_{pz}^{(5)} \\
M_{xyzz} &= 2T_{faz}^{(3)} + T_{pz}^{(5)} + 2T_{pz}^{(6)}
\end{aligned}$$

* Rank 4 tensor (s).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & 0 & M_{xxyx} & 0 & 0 & M_{xxyx} \\
0 & 0 & 0 & 0 & 0 & M_{yyyx} & 0 & 0 & M_{yyyx} \\
0 & 0 & 0 & 0 & 0 & M_{zzxy} & 0 & 0 & M_{zzxy} \\
0 & 0 & 0 & 0 & M_{yzzx} & 0 & 0 & M_{yzzx} & 0 \\
0 & 0 & 0 & M_{zxyz} & 0 & 0 & M_{zxyz} & 0 & 0 \\
M_{xyxx} & M_{xyyy} & M_{xyzz} & 0 & 0 & 0 & 0 & 0 & 0
\end{bmatrix}$$

$$\begin{aligned}
M_{xxyx} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} - 2M_{dxy}^{(5)} + M_{gaz}^{(1)} - M_{gbz}^{(1)} - 2T_{faz}^{(1)} - T_{faz}^{(2)} + 2T_{fbz}^{(1)} + T_{fbz}^{(2)} + 2T_{pz}^{(1)} + T_{pz}^{(3)} \\
M_{xyxx} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} + 2M_{dxy}^{(5)} + M_{gaz}^{(1)} - M_{gbz}^{(1)} - 2T_{faz}^{(1)} + T_{faz}^{(2)} + 2T_{fbz}^{(1)} - T_{fbz}^{(2)} + 2T_{pz}^{(1)} - T_{pz}^{(3)} \\
M_{yyyx} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} + 2M_{dxy}^{(5)} - M_{gaz}^{(1)} - M_{gbz}^{(1)} + 2T_{faz}^{(1)} - T_{faz}^{(2)} + 2T_{fbz}^{(1)} - T_{fbz}^{(2)} - 2T_{pz}^{(1)} + T_{pz}^{(3)} \\
M_{yyyx} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} - 2M_{dxy}^{(5)} - M_{gaz}^{(1)} - M_{gbz}^{(1)} + 2T_{faz}^{(1)} + T_{faz}^{(2)} + 2T_{fbz}^{(1)} + T_{fbz}^{(2)} - 2T_{pz}^{(1)} - T_{pz}^{(3)} \\
M_{zzxy} &= M_{dxy}^{(1)} + M_{dxy}^{(3)} + 2M_{gbz}^{(1)} + 2T_{faz}^{(2)} - 4T_{fbz}^{(1)} + T_{pz}^{(3)} + 2T_{pz}^{(4)} \\
M_{zzyx} &= M_{dxy}^{(1)} + M_{dxy}^{(3)} + 2M_{gbz}^{(1)} - 2T_{faz}^{(2)} - 4T_{fbz}^{(1)} - T_{pz}^{(3)} - 2T_{pz}^{(4)} \\
M_{yzzx} &= M_{dxy}^{(2)} - M_{dxy}^{(5)} + 2M_{gbz}^{(1)} - 4T_{faz}^{(1)} - T_{faz}^{(2)} - T_{fbz}^{(2)} - T_{pz}^{(1)} + T_{pz}^{(4)} \\
M_{yzzx} &= M_{dxy}^{(2)} + M_{dxy}^{(5)} + 2M_{gbz}^{(1)} - 4T_{faz}^{(1)} + T_{faz}^{(2)} + T_{fbz}^{(2)} - T_{pz}^{(1)} - T_{pz}^{(4)} \\
M_{zxyz} &= M_{dxy}^{(2)} + M_{dxy}^{(5)} + 2M_{gbz}^{(1)} + 4T_{faz}^{(1)} - T_{faz}^{(2)} + T_{fbz}^{(2)} + T_{pz}^{(1)} + T_{pz}^{(4)} \\
M_{zxyz} &= M_{dxy}^{(2)} - M_{dxy}^{(5)} + 2M_{gbz}^{(1)} + 4T_{faz}^{(1)} + T_{faz}^{(2)} - T_{fbz}^{(2)} + T_{pz}^{(1)} - T_{pz}^{(4)} \\
M_{xyxx} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} - M_{dxy}^{(3)} + M_{gaz}^{(1)} - M_{gbz}^{(1)} + 2T_{faz}^{(1)} - 2T_{fbz}^{(1)} - 2T_{pz}^{(1)} \\
M_{xyyy} &= M_{dxy}^{(1)} + 2M_{dxy}^{(2)} - M_{dxy}^{(3)} - M_{gaz}^{(1)} - M_{gbz}^{(1)} - 2T_{faz}^{(1)} - 2T_{fbz}^{(1)} + 2T_{pz}^{(1)} \\
M_{xyzz} &= M_{dxy}^{(1)} - M_{dxy}^{(3)} + 2M_{gbz}^{(1)} + 4T_{fbz}^{(1)}
\end{aligned}$$

* Rank 4 tensor (a).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & M_{yzzx} & 0 & 0 & M_{yzzx} & 0 \\
0 & 0 & 0 & M_{zxyz} & 0 & 0 & M_{zxyz} & 0 & 0 \\
M_{xyxx} & M_{xyyy} & M_{xyzz} & 0 & 0 & 0 & 0 & 0 & 0
\end{bmatrix}$$

$$\begin{aligned}
M_{yzzx} &= 2M_{dxy}^{(4)} + M_{dxy}^{(6)} - T_{faz}^{(3)} + T_{fbz}^{(3)} - T_{pz}^{(2)} + T_{pz}^{(6)} \\
M_{yzzx} &= -2M_{dxy}^{(4)} + M_{dxy}^{(6)} - T_{faz}^{(3)} + T_{fbz}^{(3)} + T_{pz}^{(2)} + T_{pz}^{(6)} \\
M_{zxyz} &= 2M_{dxy}^{(4)} - M_{dxy}^{(6)} - T_{faz}^{(3)} - T_{fbz}^{(3)} + T_{pz}^{(2)} + T_{pz}^{(6)} \\
M_{zxyz} &= -2M_{dxy}^{(4)} - M_{dxy}^{(6)} - T_{faz}^{(3)} - T_{fbz}^{(3)} - T_{pz}^{(2)} + T_{pz}^{(6)} \\
M_{xyxx} &= -2M_{dxy}^{(6)} - T_{faz}^{(3)} + T_{fbz}^{(3)} + T_{pz}^{(5)} \\
M_{xyyy} &= 2M_{dxy}^{(6)} - T_{faz}^{(3)} - T_{fbz}^{(3)} + T_{pz}^{(5)} \\
M_{xyzz} &= 2T_{faz}^{(3)} + T_{pz}^{(5)} + 2T_{pz}^{(6)}
\end{aligned}$$

* Rank 4 tensor (t).

$$\begin{bmatrix} 0 & M_{xxxy} & 0 \\ M_{yyyyx} & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & M_{zzxy} & 0 \\ M_{xxyx} & 0 & 0 \\ M_{yzzx} & 0 & 0 \\ 0 & 0 & 0 \\ 0 & M_{xyyy} & 0 \\ 0 & 0 & \frac{M_{xxxy}}{2} - \frac{M_{xxyx}}{2} + M_{xyyy} - M_{yyyyx} + M_{zzxy} \end{bmatrix}$$

$$M_{xxxy} = M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} - 2M_{dxy}^{(5)} + M_{gaz}^{(1)} - M_{gbz}^{(1)}$$

$$M_{yyyyx} = M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} - 2M_{dxy}^{(5)} - M_{gaz}^{(1)} - M_{gbz}^{(1)}$$

$$M_{zzxy} = M_{dxy}^{(1)} + M_{dxy}^{(3)} + 2M_{gbz}^{(1)}$$

$$M_{xxyx} = M_{dxy}^{(1)} + 2M_{dxy}^{(2)} + M_{dxy}^{(3)} + 2M_{dxy}^{(5)} + M_{gaz}^{(1)} - M_{gbz}^{(1)}$$

$$M_{yzzx} = M_{dxy}^{(2)} - M_{dxy}^{(5)} + 2M_{gbz}^{(1)}$$

$$M_{xyyy} = M_{dxy}^{(1)} + 2M_{dxy}^{(2)} - M_{dxy}^{(3)} - M_{gaz}^{(1)} - M_{gbz}^{(1)}$$