

* Rank 0 tensor.

$$[T]$$

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

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

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

$$T_{xx} = -T_{du}^{(1)} + T_s^{(1)}$$

$$T_{zz} = 2T_{du}^{(1)} + T_s^{(1)}$$

* Rank 2 tensor (a).

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

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

* Rank 3 tensor (s). * Rank 3 tensor (a). * Rank 4 tensor (sss).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & T_{xxzz} & 0 & 0 & T_{xxxz} \\ T_{xxyy} & T_{xxxx} & T_{xxzz} & 0 & 0 & -T_{xxxz} \\ T_{xxzz} & T_{xxzz} & T_{zzzz} & 0 & 0 & 0 \\ 0 & 0 & 0 & T_{yzyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & T_{yzyz} & 0 \\ T_{xxxz} & -T_{xxxy} & 0 & 0 & 0 & T_{xyxy} \end{bmatrix}$$

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

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

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

$$T_{xxxz} = T_{gaz}^{(1)}$$

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

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

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

* Rank 4 tensor (ssa).

$$\begin{bmatrix} 0 & 0 & T_{xxzz} & 0 & 0 & T_{xxxz} \\ 0 & 0 & T_{xxzz} & 0 & 0 & -T_{xxxz} \\ -T_{xxzz} & -T_{xxzz} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & T_{yzzx} & 0 \\ 0 & 0 & 0 & -T_{yzzx} & 0 & 0 \\ -T_{xxxz} & T_{xxxy} & 0 & 0 & 0 & 0 \end{bmatrix}$$

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

$$T_{xxxy} = -2M_{faz}^{(1)} + 2M_{pz}^{(1)}$$

$$T_{yzzx} = -4M_{faz}^{(1)} - M_{pz}^{(1)}$$

* Rank 4 tensor (aas).

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

$$\begin{aligned} T_{yzyz} &= -2T_{du}^{(4)} + T_s^{(3)} \\ T_{xyxy} &= 4T_{du}^{(4)} + T_s^{(3)} \end{aligned}$$

* Rank 4 tensor (aaa).

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

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

* Rank 4 tensor (sa).

$$\begin{bmatrix} 0 & 0 & T_{xxxy} \\ 0 & 0 & T_{xxxy} \\ 0 & 0 & T_{zzxy} \\ T_{yzyz} & T_{yzzx} & 0 \\ T_{yzzx} & -T_{yzyz} & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

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

* Rank 4 tensor (as).

$$\begin{bmatrix} 0 & 0 & 0 & T_{yzyz} & T_{yzzx} & 0 \\ 0 & 0 & 0 & T_{yzzx} & -T_{yzyz} & 0 \\ T_{xyxx} & T_{xyxx} & T_{xyzz} & 0 & 0 & 0 \end{bmatrix}$$

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

* Rank 4 tensor (s).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & T_{xzzz} & 0 & 0 & T_{xxxy} & 0 & 0 & T_{xxxy} \\ T_{xxyy} & T_{xxxx} & T_{xzzz} & 0 & 0 & -T_{xxyx} & 0 & 0 & -T_{xxxy} \\ T_{zzxx} & T_{zzxx} & T_{zzzz} & 0 & 0 & T_{zzxy} & 0 & 0 & -T_{zzxy} \\ 0 & 0 & 0 & T_{yzyz} & T_{yzzx} & 0 & T_{yzyy} & T_{yzzz} & 0 \\ 0 & 0 & 0 & -T_{yzzx} & T_{yzzy} & 0 & -T_{yzzx} & T_{yzzy} & 0 \\ T_{xyxx} & -T_{xyxx} & 0 & 0 & 0 & T_{xyxy} & 0 & 0 & T_{xyxy} \end{bmatrix}$$

$$\begin{aligned}
T_{xxxx} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} - T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)} \\
T_{xxyy} &= -2T_{du}^{(1)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xxzz} &= T_{du}^{(1)} + 3T_{du}^{(3)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xxxz} &= -2M_{faz}^{(1)} - M_{faz}^{(2)} + 2M_{pz}^{(1)} + M_{pz}^{(3)} + T_{gaz}^{(1)} \\
T_{xxyx} &= -2M_{faz}^{(1)} + M_{faz}^{(2)} + 2M_{pz}^{(1)} - M_{pz}^{(3)} + T_{gaz}^{(1)} \\
T_{zzxx} &= T_{du}^{(1)} - 3T_{du}^{(3)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zzzz} &= 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)} \\
T_{zzxy} &= 2M_{faz}^{(2)} + M_{pz}^{(3)} + 2M_{pz}^{(4)} \\
T_{yzyz} &= T_{du}^{(2)} - 3T_{du}^{(5)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{yzzx} &= -4M_{faz}^{(1)} - M_{faz}^{(2)} - M_{pz}^{(1)} + M_{pz}^{(4)} \\
T_{yzzy} &= T_{du}^{(2)} + 3T_{du}^{(5)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{yzxz} &= -4M_{faz}^{(1)} + M_{faz}^{(2)} - M_{pz}^{(1)} - M_{pz}^{(4)} \\
T_{xyxx} &= 2M_{faz}^{(1)} - 2M_{pz}^{(1)} + T_{gaz}^{(1)} \\
T_{xyxy} &= -2T_{du}^{(2)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}
\end{aligned}$$

* Rank 4 tensor (a).

$$\begin{bmatrix} 0 & 0 & 0 & T_{yzyz} & T_{yzzx} & 0 & T_{yzyy} & T_{yzzz} & 0 \\ 0 & 0 & 0 & T_{yzzx} & -T_{yzyy} & 0 & T_{yzzz} & -T_{yzyz} & 0 \\ T_{xyxx} & T_{xyxx} & T_{xyzz} & 0 & 0 & T_{xyxy} & 0 & 0 & -T_{xyxy} \end{bmatrix}$$

$$\begin{aligned}
T_{yzyz} &= -2T_{du}^{(4)} - 3T_{du}^{(6)} + T_s^{(3)} \\
T_{yzzx} &= -M_{faz}^{(3)} - M_{pz}^{(2)} + M_{pz}^{(6)} \\
T_{yzzy} &= 2T_{du}^{(4)} - 3T_{du}^{(6)} - T_s^{(3)} \\
T_{yzxz} &= -M_{faz}^{(3)} + M_{pz}^{(2)} + M_{pz}^{(6)} \\
T_{xyxx} &= -M_{faz}^{(3)} + M_{pz}^{(5)} \\
T_{xyzz} &= 2M_{faz}^{(3)} + M_{pz}^{(5)} + 2M_{pz}^{(6)} \\
T_{xyxy} &= 4T_{du}^{(4)} + T_s^{(3)}
\end{aligned}$$

* Rank 4 tensor (t).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & 0 \\ -T_{xxxz} & T_{xxxx} & 0 \\ 0 & 0 & T_{zzzz} \\ 0 & 0 & T_{yyzz} \\ T_{zzxx} & 0 & 0 \\ T_{xxxy} & T_{xxyy} & 0 \\ 0 & T_{yzyy} & 0 \\ 0 & 0 & T_{zxxz} \\ T_{xyyy} + T_{yyzz} - T_{yzyy} - T_{zzxx} + T_{zzxx} & -T_{xxxz} & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$$\begin{aligned}
T_{xxxx} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} - T_{gu}^{(1)} + 2T_g^{(1)} + 3T_s^{(1)} \\
T_{xxyy} &= T_{gaz}^{(1)} \\
T_{zzzz} &= 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + 3T_s^{(1)} \\
T_{yyzz} &= T_{du}^{(1)} + 3T_{du}^{(3)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zzxx} &= T_{du}^{(1)} - 3T_{du}^{(3)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xxyy} &= -2T_{du}^{(1)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{yzyy} &= T_{du}^{(2)} + 3T_{du}^{(5)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zxxz} &= T_{du}^{(2)} - 3T_{du}^{(5)} - T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)}
\end{aligned}$$