Response Tensors up to 4th rank in O_h

— polar tensors —

$$C^{(0,Q)} = \left(C^{(0,Q)} \right)$$

$$C^{(0,Q)} = Q_0$$

$$S^{(2,Q)} = \begin{pmatrix} S_{xx}^{(2,Q)} & 0 & 0 \\ 0 & S_{xx}^{(2,Q)} & 0 \\ 0 & 0 & S_{xx}^{(2,Q)} \end{pmatrix}$$

$$S_{xx}^{(2,Q)} = Q_0$$

$$S^{(4,Q)} = \begin{pmatrix} S_{11}^{(4,Q)} & S_{12}^{(4,Q)} & S_{12}^{(4,Q)} & 0 & 0 & 0 \\ S_{12}^{(4,Q)} & S_{11}^{(4,Q)} & S_{12}^{(4,Q)} & 0 & 0 & 0 \\ S_{12}^{(4,Q)} & S_{12}^{(4,Q)} & S_{11}^{(4,Q)} & 0 & 0 & 0 \\ 0 & 0 & 0 & S_{44}^{(4,Q)} & 0 & 0 \\ 0 & 0 & 0 & 0 & S_{44}^{(4,Q)} & 0 \\ 0 & 0 & 0 & 0 & 0 & S_{44}^{(4,Q)} \end{pmatrix}$$

$$S_{11}^{(4,Q)} = Q_0[1] + 2Q_0[2] + 2Q_4$$
$$S_{12}^{(4,Q)} = Q_0[1] - Q_4$$
$$S_{44}^{(4,Q)} = Q_0[2] - Q_4$$

$$A^{(4,Q)} = \begin{pmatrix} A_{xx}^{(4,Q)} & 0 & 0 \\ 0 & A_{xx}^{(4,Q)} & 0 \\ 0 & 0 & A_{xx}^{(4,Q)} \end{pmatrix}$$

$$A_{xx}^{(4,Q)} = Q_0[3]$$

— axial tensors —

$$A^{(3,G)} = \begin{pmatrix} A_{4x}^{(3,G)} & 0 & 0 \\ 0 & A_{4x}^{(3,G)} & 0 \\ 0 & 0 & A_{4x}^{(3,G)} \end{pmatrix}$$

$$A_{4x}^{(3,G)} = Q_0$$