| Basic conve  | entions   |  |   |   |  |                            |        |                      |  |
|--|---|--|---|---|--|----------------------------|--------|----------------------|--|
| Minkowski r  | metric tensor   | Totally antisymmetric tensor   | Four-momentum   | Four-momentum norm  | Massive rest-frame   |                            |        |                      |  |
| $\eta_{\mu u}$   |   | $\epsilon \eta_{\mu \nu  ho \sigma}$   | $k^{\mu}$   | $k^2 == k_\mu k^\mu$  | $n^{\mu} == \frac{k^{\mu}}{k}$   |                            |        |                      |  |
| Fundamental field Symmetries Decomposition in SO(3) irreps |   |  |   |   |  |                            | Source |                      |  |
| $h_{lphaeta}$  | Symn<br>Stro  | netry[2, $h^{\bullet 1 \bullet 2}$ , $\{ \bullet 1 \rightarrow -a, \bullet 2 \rightarrow 0 \}$<br>ongGenSet[ $\{ 1, 2 \}$ , GenSet[ $\{ 1, 2 \}$ | $\{ -b \}, \frac{1}{3} \eta_{\alpha\beta} h_{0+}^{\#1} + h_{0+}^{\#1} $ | $h_{2+\alpha\beta}^{\#1} + h_{1-\beta}^{\#1} n_{\alpha} + h_{1-\alpha}^{\#1}$ | $n_{\beta} - \frac{1}{3} h_{0+}^{\#1} n_{\alpha} n_{\beta} + h_{0+}^{\#2} n_{\beta}$ | $_{\alpha}$ $^{n}_{\beta}$ |        | ${\cal T}_{lphaeta}$ |  |
| SO(3) irrep Symmetries                                     |   |  |   | Expansion in terms of   | the fundamental fiel   |                            |        |                      | Source                                 |
| $h_{0}^{#1}$   | Symmetry[0, $h_{0+}^{#1}$ , {}, StrongGenSet[{}, GenSet[]]]   |  |   | $h^{\alpha}_{\alpha} - h_{\alpha\beta} n^{\alpha} n^{\beta}$                  |  |                            |        |                      | $\mathcal{T}_{0}^{#1}$                 |
| $h_0^{\#2}$  | Symmetry[0, $h_0^{\#2}$ , {}, StrongGenSet[{}, GenSet[]]]   |  |   | $h_{\alpha\beta} n^{\alpha} n^{\beta}$  |  |                            |        |                      | $\mathcal{T}_{0}^{#2}$                 |
| $h_{2}^{\#1}{}_{\alpha\beta}$                              | Symmetry[2, $h_2^{\#1} \bullet 1 \bullet 2$ , $\{ \bullet 1 \rightarrow -a, \bullet 2 \rightarrow -b \}$ ,<br>StrongGenSet[ $\{ 1, 2 \}$ , GenSet[ $( 1, 2 )$ ]]] |  |   |   |  |                            |        |                      | ${\mathcal T}^{\sharp 1}_{2^+lphaeta}$ |
| $h_{1-\alpha}^{\#1}$                                       | Symmetry[1,   | $h_1^{\#1} \bullet 1$ , $\{ \bullet 1 \rightarrow -a \}$ , StrongGen   | Set[{}, GenSet[]]   | $  h_{\alpha\beta}  n^{\beta} - h_{\beta\chi} n_{\alpha} n^{\beta} n^{\chi}$  |  |                            |        |                      | $\mathcal{T}_{1^{-}\alpha}^{\sharp 1}$ |