Field kinematics

Momentum	Norm	Frame
k^μ	$k^2 == k_\mu\ k^\mu$	$n^\mu == \frac{k^\mu}{k}$

Fundamental fields

Fundamental field	Symmetries	Decomposition in SO(3) irreps	Source
$\omega_{\alpha\beta\chi}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$-\frac{1}{2}\ \eta_{\beta\chi}\ \omega_{1^-}^{\#1}{}_{\alpha} + \frac{1}{2}\ \eta_{\alpha\chi}\ \omega_{1^-}^{\#1}{}_{\beta} + \frac{4}{3}\ \omega_{2^-}^{\#1}{}_{\alpha\beta\chi} + \frac{1}{3}\ \eta_{\beta\chi}\ \omega_{0^+}^{\#1}\ n_\alpha + \omega_{1^+}^{\#1}{}_{\beta\chi}\ n_\alpha + \omega_{2^+}^{\#1}{}_{\beta\chi}\ n_\alpha - \frac{1}{3}\ \eta_{\alpha\chi}\ \omega_{0^+}^{\#1}\ n_\beta - \omega_{1^+}^{\#1}{}_{\alpha\chi}\ n_\beta - \omega_{2^+}^{\#1}{}_{\alpha\chi}\ n_\beta + \omega_{1^+}^{\#2}{}_{\alpha\beta}\ n_\chi - \frac{1}{2}\ \omega_{1^-}^{\#1}{}_{\beta}\ n_\alpha\ n_\chi - \omega_{1^-}^{\#2}{}_{\beta}\ n_\alpha\ n_\chi + \frac{1}{2}\ \omega_{1^-}^{\#1}{}_{\alpha}\ n_\beta\ n_\chi + \omega_{1^-}^{\#2}{}_{\alpha}\ n_\beta\ n_\chi - \frac{1}{6}\ \epsilon\eta_{\alpha\beta\chi\delta}\ \omega_{0^-}^{\#1}\ n^\delta$	$\sigma_{\alpha\beta\chi}$

SO(3) irreps

SO(3) irrep	Symmetries	Expansion in fundamental field	Source
$\omega_{0^+}^{\#1}$	StrongGenSet[{}, GenSet[]]	$\omega_\alpha{}^\beta{}_\beta\ n^\alpha$	$\sigma_{0^+}^{\#1}$
$\omega_{0^-}^{\#1}$	StrongGenSet[{}, GenSet[]]	$-\epsilon\eta_{\alpha\beta\chi\delta}\ \omega^{\beta\chi\delta}\ n^\alpha$	$\sigma_{0^-}^{\#1}$
$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$-\frac{1}{2}\ \omega_{\alpha\chi\beta}\ n^\chi + \frac{1}{2}\ \omega_{\beta\chi\alpha}\ n^\chi - \frac{1}{2}\ \omega_{\beta\chi\delta}\ n_\alpha\ n^\chi\ n^\delta + \frac{1}{2}\ \omega_{\alpha\chi\delta}\ n_\beta\ n^\chi\ n^\delta$	$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$
$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$\omega_{\alpha\beta\chi}\ n^\chi + \omega_{\beta\chi\delta}\ n_\alpha\ n^\chi\ n^\delta - \omega_{\alpha\chi\delta}\ n_\beta\ n^\chi\ n^\delta$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$
$\omega_{1^-}^{\#1}{}_{\alpha}$	StrongGenSet[{}, GenSet[]]	$-\omega_\alpha{}^\beta{}_\beta + \omega_\beta{}^\chi{}_\chi\ n_\alpha\ n^\beta + \omega_{\alpha\beta\chi}\ n^\beta\ n^\chi$	$\sigma_{1^-}^{\#1}{}_{\alpha}$
$\omega_{1^-}^{\#2}{}_{\alpha}$	StrongGenSet[{}, GenSet[]]	$\omega_{\alpha\beta\chi}\ n^\beta\ n^\chi$	$\sigma_{1^-}^{\#2}{}_{\alpha}$
$\omega_{2^+}^{\#1}{}_{\alpha\beta}$	StrongGenSet[{1, 2}, GenSet[(1,2)]]	$-\frac{1}{2}\ \omega_{\alpha\chi\beta}\ n^\chi - \frac{1}{2}\ \omega_{\beta\chi\alpha}\ n^\chi - \frac{1}{3}\ \eta_{\alpha\beta}\ \omega_\chi{}^\delta{}_\delta\ n^\chi + \frac{1}{3}\ \omega_\chi{}^\delta{}_\delta\ n_\alpha\ n_\beta\ n^\chi + \frac{1}{2}\ \omega_{\beta\chi\delta}\ n_\alpha\ n^\chi\ n^\delta + \frac{1}{2}\ \omega_{\alpha\chi\delta}\ n_\beta\ n^\chi\ n^\delta$	$\sigma_{2^+}^{\#1}{}_{\alpha\beta}$
$\omega_{2^-}^{\#1}{}_{\alpha\beta\chi}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$\frac{1}{2}\ \omega_{\alpha\beta\chi} + \frac{1}{4}\ \omega_{\alpha\chi\beta} - \frac{3}{8}\ \eta_{\beta\chi}\ \omega_\alpha{}^\delta{}_\delta - \frac{1}{4}\ \omega_{\beta\chi\alpha} + \frac{3}{8}\ \eta_{\alpha\chi}\ \omega_\beta{}^\delta{}_\delta - \frac{3}{8}\ \omega_\beta{}^\delta{}_\delta\ n_\alpha\ n_\chi + \frac{3}{8}\ \omega_\alpha{}^\delta{}_\delta\ n_\beta\ n_\chi + \frac{1}{4}\ \omega_{\beta\chi\delta}\ n_\alpha\ n^\delta + \frac{1}{2}\ \omega_{\beta\delta\chi}\ n_\alpha\ n^\delta + \frac{1}{4}\ \omega_{\chi\delta\beta}\ n_\alpha\ n^\delta + \frac{3}{8}\ \eta_{\beta\chi}\ \omega_\delta{}^\epsilon{}_\epsilon\ n_\alpha\ n^\delta - \frac{1}{4}\ \omega_{\alpha\chi\delta}\ n_\beta\ n^\delta - \frac{1}{2}\ \omega_{\alpha\delta\chi}\ n_\beta\ n^\delta - \frac{1}{4}\ \omega_{\chi\delta\alpha}\ n_\beta\ n^\delta - \frac{3}{8}\ \eta_{\alpha\chi}\ \omega_\delta{}^\epsilon{}_\epsilon\ n_\beta\ n^\delta - \frac{1}{2}\ \omega_{\alpha\beta\delta}\ n_\chi\ n^\delta - \frac{1}{4}\ \omega_{\alpha\delta\beta}\ n_\chi\ n^\delta + \frac{1}{4}\ \omega_{\beta\delta\alpha}\ n_\chi\ n^\delta + \frac{3}{8}\ \eta_{\beta\chi}\ \omega_{\alpha\delta\epsilon}\ n^\delta\ n^\epsilon - \frac{3}{8}\ \eta_{\alpha\chi}\ \omega_{\beta\delta\epsilon}\ n^\delta\ n^\epsilon - \frac{3}{8}\ \omega_{\beta\delta\epsilon}\ n_\alpha\ n_\chi\ n^\delta\ n^\epsilon + \frac{3}{8}\ \omega_{\alpha\delta\epsilon}\ n_\beta\ n_\chi\ n^\delta\ n^\epsilon$	$\sigma_{2^-}^{\#1}{}_{\alpha\beta\chi}$