Field kinematics

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

Fundamental fields

Fields	Symmetries	SO(3)	Sources
$\mathcal{A}_{\alpha\beta\chi}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$\frac{1}{2}\,\eta_{\beta\chi}\,\overset{\#1}{1^-}\!\mathcal{A}_\alpha + \frac{1}{2}\,\eta_{\alpha\chi}\,\overset{\#1}{1^-}\!\mathcal{A}_\beta + \frac{4}{3}\,\overset{\#1}{2^-}\!\mathcal{A}_{\alpha\beta\chi} + \frac{1}{3}\,\eta_{\beta\chi}\,\overset{\#1}{0^+}\!\mathcal{A}\,n_\alpha + \overset{\#1}{1^+}\!\mathcal{A}_{\beta\chi}\,n_\alpha + \overset{\#1}{2^+}\!\mathcal{A}_{\beta\chi}\,n_\alpha - \frac{1}{3}\,\eta_{\alpha\chi}\,\overset{\#1}{0^+}\!\mathcal{A}\,n_\beta -$ $\overset{\#1}{1^+}\!\mathcal{A}_{\alpha\chi}\,n_\beta - \overset{\#1}{2^+}\!\mathcal{A}_{\alpha\chi}\,n_\beta + \overset{\#2}{1^+}\!\mathcal{A}_{\alpha\beta}\,n_\chi - \frac{1}{2}\,\overset{\#1}{1^-}\!\mathcal{A}_\beta\,n_\alpha\,n_\chi - \overset{\#2}{1^-}\!\mathcal{A}_\beta\,n_\alpha\,n_\chi + \frac{1}{2}\,\overset{\#1}{1^-}\!\mathcal{A}_\alpha\,n_\beta\,n_\chi + \overset{\#2}{1^-}\!\mathcal{A}_\alpha\,n_\beta\,n_\chi - \frac{1}{6}\,\epsilon\eta_{\alpha\beta\chi\delta}\,\overset{\#1}{0^-}\!\mathcal{A}\,n^\delta$	$\sigma_{\alpha\beta\chi}$

SO(3) irreps

SO(3)	Symmetries	Expansion	Sources
$\overset{\#1}{0^+}\!\mathcal{A}$	StrongGenSet[{},GenSet[]]	$\mathcal{A}_{\alpha}{}^{\beta}{}_{\beta}\,n^\alpha$	$\overset{\#1}{0^+}\!\sigma$
$\overset{\#1}{0^-}\!\mathcal{A}$	StrongGenSet[{}, GenSet[]] -	$\epsilon\eta_{\alpha\beta\chi\delta}\,\mathcal{A}^{\beta\chi\delta}\,n^\alpha$	$\overset{\#1}{0^-}\!\sigma$
$\overset{\#1}{1^+}\!\mathcal{A}_{\alpha\beta}$	StrongGenSet[{1,2 },GenSet[-(1,2)]]	$-\frac{1}{2}\,\mathcal{A}_{\alpha\chi\beta}\,n^\chi + \frac{1}{2}\,\mathcal{A}_{\beta\chi\alpha}\,n^\chi - \frac{1}{2}\,\mathcal{A}_{\beta\chi\delta}\,n_\alpha\,n^\chi\,n^\delta + \frac{1}{2}\,\mathcal{A}_{\alpha\chi\delta}\,n_\beta\,n^\chi\,n^\delta$	$\overset{\#1}{1^+}\!\sigma_{\alpha\beta}$
$\overset{\#2}{1^+}\!\mathcal{A}_{\alpha\beta}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$\mathcal{A}_{\alpha\beta\chi}\,n^\chi + \mathcal{A}_{\beta\chi\delta}\,n_\alpha\,n^\chi\,n^\delta - \mathcal{A}_{\alpha\chi\delta}\,n_\beta\,n^\chi\,n^\delta$	$\overset{\#2}{1^+}\!\sigma_{\alpha\beta}$
$\overset{\#1}{1^-}\!\mathcal{A}_{\alpha}$	StrongGenSet[{}, GenSet[]] -	$\mathcal{A}_{\alpha}{}^{\beta}{}_{\beta} + \mathcal{A}_{\beta}{}^{\chi}{}_{\chi}\,n_\alpha\,n^\beta + \mathcal{A}_{\alpha\beta\chi}\,n^\beta\,n^\chi$	$\overset{\#1}{1^-}\!\sigma_\alpha$
$\overset{\#2}{1^-}\!\mathcal{A}_{\alpha}$	StrongGenSet[{},GenSet[]]	$\mathcal{A}_{\alpha\beta\chi}\,n^\beta\,n^\chi$	$\overset{\#2}{1^-}\!\sigma_\alpha$
$\overset{\#1}{2^+}\!\mathcal{A}_{\alpha\beta}$	StrongGenSet[{1, 2}, GenSet[(1,2)]]	$\frac{1}{2}\,\mathcal{A}_{\alpha\chi\beta}\,n^\chi - \frac{1}{2}\,\mathcal{A}_{\beta\chi\alpha}\,n^\chi - \frac{1}{3}\,\eta_{\alpha\beta}\,\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\,n^\chi + \frac{1}{3}\,\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\,n_\alpha\,n_\beta\,n^\chi + \frac{1}{2}\,\mathcal{A}_{\beta\chi\delta}\,n_\alpha\,n^\chi\,n^\delta + \frac{1}{2}\,\mathcal{A}_{\alpha\chi\delta}\,n_\beta\,n^\chi\,n^\delta$	$\overset{\#1}{2^+}\!\sigma_{\alpha\beta}$
$\overset{\#1}{2^-}\!\mathcal{A}_{\alpha\beta\chi}$	StrongGenSet[{1, 2}, GenSet[-(1,2)]]	$\frac{1}{2}\,\mathcal{A}_{\alpha\beta\chi} + \frac{1}{4}\,\mathcal{A}_{\alpha\chi\beta} - \frac{3}{8}\,\eta_{\beta\chi}\,\mathcal{A}_{\alpha}{}^{\delta}{}_{\delta} - \frac{1}{4}\,\mathcal{A}_{\beta\chi\alpha} + \frac{3}{8}\,\eta_{\alpha\chi}\,\mathcal{A}_{\beta}{}^{\delta}{}_{\delta} - \frac{3}{8}\,\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\,n_\alpha\,n_\chi + \frac{3}{8}\,\mathcal{A}_{\alpha}{}^{\delta}{}_{\delta}\,n_\beta\,n_\chi + \frac{1}{4}\,\mathcal{A}_{\beta\chi\delta}\,n_\alpha\,n^\delta +$ $\frac{1}{2}\,\mathcal{A}_{\beta\delta\chi}\,n_\alpha\,n^\delta + \frac{1}{4}\,\mathcal{A}_{\chi\delta\beta}\,n_\alpha\,n^\delta + \frac{3}{8}\,\eta_{\beta\chi}\,\mathcal{A}_{\delta}{}^{\epsilon}{}_{\epsilon}\,n_\alpha\,n^\delta - \frac{1}{4}\,\mathcal{A}_{\alpha\chi\delta}\,n_\beta\,n^\delta - \frac{1}{2}\,\mathcal{A}_{\alpha\delta\chi}\,n_\beta\,n^\delta - \frac{1}{4}\,\mathcal{A}_{\chi\delta\alpha}\,n_\beta\,n^\delta - \frac{3}{8}\,\eta_{\alpha\chi}\,\mathcal{A}_{\delta}{}^{\epsilon}{}_{\epsilon}\,n_\beta\,n^\delta -$ $\frac{1}{2}\,\mathcal{A}_{\alpha\beta\delta}\,n_\chi\,n^\delta - \frac{1}{4}\,\mathcal{A}_{\alpha\delta\beta}\,n_\chi\,n^\delta + \frac{1}{4}\,\mathcal{A}_{\beta\delta\alpha}\,n_\chi\,n^\delta + \frac{3}{8}\,\eta_{\beta\chi}\,\mathcal{A}_{\alpha\delta\epsilon}\,n^\delta\,n^\epsilon - \frac{3}{8}\,\eta_{\alpha\chi}\,\mathcal{A}_{\beta\delta\epsilon}\,n^\delta\,n^\epsilon - \frac{3}{8}\,\mathcal{A}_{\beta\delta\epsilon}\,n_\alpha\,n_\chi\,n^\delta\,n^\epsilon + \frac{3}{8}\,\mathcal{A}_{\alpha\delta\epsilon}\,n_\beta\,n_\chi\,n^\delta\,n^\epsilon$	$\overset{\#1}{2^-}\!\sigma_{\alpha\beta\chi}$