Source constraints

SO(3) irreps	#
$\mathcal{T}_{0^+}^{\#2} == 0$	1
$\Delta_{0^+}^{\#3} + 2\,\Delta_{0^+}^{\#4} + 3\,\Delta_{0^+}^{\#2} == 0$	1
$\mathcal{T}_1^{\#1\,\alpha} == 0$	3
$2\,\Delta_1^{\#6\,\alpha} + \Delta_1^{\#4\,\alpha} + 2\,\Delta_1^{\#5\,\alpha} + \Delta_1^{\#3\,\alpha} == 0$	3
Total #:	8

Lagrangian density

$$-\tfrac{1}{2}a_0\,\Gamma^{\alpha\beta\chi}\,\Gamma_{\beta\chi\alpha} + \tfrac{1}{2}a_0\,\Gamma^\alpha{}_\alpha{}^\beta\,\Gamma^\chi{}_{\beta\chi} + h^{\alpha\beta}\,\mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi}\,\Delta_{\alpha\beta\chi} -$$
$$\tfrac{1}{2}a_0\,\Gamma^{\alpha\beta\chi}\,\partial_\beta h^\chi{}_\alpha - \tfrac{1}{4}a_0\,\Gamma^\alpha{}_\alpha{}^\beta\,\partial_\beta h^\chi{}_\chi - \tfrac{1}{4}a_0\,h^{\alpha\beta}\,\partial_\beta\Gamma^\chi{}_{\alpha\chi} + \tfrac{1}{2}a_0\,h^{\alpha\beta}\,\partial_\chi\Gamma^\chi{}_{\alpha\beta} +$$
$$\tfrac{1}{4}a_0\,h^\chi{}_\chi\,\partial_\beta\Gamma^{\alpha\beta}{}_\alpha - \tfrac{1}{4}a_0\,h^{\alpha\beta}\,\partial_\chi h^\chi{}_\beta - \tfrac{1}{8}a_0\,\partial_\beta h^\chi{}_\chi\,\partial^\beta h^\alpha{}_\alpha +$$
$$\tfrac{1}{4}a_0\,h^\alpha{}_\alpha\,\partial_\chi\partial^\chi h^\beta{}_\beta - \tfrac{1}{4}a_0\,h^\alpha{}_\alpha\,\partial_\chi\partial^\gamma h^\beta{}_\gamma + \tfrac{1}{2}a_0\,h^\alpha{}_\beta\,\partial_\chi\partial^\chi h^\beta{}_\alpha -$$
$$\tfrac{1}{4}a_0\,\partial_\beta h_{\alpha\chi}\,\partial^\chi h^{\alpha\beta} + \tfrac{3}{8}a_0\,\partial_\chi h^\alpha{}_\beta\,\partial^\chi h^\beta{}_\alpha + \tfrac{1}{2}a_0\,h_{\beta\chi}\,\partial^\gamma\Gamma^{-\alpha}{}_\beta$$

Spin-3 sectors

$\Delta_3^{\#1}$ (column $\Delta_3^{\#1}{}^\dagger{}_{\alpha\beta\chi}$):

	$\Delta_3^{\#1}{}^\dagger{}_{\alpha\beta\chi}$
$\Delta_3^{\#1}{}_{\alpha\beta\chi}$	$-\dfrac{2}{a_0}$

$\Gamma_3^{\#1}$ (column $\Gamma_3^{\#1}{}^\dagger{}_{\alpha\beta\chi}$):

	$\Gamma_3^{\#1}{}^\dagger{}_{\alpha\beta\chi}$
$\Gamma_3^{\#1}{}_{\alpha\beta\chi}$	$\dfrac{a_0}{2}$

Spin-0 sector (Δ, $\mathcal{T}$)

	$\Delta_{0^+}^{\#1}{}^\dagger$	$\Delta_{0^+}^{\#3}{}^\dagger$	$\Delta_{0^+}^{\#4}{}^\dagger$	$\mathcal{T}_{0^+}^{\#1}{}^\dagger$	$\mathcal{T}_{0^+}^{\#2}{}^\dagger$	$\Delta_{0^-}^{\#1}{}^\dagger$
$\mathcal{T}_{0^-}^{\#1}{}^\dagger$	0	0	0	0	0	$-\dfrac{2}{a_0}$
$\mathcal{T}_{0^+}^{\#2}{}^\dagger$	0	0	0	0	0	0
$\mathcal{T}_{0^+}^{\#1}{}^\dagger$	0	0	0	$\dfrac{4}{a_0 k^2}$	0	0
$\Delta_{0^+}^{\#4}{}^\dagger$	0	$-\dfrac{1}{2\sqrt{2}\,a_0}$	$\dfrac{1}{2 a_0}$	0	0	0
$\Delta_{0^+}^{\#3}{}^\dagger$	0	$\dfrac{5}{4 a_0}$	$-\dfrac{3}{4 a_0}$	$\dfrac{1}{2\sqrt{2}\,a_0}$	0	0
$\Delta_{0^+}^{\#2}{}^\dagger$	0	$-\dfrac{3}{4 a_0}$	$\dfrac{5}{4 a_0}$	$\dfrac{1}{2\sqrt{2}\,a_0}$	0	0
$\Delta_{0^+}^{\#1}{}^\dagger$	$-\dfrac{2}{a_0}$	0	0	0	0	0

Spin-2 sector (Δ, $\mathcal{T}$)

	$\Delta_{2^+}^{\#1}{}^\dagger{}_{\alpha\beta\chi}$	$\Delta_{2^+}^{\#2}{}^\dagger{}_{\alpha\beta\chi}$	$\Delta_{2^+}^{\#3}{}^\dagger{}_{\alpha\beta}$	$\mathcal{T}_{2^+}^{\#1}{}^\dagger{}_{\alpha\beta}$	$\Delta_{2^-}^{\#1}{}^\dagger{}_{\alpha\beta\chi}$	$\Delta_{2^-}^{\#2}{}^\dagger{}_{\alpha\beta}$
$\Delta_{2^+}^{\#2}{}_{\alpha\beta\chi}$	0	0	0	0	0	$\dfrac{4}{a_0}$
$\Delta_{2^+}^{\#1}{}_{\alpha\beta\chi}$	0	0	0	0	$\dfrac{4}{a_0}$	0
$\mathcal{T}_{2^+}^{\#1}{}_{\alpha\beta}$	0	0	0	$-\dfrac{8}{a_0 k^2}$	0	0
$\Delta_{2^+}^{\#3}{}_{\alpha\beta}$	0	0	$\dfrac{4}{a_0}$	0	0	0
$\Delta_{2^+}^{\#2}{}_{\alpha\beta}$	0	$-\dfrac{2}{a_0}$	0	0	0	0
$\Delta_{2^+}^{\#1}{}_{\alpha\beta\chi}$	$\dfrac{4}{a_0}$	0	0	0	0	0

Spin-2 sector (Γ, h)

	$\Gamma_{2^+}^{\#1}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{2^+}^{\#2}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{2^+}^{\#3}{}^\dagger{}_{\alpha\beta}$	$h_{2^+}^{\#1}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{2^-}^{\#1}{}^\dagger{}_{\alpha\beta\chi}$	$\Gamma_{2^-}^{\#2}{}^\dagger{}_{\alpha\beta}$
$\Gamma_{2^-}^{\#2}{}_{\alpha\beta}$	0	0	0	0	0	$\dfrac{a_0}{4}$
$\Gamma_{2^-}^{\#1}{}_{\alpha\beta\chi}$	0	0	0	0	$\dfrac{a_0}{4}$	0
$h_{2^+}^{\#1}{}_{\alpha\beta}$	0	0	0	$-\dfrac{a_0 k^2}{8}$	0	0
$\Gamma_{2^+}^{\#3}{}_{\alpha\beta}$	0	0	$\dfrac{a_0}{4}$	0	0	0
$\Gamma_{2^+}^{\#2}{}_{\alpha\beta}$	0	$-\dfrac{a_0}{2}$	0	0	0	0
$\Gamma_{2^+}^{\#1}{}_{\alpha\beta}$	$\dfrac{a_0}{4}$	0	0	0	0	0

Spin-0 sector (Γ, h)

	$\Gamma_{0^+}^{\#1}$	$\Gamma_{0^+}^{\#2}$	$\Gamma_{0^+}^{\#3}$	$\Gamma_{0^+}^{\#4}$	$h_{0^+}^{\#1}$	$h_{0^+}^{\#2}$	$\Gamma_{0^-}^{\#1}$
$\Gamma_{0^+}^{\#1}{}^\dagger$	$-\dfrac{a_0}{2}$	0	$-\dfrac{a_0}{2\sqrt{2}}$	0	0	0	0
$\Gamma_{0^+}^{\#2}{}^\dagger$	0	$\dfrac{a_0}{2}$	0	$-\dfrac{a_0}{2\sqrt{2}}$	0	0	0
$\Gamma_{0^+}^{\#3}{}^\dagger$	0	$\dfrac{a_0}{2}$	0	$-\dfrac{a_0}{2\sqrt{2}}$	0	0	0
$\Gamma_{0^+}^{\#4}{}^\dagger$	0	$-\dfrac{a_0}{2\sqrt{2}}$	$-\dfrac{a_0}{2\sqrt{2}}$	$\dfrac{a_0}{2}$	0	0	0
$h_{0^+}^{\#1}{}^\dagger$	0	0	0	0	0	$\dfrac{a_0 k^2}{4}$	0
$h_{0^+}^{\#2}{}^\dagger$	0	0	0	0	0	0	0
$\Gamma_{0^-}^{\#1}{}^\dagger$	0	0	0	0	0	0	$-\dfrac{a_0}{2}$

Spin-1 sector (Δ, $\mathcal{T}$)

	$\Delta_{1^+}^{\#1}{}^\dagger{}_{\alpha\beta}$	$\Delta_{1^+}^{\#2}{}^\dagger{}_{\alpha\beta}$	$\Delta_{1^+}^{\#3}{}^\dagger{}_{\alpha\beta}$	$\Delta_{1^-}^{\#1}{}^\dagger{}_\alpha$	$\Delta_{1^-}^{\#2}{}^\dagger{}_\alpha$	$\Delta_{1^-}^{\#3}{}^\dagger{}_\alpha$	$\Delta_{1^-}^{\#4}{}^\dagger{}_\alpha$	$\Delta_{1^-}^{\#5}{}^\dagger{}_\alpha$	$\Delta_{1^-}^{\#6}{}^\dagger{}_\alpha$	$\mathcal{T}_{1^-}^{\#1}{}^\dagger{}_\alpha$
$\mathcal{T}_1^{\#1}{}_\alpha$	0	0	0	0	0	0	0	0	0	0
$\Delta_1^{\#6}{}_\alpha$	0	0	0	0	0	$-\dfrac{1}{6 a_0}$	$\dfrac{\sqrt5}{6 a_0}$	$\dfrac{7}{3\sqrt2\,a_0}$	$\dfrac{5}{3 a_0}$	0
$\Delta_1^{\#5}{}_\alpha$	0	0	0	0	$-\dfrac{1}{\sqrt2\,a_0}$	$-\dfrac{1}{6}\sqrt{\tfrac52}\,a_0$	$\dfrac{17}{6 a_0}$	$\dfrac{7}{3\sqrt2\,a_0}$	0	
$\Delta_1^{\#4}{}_\alpha$	0	0	0	$\dfrac{5\sqrt5}{12 a_0}$	$\dfrac{1}{12 a_0}$	$-\dfrac{1}{6}\sqrt{\tfrac52}\,a_0$	$-\dfrac{1}{6 a_0}$			
$\Delta_1^{\#3}{}_\alpha$	0	0	0	$-\dfrac{19}{12 a_0}$	$\dfrac{5\sqrt5}{12 a_0}$	$\dfrac{1}{\sqrt2\,a_0}$	$-\dfrac{1}{6 a_0}$			
$\Delta_1^{\#2}{}_{\alpha\beta}$	0	0	$\dfrac{2\sqrt2}{a_0}$	$\dfrac{2}{a_0}$	0	0	0	0	0	0
$\Delta_1^{\#1}{}_{\alpha\beta}$	0	0	0	$\dfrac{2\sqrt2}{a_0}$	$\dfrac{a_0}{2\sqrt2}$	0	0	0	0	0
$\Delta_1^{\#3}{}_{\alpha\beta}$	0	$\dfrac{4}{a_0}$	0	0	0	0	0	0	0	0
$\Delta_1^{\#2}{}_{\alpha\beta}$	$-\dfrac{2\sqrt2}{a_0}$	$\dfrac{2}{a_0}$	0	0	0	0	0	0	0	0
$\Delta_1^{\#1}{}_{\alpha\beta}$	$-\dfrac{2\sqrt2}{a_0}$	$-\dfrac{2\sqrt2}{a_0}$	0	0	0	0	0	0	0	0

Spin-1 sector (Γ, h)

	$\Gamma_{1^+}^{\#1}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{1^+}^{\#2}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{1^+}^{\#3}{}^\dagger{}_{\alpha\beta}$	$\Gamma_{1^-}^{\#1}{}^\dagger{}_\alpha$	$\Gamma_{1^-}^{\#2}{}^\dagger{}_\alpha$	$\Gamma_{1^-}^{\#3}{}^\dagger{}_\alpha$	$\Gamma_{1^-}^{\#4}{}^\dagger{}_\alpha$	$\Gamma_{1^-}^{\#5}{}^\dagger{}_\alpha$	$\Gamma_{1^-}^{\#6}{}^\dagger{}_\alpha$	$h_{1^-}^{\#1}{}^\dagger{}_\alpha$
$h_1^{\#1}{}_\alpha$	0	0	0	0	0	0	0	0	0	0
$\Gamma_1^{\#6}{}_\alpha$	0	0	0	0	0	$-\dfrac{a_0}{6}$	$\dfrac{\sqrt5\,a_0}{6}$	$\dfrac{5\sqrt2\,a_0}{6}$	$\dfrac{5 a_0}{12}$	0
$\Gamma_1^{\#5}{}_\alpha$	0	0	0	0	$\dfrac{a_0}{6\sqrt2}$	$-\dfrac{1}{6}\sqrt{\tfrac52}\,a_0$	$\dfrac{a_0}{3}$	$\dfrac{a_0}{6\sqrt2}$	0	
$\Gamma_1^{\#4}{}_\alpha$	0	0	0	$\dfrac{\sqrt5\,a_0}{6}$	$\dfrac{a_0}{3}$	$-\dfrac{1}{6}\sqrt{\tfrac52}\,a_0$	$\dfrac{\sqrt5\,a_0}{6}$			
$\Gamma_1^{\#3}{}_\alpha$	0	0	0	$-\dfrac{a_0}{3}$	$\dfrac{\sqrt5\,a_0}{6}$	$-\dfrac{a_0}{6\sqrt2}$	$-\dfrac{a_0}{6}$			
$\Gamma_1^{\#2}{}_{\alpha\beta}$	0	0	$\dfrac{2\sqrt2}{a_0}$	$-\dfrac{a_0}{4}$	$\dfrac{a_0}{2\sqrt2}$	0	0	0	0	0
$\Gamma_1^{\#1}{}_{\alpha\beta}$	0	0	0	$-\dfrac{a_0}{4}$	$\dfrac{a_0}{2\sqrt2}$	0	0	0	0	0
$\Gamma_1^{\#3}{}_{\alpha\beta}$	0	0	$\dfrac{a_0}{4}$	0	0	0	0	0	0	0
$\Gamma_1^{\#2}{}_{\alpha\beta}$	$-\dfrac{a_0}{4}$	$\dfrac{a_0}{2\sqrt2}$	0	0	0	0	0	0	0	0
$\Gamma_1^{\#1}{}_{\alpha\beta}$	$-\dfrac{a_0}{4}$	$\dfrac{a_0}{2\sqrt2}$	0	0	0	0	0	0	0	0

Quadratic pole

Quadratic pole	
Pole residue:	$-\dfrac{1}{a_0} > 0$
Polarisations:	2

(No massive particles)

$a_0 < 0$