Particle spectrograph

Wave operator and propagator

	$\Delta^{\#1}_{1^+\,\alpha\beta}$	$\Delta^{\#2}_{1^+\,\alpha\beta}$	$\Delta^{\#3}_{1^+\,\alpha\beta}$	$\Delta^{\#1}_{1^-\,\alpha}$	$\Delta^{\#2}_{1^-\,\alpha}$	$\Delta^{\#3}_{1^-\,\alpha}$	$\Delta^{\#4}_{1^-\,\alpha}$	$\Delta^{\#5}_{1^-\,\alpha}$	$\Delta^{\#6}_{1^-\,\alpha}$	$\mathcal{T}^{\#1}_{1^-\,\alpha}$
$\Delta^{\#1}_{1^+}\dagger^{\alpha\beta}$	0	$-\frac{2\sqrt{2}}{a_0}$	0	0	0	0	0	0	0	0
$\Delta^{\#2}_{1^+}\dagger^{\alpha\beta}$	$-\frac{2\sqrt{2}}{a_0}$	$\frac{2(a_0^2-14a_0a_1k^2-35a_1^2k^4)}{a_0^2(a_0-29a_1k^2)}$	$\frac{40\sqrt{2}a_1k^2}{a_0^2-29a_0a_1k^2}$	0	0	0	0	0	0	0
$\Delta^{\#3}_{1^+}\dagger^{\alpha\beta}$	0	$\frac{40\sqrt{2}a_1k^2}{a_0^2-29a_0a_1k^2}$	$\frac{4}{a_0-29a_1k^2}$	0	0	0	0	0	0	0
$\Delta^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	0	$\frac{\sqrt{2}(4+k^2)}{a_0(2+k^2)}$	$-\frac{2k^2}{\sqrt{3}a_0(2+k^2)}$	0	$\frac{\sqrt{\frac{2}{3}}k^2}{a_0(2+k^2)}$	0	$-\frac{2i\sqrt{2}k}{a_0(2+k^2)}$
$\Delta^{\#2}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{\sqrt{2}(4+k^2)}{a_0(2+k^2)}$	$\frac{a_0^2(4+k^2)^2-30a_0a_1k^2(4+k^2)(4+3k^2)+a_1^2k^4(6416+7928k^2+1901k^4)}{2a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{k^2(a_0^2(-2+k^2)+a_0a_1(560+302k^2+71k^4)-2a_1^2k^2(9440+1901k^2(4+k^2)))}{2\sqrt{6}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$-\frac{\sqrt{\frac{5}{6}}k^2(a_0+a_1(40-31k^2))}{2a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{k^2(2a_0^2(5+2k^2)-a_0a_1(880+778k^2+199k^4)+a_1^2k^2(9440+1901k^2(4+k^2)))}{2\sqrt{3}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{k^2(-a_0+a_1(200+43k^2))}{\sqrt{6}a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{ik(-30a_0a_1k^4+a_0^2(4+k^2)+27a_1^2k^4(-28+3k^2))}{a_0^2(2+k^2)^2(a_0-33a_1k^2)}$
$\Delta^{\#3}_{1^-}\dagger^{\alpha}$	0	0	0	$-\frac{2k^2}{\sqrt{3}(2a_0+a_0k^2)}$	$\frac{k^2(a_0^2(-2+k^2)+a_0a_1(560+302k^2+71k^4)-2a_1^2k^2(9440+1901k^2(4+k^2)))}{2\sqrt{6}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{-a_0^2(76+52k^2+3k^4)+4a_0a_1k^2(472+214k^2+19k^4)+4a_1^2k^4(5120+7280k^2+1901k^4)}{12a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{\sqrt{5}(10a_0+(3a_0-328a_1)k^2-62a_1k^4)}{12a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{2a_0^2(-2+k^2)+a_0a_1k^2(472+934k^2+289k^4)-2a_1^2k^4(5120+7280k^2+1901k^4)}{6\sqrt{2}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$-\frac{2a_0+(3a_0-56a_1)k^2+86a_1k^4}{6a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{ik(54a_1^2k^4(40+3k^2)+a_0^2(6+5k^2)-3a_0a_1k^2(86+23k^2))}{\sqrt{6}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$
$\Delta^{\#4}_{1^-}\dagger^{\alpha}$	0	0	0	0	$-\frac{\sqrt{\frac{5}{6}}k^2(a_0+a_1(40-31k^2))}{2a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{\sqrt{5}(10a_0+k^2(3a_0-2a_1(164+31k^2)))}{12a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{1}{12a_0-396a_1k^2}$	$\frac{\sqrt{\frac{5}{2}}(-2a_0+a_1k^2(164+31k^2))}{6a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{\sqrt{5}}{6(a_0-33a_1k^2)}$	$-\frac{i\sqrt{\frac{5}{6}}k(a_0-51a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$
$\Delta^{\#5}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{\sqrt{\frac{2}{3}}k^2}{2a_0+a_0k^2}$	$\frac{k^2(2a_0^2(5+2k^2)-a_0a_1(880+778k^2+199k^4)+a_1^2k^2(9440+1901k^2(4+k^2)))}{2\sqrt{3}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{2a_0^2(-2+k^2)+a_0a_1k^2(472+934k^2+289k^4)-2a_1^2k^4(5120+7280k^2+1901k^4)}{6\sqrt{2}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{\sqrt{\frac{5}{2}}(-2a_0+a_1k^2(164+31k^2))}{6a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{4a_0^2(17+14k^2+3k^4)-4a_0a_1k^2(236+287k^2+77k^4)+a_1^2k^4(5120+7280k^2+1901k^4)}{6a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$-\frac{a_1k^2(28-43k^2)+2a_0(7+3k^2)}{3\sqrt{2}a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{ik(2a_0^2(3+k^2)-27a_1^2k^4(40+3k^2)+3a_0a_1k^2(34+7k^2))}{\sqrt{3}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$
$\Delta^{\#6}_{1^-}\dagger^{\alpha}$	0	0	0	0	$\frac{k^2(-a_0+a_1(200+43k^2))}{\sqrt{6}a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{2a_0+(3a_0-56a_1)k^2+86a_1k^4}{6a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{\sqrt{5}}{6(a_0-33a_1k^2)}$	$-\frac{a_1k^2(28-43k^2)+2a_0(7+3k^2)}{3\sqrt{2}a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{5}{3(a_0-33a_1k^2)}$	$-\frac{i\sqrt{\frac{2}{3}}k(a_0+57a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$
$\mathcal{T}^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{2i\sqrt{2}k}{2a_0+a_0k^2}$	$\frac{i(-30a_0a_1k^5+a_0^2k(4+k^2)+27a_1^2k^5(-28+3k^2))}{a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$-\frac{i(54a_1^2k^5(40+3k^2)+a_0^2k(6+5k^2)-3a_0a_1k^3(86+23k^2))}{\sqrt{6}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{i\sqrt{\frac{5}{6}}k(a_0-51a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{i(2a_0^2k(3+k^2)-27a_1^2k^5(40+3k^2)+3a_0a_1k^3(34+7k^2))}{\sqrt{3}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{i\sqrt{\frac{2}{3}}k(a_0+57a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{2k^2(a_0^2+30a_0a_1k^2-459a_1^2k^4)}{a_0^2(2+k^2)^2(a_0-33a_1k^2)}$

	$\Gamma^{\#1}_{1^+\,\alpha\beta}$	$\Gamma^{\#2}_{1^+\,\alpha\beta}$	$\Gamma^{\#3}_{1^+\,\alpha\beta}$	$\Gamma^{\#1}_{1^-\,\alpha}$	$\Gamma^{\#2}_{1^-\,\alpha}$	$\Gamma^{\#3}_{1^-\,\alpha}$	$\Gamma^{\#4}_{1^-\,\alpha}$	$\Gamma^{\#5}_{1^-\,\alpha}$	$\Gamma^{\#6}_{1^-\,\alpha}$	$h^{\#1}_{1^-\,\alpha}$
$\Gamma^{\#1}_{1^+}\dagger^{\alpha\beta}$	$\frac{1}{4}(-a_0-15a_1k^2)$	$-\frac{a_0}{2\sqrt{2}}$	$5a_1k^2$	0	0	0	0	0	0	0
$\Gamma^{\#2}_{1^+}\dagger^{\alpha\beta}$	$-\frac{a_0}{2\sqrt{2}}$	0	0	0	0	0	0	0	0	0
$\Gamma^{\#3}_{1^+}\dagger^{\alpha\beta}$	$5a_1k^2$	0	$\frac{1}{4}(a_0-29a_1k^2)$	0	0	0	0	0	0	0
$\Gamma^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{1}{4}(-a_0-3a_1k^2)$	$\frac{a_0}{2\sqrt{2}}$	$\frac{5}{2}\sqrt{3}a_1k^2$	$-\frac{5}{2}\sqrt{\frac{5}{3}}a_1k^2$	$5\sqrt{\frac{3}{2}}a_1k^2$	$-\frac{5a_1k^2}{\sqrt{3}}$	$-\frac{ia_0k}{4\sqrt{2}}$
$\Gamma^{\#2}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{a_0}{2\sqrt{2}}$	0	0	0	0	0	0
$\Gamma^{\#3}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{5}{2}\sqrt{3}a_1k^2$	0	$-\frac{a_0}{3}$	$\frac{1}{6}\sqrt{5}(a_0-8a_1k^2)$	$-\frac{a_0}{6\sqrt{2}}$	$\frac{1}{6}(-a_0+20a_1k^2)$	$\frac{ia_0k}{4\sqrt{6}}$
$\Gamma^{\#4}_{1^-}\dagger^{\alpha}$	0	0	0	$-\frac{5}{2}\sqrt{\frac{5}{3}}a_1k^2$	0	$\frac{1}{6}\sqrt{5}(a_0-8a_1k^2)$	$\frac{1}{3}(a_0+7a_1k^2)$	$-\frac{1}{6}\sqrt{\frac{5}{2}}(a_0+16a_1k^2)$	$-\frac{1}{6}\sqrt{5}(a_0-5a_1k^2)$	$-\frac{1}{4}i\sqrt{\frac{5}{6}}a_0k$
$\Gamma^{\#5}_{1^-}\dagger^{\alpha}$	0	0	0	$5\sqrt{\frac{3}{2}}a_1k^2$	0	$-\frac{a_0}{6\sqrt{2}}$	$-\frac{1}{6}\sqrt{\frac{5}{2}}(a_0+16a_1k^2)$	$\frac{a_0}{3}$	$\frac{a_0+40a_1k^2}{6\sqrt{2}}$	$\frac{ia_0k}{4\sqrt{3}}$
$\Gamma^{\#6}_{1^-}\dagger^{\alpha}$	0	0	0	$-\frac{5a_1k^2}{\sqrt{3}}$	0	$\frac{1}{6}(-a_0+20a_1k^2)$	$-\frac{1}{6}\sqrt{5}(a_0-5a_1k^2)$	$\frac{a_0+40a_1k^2}{6\sqrt{2}}$	$\frac{5}{12}(a_0-17a_1k^2)$	$\frac{ia_0k}{4\sqrt{6}}$
$h^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{ia_0k}{4\sqrt{2}}$	0	$-\frac{ia_0k}{4\sqrt{6}}$	$\frac{1}{4}i\sqrt{\frac{5}{6}}a_0k$	$-\frac{ia_0k}{4\sqrt{3}}$	$-\frac{ia_0k}{4\sqrt{6}}$	0

	$\Gamma^{\#1}_{2^+\,\alpha\beta}$	$\Gamma^{\#2}_{2^+\,\alpha\beta}$	$\Gamma^{\#3}_{2^+\,\alpha\beta}$	$h^{\#1}_{2^+\,\alpha\beta}$	$\Gamma^{\#1}_{2^-\,\alpha\beta\chi}$	$\Gamma^{\#2}_{2^-\,\alpha\beta\chi}$
$\Gamma^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{1}{4}(a_0+11a_1k^2)$	$-5\sqrt{\frac{2}{3}}a_1k^2$	$\frac{5a_1k^2}{\sqrt{3}}$	$\frac{ia_0k}{4\sqrt{2}}$	0	0
$\Gamma^{\#2}_{2^+}\dagger^{\alpha\beta}$	$-5\sqrt{\frac{2}{3}}a_1k^2$	$\frac{1}{6}(-3a_0+a_1k^2)$	$-\frac{a_1k^2}{6\sqrt{2}}$	$\frac{ia_0k}{4\sqrt{3}}$	0	0
$\Gamma^{\#3}_{2^+}\dagger^{\alpha\beta}$	$\frac{5a_1k^2}{\sqrt{3}}$	$-\frac{a_1k^2}{6\sqrt{2}}$	$\frac{1}{12}(3a_0+a_1k^2)$	$-\frac{ia_0k}{4\sqrt{6}}$	0	0
$h^{\#1}_{2^+}\dagger^{\alpha\beta}$	$-\frac{ia_0k}{4\sqrt{2}}$	$-\frac{ia_0k}{4\sqrt{3}}$	$\frac{ia_0k}{4\sqrt{6}}$	0	0	0
$\Gamma^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{1}{4}(a_0-a_1k^2)$	0
$\Gamma^{\#2}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	0	$\frac{1}{4}(a_0-5a_1k^2)$

	$\Delta^{\#1}_{0^+}$	$\Delta^{\#2}_{0^+}$	$\Delta^{\#3}_{0^+}$	$\Delta^{\#4}_{0^+}$	$\mathcal{T}^{\#1}_{0^+}$	$\mathcal{T}^{\#2}_{0^+}$	$\Delta^{\#1}_{0^-}$
$\Delta^{\#1}_{0^+}\dagger$	0	$\frac{4\sqrt{6}}{16a_0+3a_0k^2}$	$-\frac{4\sqrt{\frac{2}{3}}}{16a_0+3a_0k^2}$	$-\frac{8}{\sqrt{3}(16a_0+3a_0k^2)}$	$-\frac{2i\sqrt{2}}{a_0k}$	$-\frac{2i\sqrt{6}k}{16a_0+3a_0k^2}$	0
$\Delta^{\#2}_{0^+}\dagger$	$\frac{4\sqrt{6}}{16a_0+3a_0k^2}$	$-\frac{48(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$	$\frac{16(19a_0+(3a_0+197a_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{8\sqrt{2}(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{8i\sqrt{3}(a_0-65a_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{24ik(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$	0
$\Delta^{\#3}_{0^+}\dagger$	$-\frac{4\sqrt{\frac{2}{3}}}{16a_0+3a_0k^2}$	$\frac{16(19a_0+(3a_0+197a_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{16(35a_0+(6a_0+197a_1)k^2)}{3a_0^2(16+3k^2)^2}$	$-\frac{8\sqrt{2}(22a_0+(3a_0+394a_1)k^2)}{3a_0^2(16+3k^2)^2}$	$\frac{8i(a_0-65a_1k^2)}{\sqrt{3}a_0^2k(16+3k^2)}$	$-\frac{8ik(19a_0+(3a_0+197a_1)k^2)}{a_0^2(16+3k^2)^2}$	0
$\Delta^{\#4}_{0^+}\dagger$	$-\frac{8}{\sqrt{3}(16a_0+3a_0k^2)}$	$-\frac{8\sqrt{2}(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{8\sqrt{2}(22a_0+(3a_0+394a_1)k^2)}{3a_0^2(16+3k^2)^2}$	$\frac{32(13a_0+(3a_0-197a_1)k^2)}{3a_0^2(16+3k^2)^2}$	$\frac{8i\sqrt{\frac{2}{3}}(a_0-65a_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{4i\sqrt{2}k(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$	0
$\mathcal{T}^{\#1}_{0^+}\dagger$	$\frac{2i\sqrt{2}}{a_0k}$	$\frac{8i\sqrt{3}(a_0-65a_1k^2)}{a_0^2k(16+3k^2)}$	$-\frac{8i(a_0-65a_1k^2)}{\sqrt{3}a_0^2k(16+3k^2)}$	$-\frac{8i\sqrt{\frac{2}{3}}(a_0-65a_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{4(a_0-25a_1k^2)}{a_0^2k^2}$	$\frac{4\sqrt{3}(a_0-65a_1k^2)}{a_0^2(16+3k^2)}$	0
$\mathcal{T}^{\#2}_{0^+}\dagger$	$\frac{2i\sqrt{6}k}{16a_0+3a_0k^2}$	$-\frac{24ik(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$	$\frac{8ik(19a_0+(3a_0+197a_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{4i\sqrt{2}k(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$	$\frac{4\sqrt{3}(a_0-65a_1k^2)}{a_0^2(16+3k^2)}$	$-\frac{12k^2(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$	0
$\Delta^{\#1}_{0^-}\dagger$	0	0	0	0	0	0	$-\frac{2}{a_0-a_1k^2}$

	$\Gamma^{\#1}_{0^+}$	$\Gamma^{\#2}_{0^+}$	$\Gamma^{\#3}_{0^+}$	$\Gamma^{\#4}_{0^+}$	$h^{\#1}_{0^+}$	$h^{\#2}_{0^+}$	$\Gamma^{\#1}_{0^-}$
$\Gamma^{\#1}_{0^+}\dagger$	$\frac{1}{2}(-a_0+25a_1k^2)$	0	$10\sqrt{\frac{2}{3}}a_1k^2$	$-\frac{10a_1k^2}{\sqrt{3}}$	$-\frac{ia_0k}{2\sqrt{2}}$	0	0
$\Gamma^{\#2}_{0^+}\dagger$	0	0	$\frac{a_0}{2}$	$-\frac{a_0}{2\sqrt{2}}$	0	0	0
$\Gamma^{\#3}_{0^+}\dagger$	$10\sqrt{\frac{2}{3}}a_1k^2$	$\frac{a_0}{2}$	$\frac{23a_1k^2}{3}$	$-\frac{3a_0+46a_1k^2}{6\sqrt{2}}$	$\frac{ia_0k}{4\sqrt{3}}$	$-\frac{1}{4}ia_0k$	0
$\Gamma^{\#4}_{0^+}\dagger$	$-\frac{10a_1k^2}{\sqrt{3}}$	$-\frac{a_0}{2\sqrt{2}}$	$-\frac{3a_0+46a_1k^2}{6\sqrt{2}}$	$\frac{1}{6}(3a_0+23a_1k^2)$	$-\frac{ia_0k}{4\sqrt{6}}$	$\frac{ia_0k}{4\sqrt{2}}$	0
$h^{\#1}_{0^+}\dagger$	$\frac{ia_0k}{2\sqrt{2}}$	0	$-\frac{ia_0k}{4\sqrt{3}}$	$\frac{ia_0k}{4\sqrt{6}}$	0	0	0
$h^{\#2}_{0^+}\dagger$	0	0	$\frac{ia_0k}{4}$	$-\frac{ia_0k}{4\sqrt{2}}$	0	0	0
$\Gamma^{\#1}_{0^-}\dagger$	0	0	0	0	0	0	$\frac{1}{2}(-a_0+a_1k^2)$

Quadratic (free) action

$$
\begin{aligned}
\mathcal{S} == \iiiint\Big(&\tfrac{1}{4}\big(2a_0\,\Gamma^{\alpha}{}_{\alpha}{}^{\beta}\,\Gamma^{\chi}{}_{\beta\chi}+4\,h^{\alpha\beta}\,\mathcal{T}_{\alpha\beta}+\Gamma^{\alpha\beta\chi}\,(-2a_0\,\Gamma_{\beta\chi\alpha}+4\,\Delta_{\alpha\beta\chi})-\\
&a_0\,h^{\chi}{}_{\chi}\,\partial_\beta\Gamma^{\alpha}{}_{\alpha}{}^{\beta}+a_0\,h^{\chi}{}_{\chi}\,\partial_\beta\Gamma^{\alpha\beta}{}_{\alpha}-2a_0\,h_{\alpha\chi}\,\partial_\beta\Gamma^{\alpha\beta\chi}+22a_1\,\partial^\alpha\Gamma^{\chi\delta}{}_{\delta}\,\partial_\beta\Gamma_{\chi\alpha}{}^{\beta}+\\
&2a_1\,\partial^\alpha\Gamma_{\chi\alpha}{}^{\beta}\,\partial_\beta\Gamma^{\chi\delta}{}_{\delta}-76a_1\,\partial^\alpha\Gamma^{\chi\delta}{}_{\chi}\,\partial_\beta\Gamma_{\delta\alpha}{}^{\beta}+2a_0\,h_{\beta\chi}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}-\\
&2a_1\,\partial_\beta\Gamma_{\chi}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}-2a_1\,\partial_\beta\Gamma^{\delta}{}_{\delta\chi}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}+2a_1\,\partial_\chi\Gamma_{\beta}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}-\\
&2a_1\,\partial_\chi\Gamma^{\delta}{}_{\beta\delta}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}-2a_1\,\partial_\chi\Gamma^{\delta}{}_{\delta\beta}\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}-22a_1\,\partial_\beta\Gamma_{\chi}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\alpha}+\\
&38a_1\,\partial_\beta\Gamma^{\delta}{}_{\chi\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\alpha}+22a_1\,\partial_\chi\Gamma_{\beta}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\alpha}-2a_1\,\partial_\chi\Gamma^{\delta}{}_{\beta\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\alpha}+\\
&4a_1\,\partial_\alpha\Gamma_{\chi}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\beta}-4a_1\,\partial_\chi\Gamma_{\alpha}{}^{\delta}{}_{\delta}\,\partial^\chi\Gamma^{\alpha\beta}{}_{\beta}-2a_1\,\partial_\chi\Gamma^{\alpha\beta\chi}\,\partial_\delta\Gamma_{\alpha\beta}{}^{\delta}-\\
&2a_1\,\partial_\beta\Gamma^{\alpha\beta\chi}\,\partial_\delta\Gamma_{\alpha\chi}{}^{\delta}-2a_1\,\partial_\beta\Gamma^{\alpha\beta\chi}\,\partial_\delta\Gamma_{\alpha}{}^{\delta}{}_{\chi}+38a_1\,\partial_\chi\Gamma^{\alpha\beta\chi}\,\partial_\delta\Gamma_{\beta\alpha}{}^{\delta}+\\
&4a_1\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}\,\partial_\delta\Gamma_{\beta}{}^{\delta}{}_{\chi}-22a_1\,\partial^\chi\Gamma^{\alpha\beta}{}_{\beta}\,\partial_\delta\Gamma_{\chi\alpha}{}^{\delta}+2a_1\,\partial^\chi\Gamma^{\alpha\beta}{}_{\alpha}\,\partial_\delta\Gamma_{\chi\beta}{}^{\delta}-\\
&2a_1\,\partial_\beta\Gamma^{\alpha\beta\chi}\,\partial_\delta\Gamma_{\chi}{}^{\delta}{}_{\alpha}-2a_1\,\partial^\chi\Gamma^{\alpha\beta}{}_{\beta}\,\partial_\delta\Gamma_{\chi}{}^{\delta}{}_{\alpha}+2a_1\,\partial^\chi\Gamma_{\beta\alpha}{}^{\beta}\,\partial_\delta\Gamma_{\chi}{}^{\delta\alpha}+\\
&4a_1\,\partial^\chi\Gamma^{\alpha}{}_{\alpha}{}^{\beta}\,\partial_\delta\Gamma_{\chi}{}^{\delta}{}_{\beta}-2a_1\,\partial_\beta\Gamma^{\alpha}{}_{\alpha}{}^{\beta}\,\partial_\delta\Gamma^{\chi}{}_{\chi}{}^{\delta}+4a_1\,\partial_\beta\Gamma^{\alpha}{}_{\alpha}{}^{\beta}\,\partial_\delta\Gamma^{\chi\delta}{}_{\chi}-\\
&2a_1\,\partial_\beta\Gamma^{\alpha\beta}{}_{\alpha}\,\partial_\delta\Gamma^{\chi\delta}{}_{\chi}+2a_1\,\partial_\alpha\Gamma_{\beta\chi\delta}\,\partial^\delta\Gamma^{\alpha\beta\chi}+4a_1\,\partial_\alpha\Gamma_{\beta\delta\chi}\,\partial^\delta\Gamma^{\alpha\beta\chi}+\\
&4a_1\,\partial_\alpha\Gamma_{\chi\beta\delta}\,\partial^\delta\Gamma^{\alpha\beta\chi}+2a_1\,\partial_\alpha\Gamma_{\chi\delta\beta}\,\partial^\delta\Gamma^{\alpha\beta\chi}+4a_1\,\partial_\alpha\Gamma_{\delta\beta\chi}\,\partial^\delta\Gamma^{\alpha\beta\chi}+\\
&4a_1\,\partial_\alpha\Gamma_{\delta\chi\beta}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\beta\Gamma_{\alpha\chi\delta}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\beta\Gamma_{\alpha\delta\chi}\,\partial^\delta\Gamma^{\alpha\beta\chi}-\\
&2a_1\,\partial_\beta\Gamma_{\chi\delta\alpha}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\chi\Gamma_{\alpha\beta\delta}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\chi\Gamma_{\beta\alpha\delta}\,\partial^\delta\Gamma^{\alpha\beta\chi}+\\
&4a_1\,\partial_\chi\Gamma_{\beta\delta\alpha}\,\partial^\delta\Gamma^{\alpha\beta\chi}-4a_1\,\partial_\delta\Gamma_{\alpha\beta\chi}\,\partial^\delta\Gamma^{\alpha\beta\chi}-4a_1\,\partial_\delta\Gamma_{\alpha\chi\beta}\,\partial^\delta\Gamma^{\alpha\beta\chi}-\\
&2a_1\,\partial_\delta\Gamma_{\beta\alpha\chi}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\delta\Gamma_{\beta\chi\alpha}\,\partial^\delta\Gamma^{\alpha\beta\chi}-2a_1\,\partial_\delta\Gamma_{\chi\beta\alpha}\,\partial^\delta\Gamma^{\alpha\beta\chi}+\\
&2a_1\,\partial_\beta\Gamma_{\delta\alpha}{}^{\beta}\,\partial^\delta\Gamma^{\chi\alpha}{}_{\chi}+2a_1\,\partial_\beta\Gamma_{\delta\alpha}{}^{\beta}\,\partial^\delta\Gamma^{\chi}{}_{\chi}{}^{\alpha}\big)\Big)[t,x,y,z]\,dz\,dy\,dx\,dt
\end{aligned}
$$

Source constraints/gauge generators

SO(3) irreps	Multiplicities
$2\mathcal{T}^{\#2}_{0^+}-ik\,\Delta^{\#2}_{0^+}==0$	1
$\Delta^{\#3}_{0^+}+2\,\Delta^{\#4}_{0^+}+3\,\Delta^{\#2}_{0^+}==0$	1
$6\,\mathcal{T}^{\#1}_{1^-}{}^{\alpha}-ik\,(3\,\Delta^{\#2}_{1^-}{}^{\alpha}-\Delta^{\#5}_{1^-}{}^{\alpha}+\Delta^{\#3}_{1^-}{}^{\alpha})==0$	3
$2\,\Delta^{\#6}_{1^-}{}^{\alpha}+\Delta^{\#4}_{1^-}{}^{\alpha}+2\,\Delta^{\#5}_{1^-}{}^{\alpha}+\Delta^{\#3}_{1^-}{}^{\alpha}==0$	3
Total constraints:	8

	$\Gamma^{\#1}_{3^-\,\alpha\beta\chi}$
$\Gamma^{\#1}_{3^-}\dagger^{\alpha\beta\chi}$	$\frac{1}{2}(-a_0-7a_1k^2)$

	$\Delta^{\#1}_{3^-\,\alpha\beta\chi}$
$\Delta^{\#1}_{3^-}\dagger^{\alpha\beta\chi}$	$-\frac{2}{a_0+7a_1k^2}$

	$\Delta^{\#1}_{2^+\,\alpha\beta}$	$\Delta^{\#2}_{2^+\,\alpha\beta}$	$\Delta^{\#3}_{2^+\,\alpha\beta}$	$\mathcal{T}^{\#1}_{2^+\,\alpha\beta}$	$\Delta^{\#1}_{2^-\,\alpha\beta\chi}$	$\Delta^{\#2}_{2^-\,\alpha\beta\chi}$
$\Delta^{\#1}_{2^+}\dagger^{\alpha\beta}$	0	$\frac{2\sqrt{\frac{2}{3}}}{a_0}$	$\frac{4}{\sqrt{3}a_0}$	$\frac{4i\sqrt{2}}{a_0k}$	0	0
$\Delta^{\#2}_{2^+}\dagger^{\alpha\beta}$	$\frac{2\sqrt{\frac{2}{3}}}{a_0}$	$-\frac{8(a_0+13a_1k^2)}{3a_0^2}$	$-\frac{2\sqrt{2}(a_0+52a_1k^2)}{3a_0^2}$	$-\frac{4i(a_0+31a_1k^2)}{\sqrt{3}a_0^2k}$	0	0
$\Delta^{\#3}_{2^+}\dagger^{\alpha\beta}$	$\frac{4}{\sqrt{3}a_0}$	$-\frac{2\sqrt{2}(a_0+52a_1k^2)}{3a_0^2}$	$\frac{8(a_0-26a_1k^2)}{3a_0^2}$	$-\frac{4i\sqrt{\frac{2}{3}}(a_0+31a_1k^2)}{a_0^2k}$	0	0
$\mathcal{T}^{\#1}_{2^+}\dagger^{\alpha\beta}$	$-\frac{4i\sqrt{2}}{a_0k}$	$\frac{4i(a_0+31a_1k^2)}{\sqrt{3}a_0^2k}$	$\frac{4i\sqrt{\frac{2}{3}}(a_0+31a_1k^2)}{a_0^2k}$	$-\frac{8(a_0+11a_1k^2)}{a_0^2k^2}$	0	0
$\Delta^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4}{a_0-a_1k^2}$	0
$\Delta^{\#2}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	0	$\frac{4}{a_0-5a_1k^2}$

Massive and massless spectra

** MassiveAnalysisOfSector... Null

Unitarity conditions