Particle spectrograph

Wave operator and propagator

	$\Delta^{\#1}_{1^+\,\alpha\beta}$	$\Delta^{\#2}_{1^+\,\alpha\beta}$	$\Delta^{\#3}_{1^+\,\alpha\beta}$
$\Delta^{\#1}_{1^+}\dagger^{\alpha\beta}$	$\frac{4}{3}(-\frac{1}{a_0+4a_1-4a_2}+(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)/(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$\frac{2}{3}\sqrt{2}(-\frac{1}{a_0+4a_1-4a_2}+(-2a_0+8a_1+4a_2+6a_3-32a_6+8a_7+4a_9)/(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$\frac{4(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$
$\Delta^{\#2}_{1^+}\dagger^{\alpha\beta}$	$\frac{2}{3}\sqrt{2}(-\frac{1}{a_0+4a_1-4a_2}+(-2a_0+8a_1+4a_2+6a_3-32a_6+8a_7+4a_9)/(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$-\frac{2}{3(a_0+4a_1-4a_2)}+\frac{8(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$-\frac{4\sqrt{2}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$
$\Delta^{\#3}_{1^+}\dagger^{\alpha\beta}$	$\frac{4(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$-\frac{4\sqrt{2}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{4(a_0-2a_1-a_2)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$
$\Delta^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0
$\Delta^{\#2}_{1^-}\dagger^{\alpha}$	0	0	0
$\Delta^{\#3}_{1^-}\dagger^{\alpha}$	0	0	0
$\Delta^{\#4}_{1^-}\dagger^{\alpha}$	0	0	0
$\Delta^{\#5}_{1^-}\dagger^{\alpha}$	0	0	0
$\Delta^{\#6}_{1^-}\dagger^{\alpha}$	0	0	0
$\mathcal{T}^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0

	$\Delta^{\#1}_{1^-\,\alpha}$	$\Delta^{\#2}_{1^-\,\alpha}$	$\Delta^{\#3}_{1^-\,\alpha}$	$\Delta^{\#4}_{1^-\,\alpha}$	$\Delta^{\#5}_{1^-\,\alpha}$	$\Delta^{\#6}_{1^-\,\alpha}$	$\mathcal{T}^{\#1}_{1^-\,\alpha}$
$\Delta^{\#1}_{1^+}\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
$\Delta^{\#2}_{1^+}\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
$\Delta^{\#3}_{1^+}\dagger^{\alpha\beta}$	0	0	0	0	0	0	0
$\Delta^{\#1}_{1^-}\dagger^{\alpha}$	$\frac{4}{3}(-\frac{2}{2a_0+2a_1+a_2+3a_3}+(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)/(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$(4\sqrt{2}(3a_0^2-4a_1^2-a_2^2-3a_3(3a_3+4(-4a_6+a_7))-6a_3a_9-a_9^2-2a_2(3a_3+a_9)-4a_1(a_2+3a_3+a_9)-6a_0(2a_1+a_2+a_3-8a_6+2a_7+a_9)))/(3(2a_0+2a_1+a_2+3a_3)(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	0	0	$\frac{4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$-((4(2a_1+a_2+a_9))/(3\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	0
$\Delta^{\#2}_{1^-}\dagger^{\alpha}$	$(4\sqrt{2}(3a_0^2-4a_1^2-a_2^2-3a_3(3a_3+4(-4a_6+a_7))-6a_3a_9-a_9^2-2a_2(3a_3+a_9)-4a_1(a_2+3a_3+a_9)-6a_0(2a_1+a_2+a_3-8a_6+2a_7+a_9)))/(3(2a_0+2a_1+a_2+3a_3)(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$-\frac{4}{3(2a_0+2a_1+a_2+3a_3)}+\frac{8(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	$\frac{8(2a_1+a_2+a_9)}{3\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$-\frac{4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0
$\Delta^{\#3}_{1^-}\dagger^{\alpha}$	0	0	$-\frac{5}{18(a_0+4a_6-4a_7)}$	$\frac{\sqrt{5}}{18(a_0+4a_6-4a_7)}$	0	0	0
$\Delta^{\#4}_{1^-}\dagger^{\alpha}$	0	0	$\frac{\sqrt{5}}{18(a_0+4a_6-4a_7)}$	$\frac{1}{-18(a_0+4a_6)+72a_7}$	0	0	0
$\Delta^{\#5}_{1^-}\dagger^{\alpha}$	$\frac{4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{8(2a_1+a_2+a_9)}{3\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	$\frac{8(a_0-2a_1-a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{4\sqrt{2}(-a_0+2a_1+a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0
$\Delta^{\#6}_{1^-}\dagger^{\alpha}$	$-((4(2a_1+a_2+a_9))/(3\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	$-\frac{4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	$\frac{4\sqrt{2}(-a_0+2a_1+a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{4(a_0-2a_1-a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0
$\mathcal{T}^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	0	0	0	0

	$\Gamma^{\#1}_{1^+\,\alpha\beta}$	$\Gamma^{\#2}_{1^+\,\alpha\beta}$	$\Gamma^{\#3}_{1^+\,\alpha\beta}$	$\Gamma^{\#1}_{1^-\,\alpha}$	$\Gamma^{\#2}_{1^-\,\alpha}$	$\Gamma^{\#3}_{1^-\,\alpha}$	$\Gamma^{\#4}_{1^-\,\alpha}$	$\Gamma^{\#5}_{1^-\,\alpha}$	$\Gamma^{\#6}_{1^-\,\alpha}$	$h^{\#1}_{1^-\,\alpha}$
$\Gamma^{\#1}_{1^+}\dagger^{\alpha\beta}$	$\frac{1}{4}(-a_0-6a_1+5a_2)$	$-\frac{a_0+2a_1-3a_2}{2\sqrt{2}}$	$\frac{1}{4}(-2a_1-a_2-a_9)$	0	0	0	0	0	0	0
$\Gamma^{\#2}_{1^+}\dagger^{\alpha\beta}$	$-\frac{a_0+2a_1-3a_2}{2\sqrt{2}}$	$\frac{1}{2}(-2a_1+a_2)$	$\frac{2a_1+a_2+a_9}{2\sqrt{2}}$	0	0	0	0	0	0	0
$\Gamma^{\#3}_{1^+}\dagger^{\alpha\beta}$	$\frac{1}{4}(-2a_1-a_2-a_9)$	$\frac{2a_1+a_2+a_9}{2\sqrt{2}}$	$\frac{3}{4}(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)$	0	0	0	0	0	0	0
$\Gamma^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{1}{4}(-a_0-2a_1-a_2-2a_3)$	$\frac{a_0+a_3}{2\sqrt{2}}$	0	0	$-\frac{2a_1+a_2+a_9}{2\sqrt{6}}$	$\frac{2a_1+a_2+a_9}{4\sqrt{3}}$	0
$\Gamma^{\#2}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{a_0+a_3}{2\sqrt{2}}$	$\frac{1}{4}(-2a_1-a_2-a_3)$	0	0	$-\frac{2a_1+a_2+a_9}{2\sqrt{3}}$	$\frac{2a_1+a_2+a_9}{2\sqrt{6}}$	0
$\Gamma^{\#3}_{1^-}\dagger^{\alpha}$	0	0	0	0	0	$-\frac{5}{2}(a_0+4a_6-4a_7)$	$\frac{1}{2}\sqrt{5}(a_0+4a_6-4a_7)$	0	0	0
$\Gamma^{\#4}_{1^-}\dagger^{\alpha}$	0	0	0	0	0	$\frac{1}{2}\sqrt{5}(a_0+4a_6-4a_7)$	$-\frac{a_0}{2}-2a_6+2a_7$	0	0	0
$\Gamma^{\#5}_{1^-}\dagger^{\alpha}$	0	0	0	$-\frac{2a_1+a_2+a_9}{2\sqrt{6}}$	$-\frac{2a_1+a_2+a_9}{2\sqrt{3}}$	0	0	$\frac{1}{2}(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)$	$\frac{-a_0+4a_1+2a_2+3a_3-16a_6+4a_7+2a_9}{2\sqrt{2}}$	0
$\Gamma^{\#6}_{1^-}\dagger^{\alpha}$	0	0	0	$\frac{2a_1+a_2+a_9}{4\sqrt{3}}$	$\frac{2a_1+a_2+a_9}{2\sqrt{6}}$	0	0	$\frac{-a_0+4a_1+2a_2+3a_3-16a_6+4a_7+2a_9}{2\sqrt{2}}$	$\frac{1}{4}(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)$	0
$h^{\#1}_{1^-}\dagger^{\alpha}$	0	0	0	0	0	0	0	0	0	0

Quadratic (free) action

$$\mathcal{S}==$$

$$\iiiint(\tfrac{1}{24}(4(4a_1+2a_2+3a_3-12a_6+2a_9)\Gamma_{\alpha\ \chi}^{\ \chi}\Gamma^{\alpha\beta}{}_{\beta}-6(a_0+6a_1+a_2+3a_3-8a_6-4a_7+2a_9)\Gamma_{\alpha\beta\chi}\Gamma^{\alpha\beta\chi}-6a_0\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}-12a_1\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}-$$
$$18a_2\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}-18a_3\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}+48a_6\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}+24a_7\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}-$$
$$12a_9\Gamma_{\alpha\chi\beta}\Gamma^{\alpha\beta\chi}-12a_0\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}+6a_1\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}-9a_2\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}+$$
$$9a_3\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}-96a_6\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}+60a_7\Gamma^{\alpha\beta\chi}\Gamma_{\beta\alpha\chi}-36a_0\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+$$
$$12a_1\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+30a_2\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+18a_3\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}-192a_6\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+$$
$$120a_7\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+12a_9\Gamma^{\alpha\beta\chi}\Gamma_{\beta\chi\alpha}+12a_0\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}-24a_1\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}-$$
$$12a_2\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}-12a_3\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}+96a_6\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}-48a_7\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}-$$
$$12a_9\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma_{\beta\ \chi}^{\ \chi}+12a_0\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-8a_1\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-4a_2\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-$$
$$12a_3\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}+96a_6\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-48a_7\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-4a_9\Gamma^{\alpha\beta}{}_{\alpha}\Gamma_{\beta\ \chi}^{\ \chi}-$$
$$12a_0\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+30a_1\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+3a_2\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+9a_3\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}-$$
$$96a_6\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+60a_7\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+12a_9\Gamma^{\alpha\beta\chi}\Gamma_{\chi\beta\alpha}+12a_0\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}+$$
$$8a_1\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}+4a_2\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}+12a_3\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}-24a_7\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}+$$
$$4a_9\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\beta\chi}-12a_7\Gamma^{\alpha\beta}{}_{\alpha}\Gamma^{\chi}{}_{\beta\chi}+8a_1\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\chi\beta}+4a_2\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\chi\beta}-$$
$$12a_7\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\chi\beta}+4a_9\Gamma^{\alpha\ \beta}_{\ \alpha}\Gamma^{\chi}{}_{\chi\beta}+24h^{\alpha\beta}\mathcal{T}_{\alpha\beta}+24\Gamma^{\alpha\beta\chi}\Delta_{\alpha\beta\chi}-$$
$$12a_0\Gamma^{\alpha\beta\chi}\partial_\beta h_{\alpha\chi}-6a_0\Gamma^{\alpha\ \beta}_{\ \alpha}\partial_\beta h^{\chi}{}_{\chi}+6a_0\Gamma^{\alpha\beta}{}_{\alpha}\partial_\beta h^{\chi}{}_{\chi}-6a_0h^{\chi}{}_{\chi}\partial_\beta\Gamma^{\alpha\ \beta}_{\ \alpha}+$$
$$6a_0h^{\chi}{}_{\chi}\partial_\beta\Gamma^{\alpha\beta}{}_{\alpha}-12a_0h_{\alpha\chi}\partial_\beta\Gamma^{\alpha\beta\chi}+6a_0h^{\alpha\beta}\partial_\beta\partial_\alpha h^{\chi}{}_{\chi}-3a_0\partial_\beta h^{\chi}{}_{\chi}\partial^\beta h^{\alpha}{}_{\alpha}+$$
$$12a_0\Gamma^{\alpha\ \beta}_{\ \alpha}\partial_\chi h_\beta{}^{\chi}+6a_0\partial^\beta h^{\alpha}{}_{\alpha}\partial_\chi h_\beta{}^{\chi}-12a_0h^{\alpha\beta}\partial_\chi\partial_\beta h_\alpha{}^{\chi}+6a_0h^{\alpha}{}_{\alpha}\partial_\chi\partial_\beta h^{\beta\chi}+$$
$$6a_0h^{\alpha\beta}\partial_\chi\partial^\chi h_{\alpha\beta}-6a_0h^{\alpha}{}_{\alpha}\partial_\chi\partial^\chi h^{\beta}{}_{\beta}-6a_0\partial_\beta h_{\alpha\chi}\partial^\chi h^{\alpha\beta}+3a_0\partial_\chi h_{\alpha\beta}\partial^\chi h^{\alpha\beta}+$$
$$12a_0h_{\beta\chi}\partial^\chi\Gamma^{\alpha\ \beta}_{\ \alpha}+48a_1\partial_\alpha\Gamma_{\beta\chi\mu}\partial^\mu\Gamma^{\alpha\beta\chi}-48a_1\partial_\alpha\Gamma_{\beta\mu\chi}\partial^\mu\Gamma^{\alpha\beta\chi}-$$
$$48a_1\partial_\alpha\Gamma_{\chi\beta\mu}\partial^\mu\Gamma^{\alpha\beta\chi}+48a_1\partial_\alpha\Gamma_{\chi\mu\beta}\partial^\mu\Gamma^{\alpha\beta\chi}+24a_1\partial_\alpha\Gamma_{\mu\beta\chi}\partial^\mu\Gamma^{\alpha\beta\chi}-$$
$$24a_1\partial_\alpha\Gamma_{\mu\chi\beta}\partial^\mu\Gamma^{\alpha\beta\chi}-48a_1\partial_\beta\Gamma_{\alpha\chi\mu}\partial^\mu\Gamma^{\alpha\beta\chi}+24a_1\partial_\beta\Gamma_{\alpha\mu\chi}\partial^\mu\Gamma^{\alpha\beta\chi}-$$
$$24a_1\partial_\beta\Gamma_{\chi\mu\alpha}\partial^\mu\Gamma^{\alpha\beta\chi}+24a_1\partial_\chi\Gamma_{\alpha\beta\mu}\partial^\mu\Gamma^{\alpha\beta\chi}-24a_1\partial_\chi\Gamma_{\beta\alpha\mu}\partial^\mu\Gamma^{\alpha\beta\chi}+$$
$$48a_1\partial_\chi\Gamma_{\beta\mu\alpha}\partial^\mu\Gamma^{\alpha\beta\chi}-24a_1\partial_\mu\Gamma_{\alpha\beta\chi}\partial^\mu\Gamma^{\alpha\beta\chi}+24a_1\partial_\mu\Gamma_{\alpha\chi\beta}\partial^\mu\Gamma^{\alpha\beta\chi}+$$
$$24a_1\partial_\mu\Gamma_{\beta\alpha\chi}\partial^\mu\Gamma^{\alpha\beta\chi}-48a_1\partial_\mu\Gamma_{\beta\chi\alpha}\partial^\mu\Gamma^{\alpha\beta\chi}+24a_1\partial_\mu\Gamma_{\chi\beta\alpha}\partial^\mu\Gamma^{\alpha\beta\chi}+$$
$$24a_1\partial_\chi\partial_\beta h_{\alpha\mu}\partial^\mu\partial^\chi h^{\alpha\beta}-24a_1\partial_\mu\partial_\beta h_{\alpha\chi}\partial^\mu\partial^\chi h^{\alpha\beta}))[t,x,y,z]\,dz\,dy\,dx\,dt$$

	$\Delta^{\#1}_{0^+}$	$\Delta^{\#2}_{0^+}$	$\Delta^{\#3}_{0^+}$	$\Delta^{\#4}_{0^+}$	$\mathcal{T}^{\#1}_{0^+}$	$\mathcal{T}^{\#2}_{0^+}$	$\Delta^{\#1}_{0^-}$
$\Delta^{\#1}_{0^+}\dagger$	$-\frac{4}{2a_0+2a_1+a_2+3a_3}$	0	0	0	0	0	0
$\Delta^{\#2}_{0^+}\dagger$	0	$\frac{1}{-6(a_0+4a_6)+24a_7}$	$\frac{1}{6(a_0+4a_6-4a_7)}$	0	0	0	0
$\Delta^{\#3}_{0^+}\dagger$	0	$\frac{1}{6a_0+24a_6-24a_7}$	$\frac{1}{-6(a_0+4a_6)+24a_7}$	0	0	0	0
$\Delta^{\#4}_{0^+}\dagger$	0	0	0	0	0	0	0
$\mathcal{T}^{\#1}_{0^+}\dagger$	0	0	0	0	$\frac{4}{a_0k^2}$	0	0
$\mathcal{T}^{\#2}_{0^+}\dagger$	0	0	0	0	0	0	0
$\Delta^{\#1}_{0^-}\dagger$	0	0	0	0	0	0	$-\frac{2}{a_0+4(a_1-a_2+3a_1k^2)}$

	$\Gamma^{\#1}_{0^+}$	$\Gamma^{\#2}_{0^+}$	$\Gamma^{\#3}_{0^+}$	$\Gamma^{\#4}_{0^+}$	$h^{\#1}_{0^+}$	$h^{\#2}_{0^+}$	$\Gamma^{\#1}_{0^-}$
$\Gamma^{\#1}_{0^+}\dagger$	$\frac{1}{4}(-2a_0-2a_1-a_2-3a_3)$	0	0	0	0	0	0
$\Gamma^{\#2}_{0^+}\dagger$	0	$-\frac{3}{2}(a_0+4a_6-4a_7)$	$\frac{3}{2}(a_0+4a_6-4a_7)$	0	0	0	0
$\Gamma^{\#3}_{0^+}\dagger$	0	$\frac{3}{2}(a_0+4a_6-4a_7)$	$-\frac{3}{2}(a_0+4a_6-4a_7)$	0	0	0	0
$\Gamma^{\#4}_{0^+}\dagger$	0	0	0	0	0	0	0
$h^{\#1}_{0^+}\dagger$	0	0	0	0	$\frac{a_0k^2}{4}$	0	0
$h^{\#2}_{0^+}\dagger$	0	0	0	0	0	0	0
$\Gamma^{\#1}_{0^-}\dagger$	0	0	0	0	0	0	$-\frac{a_0}{2}-2a_1+2a_2-6a_1k^2$

Source constraints/gauge generators

SO(3) irreps	Multiplicities
$\mathcal{T}^{\#2}_{0^+}==0$	1
$\Delta^{\#4}_{0^+}==0$	1
$\Delta^{\#3}_{0^+}+3\Delta^{\#2}_{0^+}==0$	1
$\mathcal{T}^{\#1\alpha}_{1^-}==0$	3
$\Delta^{\#6\alpha}_{1^-}+\Delta^{\#5\alpha}_{1^-}==0$	3
$\Delta^{\#4\alpha}_{1^-}+\Delta^{\#3\alpha}_{1^-}==0$	3
Total constraints:	12

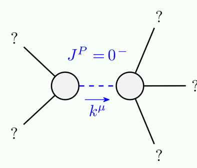
	$\Delta^{\#1}_{2^+\,\alpha\beta}$	$\Delta^{\#2}_{2^+\,\alpha\beta}$	$\Delta^{\#3}_{2^+\,\alpha\beta}$	$\mathcal{T}^{\#1}_{2^+\,\alpha\beta}$	$\Delta^{\#1}_{2^-\,\alpha\beta\chi}$	$\Delta^{\#2}_{2^-\,\alpha\beta\chi}$
$\Delta^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{4(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)}{a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$	0	$\frac{4(2a_1+a_2+a_9)}{\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	0
$\Delta^{\#2}_{2^+}\dagger^{\alpha\beta}$	0	$\frac{1}{-3(a_0+4a_6)+12a_7}$	0	0	0	0
$\Delta^{\#3}_{2^+}\dagger^{\alpha\beta}$	$\frac{4(2a_1+a_2+a_9)}{\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	$\frac{4(a_0-2a_1-a_2)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	0
$\mathcal{T}^{\#1}_{2^+}\dagger^{\alpha\beta}$	0	0	0	$-\frac{8}{a_0k^2}$	0	0
$\Delta^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)}{a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$	$\frac{4(2a_1+a_2+a_9)}{\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$
$\Delta^{\#2}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4(2a_1+a_2+a_9)}{\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{4(a_0-2a_1-a_2)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$

	$\Gamma^{\#1}_{2^+\,\alpha\beta}$	$\Gamma^{\#2}_{2^+\,\alpha\beta}$	$\Gamma^{\#3}_{2^+\,\alpha\beta}$	$h^{\#1}_{2^+\,\alpha\beta}$	$\Gamma^{\#1}_{2^-\,\alpha\beta\chi}$	$\Gamma^{\#2}_{2^-\,\alpha\beta\chi}$
$\Gamma^{\#1}_{2^+}\dagger^{\alpha\beta}$	$\frac{1}{4}(a_0-2a_1-a_2)$	0	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	0	0	0
$\Gamma^{\#2}_{2^+}\dagger^{\alpha\beta}$	0	$-3(a_0+4a_6-4a_7)$	0	0	0	0
$\Gamma^{\#3}_{2^+}\dagger^{\alpha\beta}$	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	0	$\frac{3}{4}(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)$	0	0	0
$h^{\#1}_{2^+}\dagger^{\alpha\beta}$	0	0	0	$-\frac{a_0k^2}{8}$	0	0
$\Gamma^{\#1}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{1}{4}(a_0-2a_1-a_2)$	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$
$\Gamma^{\#2}_{2^-}\dagger^{\alpha\beta\chi}$	0	0	0	0	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	$\frac{3}{4}(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)$

	$\Gamma^{\#1}_{3^-\,\alpha\beta\chi}$
$\Gamma^{\#1}_{3^-}\dagger^{\alpha\beta\chi}$	$-3(a_0+4a_6-4a_7)$

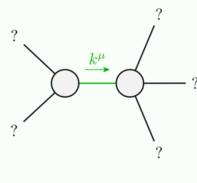
	$\Delta^{\#1}_{3^-\,\alpha\beta\chi}$
$\Delta^{\#1}_{3^-}\dagger^{\alpha\beta\chi}$	$\frac{1}{-3(a_0+4a_6)+12a_7}$

Massive and massless spectra



Massive particle

Pole residue:	$\frac{1}{6a_1}>0$
Polarisations:	1
Square mass:	$-\frac{a_0+4a_1-4a_2}{12a_1}>0$
Spin:	0
Parity:	Odd



Quadratic pole

Pole residue:	$-\frac{1}{a_0}>0$
Polarisations:	2

Unitarity conditions

$a_0<0$ && $a_2>\frac{1}{4}(a_0+4a_1)$ && $a_1>0$