	$\Delta_{1^{+}lphaeta}^{\#1}$	$\Delta_{1^{+}lphaeta}^{\#2}$	$\Delta^{\#3}_{1^+lphaeta}$	$\Delta_{1}^{\#1}{}_{lpha}$	$\Delta_{1}^{\#2}{}_{lpha}$	$\Delta_{1}^{\#3}{}_{lpha}$	$\Delta_{1^{-} \ lpha}^{\#4}$	$\Delta_{1}^{\#5}{}_{lpha}$	$\Delta_{1}^{\#6}{}_{lpha}$	${\mathcal T}_{1^{-}lpha}^{\sharp 1}$
$\Delta_1^{\#1} \uparrow^{\alpha_1}$	$\Delta_{1}^{+} \alpha \beta$	$\frac{2}{1} + \alpha \beta$	$\Delta_{1}^{+} \alpha \beta$	Δ1 α	$\Delta_1^{\circ} \alpha$	Δ ₁ - α	$\Delta_1^{-}\alpha$	Δ_1 α	Δ ₁ - α	ο
∆ ₁ + 1	0	a_0	0 - 2	0	O .	U	0	U	0	0
$\Delta_1^{\#2} \uparrow^{\alpha_i}$	$\left -\frac{2\sqrt{2}}{a_0} \right ^2$	$\frac{2(a_0^2 - 14a_0c_1k^2 - 35c_1^2k^4)}{a_0^2(a_0 - 29c_1k^2)}$	$\frac{1}{a_0^2 - 29 a_0 c_1 k^2}$	0	0	0	0	0	0	0
$\Delta_{1}^{#3} \dagger^{\alpha_{i}}$	0	$\frac{40\sqrt{2}c_1k^2}{a_0^2-29a_0c_1k^2}$	$\frac{4}{a_0-29c_1k^2}$	0	0	0	0	0	0	0
Δ ₁ -1 †	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	$-\frac{2i\sqrt{2}k}{a_0(2+k^2)}$
Δ ₁ ^{#2} †	0	0	0	$\frac{\sqrt{2} (4+k^2)}{a_0 (2+k^2)}$	$\frac{a_0^2 (4+k^2)^2 - 30 a_0 c_1 k^2 (4+k^2) (4+3 k^2) + c_1^2 k^4 (6416 + 7928 k^2 + 1901 k^4)}{2 a_0^2 (2+k^2)^2 (a_0 - 33 c_1 k^2)}$	$\frac{k^2 \left(a_0^2 \left(-2+k^2\right)+a_0 c_1 \left(560+302 k^2+71 k^4\right)-2 c_1^2 k^2 \left(9440+1901 k^2 \left(4+k^2\right)\right)\right)}{2 \sqrt{6} a_0^2 \left(2+k^2\right)^2 \left(a_0-33 c_1 k^2\right)}$	$-\frac{\sqrt{\frac{5}{6}} k^2 (a_0+c_1 (40-31 k^2))}{2 a_0 (2+k^2) (a_0-33 c_1 k^2)}$	$\frac{k^2 \left(2 a_0^{ 2} \left(5+2 k^2\right)-a_0 c_1 \left(880+778 k^2+199 k^4\right)+c_1^{ 2} k^2 \left(9440+1901 k^2 \left(4+k^2\right)\right)\right)}{2 \sqrt{3} a_0^{ 2} \left(2+k^2\right)^2 \left(a_0\text{-}33 c_1 k^2\right)}$	$\frac{k^2 \left(-a_0 + c_1 \left(200 + 43 k^2\right)\right)}{\sqrt{6} a_0 \left(2 + k^2\right) \left(a_0 - 33 c_1 k^2\right)}$	$-\frac{i k (-30 a_0 c_1 k^4 + a_0^2 (4 + k^2) + 27 c_1^2 k^4 (-28 + 3 k^2))}{a_0^2 (2 + k^2)^2 (a_0 - 33 c_1 k^2)}$
$\Delta_1^{#3}$ †	0	0	0	$-\frac{2k^2}{\sqrt{3}(2a_0+a_0k^2)}$	$\frac{k^2 \left(a_0^2 \left(-2+k^2\right)+a_0 c_1 \left(560+302 k^2+71 k^4\right)-2 c_1^2 k^2 \left(9440+1901 k^2 \left(4+k^2\right)\right)\right)}{2 \sqrt{6} \ a_0^2 \left(2+k^2\right)^2 \left(a_0-33 c_1 k^2\right)}$	$\frac{-{a_0}^2 \left(76+52 k^2+3 k^4\right)+4 a_0 c_1 k^2 \left(472+214 k^2+19 k^4\right)+4 c_1^2 k^4 \left(5120+7280 k^2+1901 k^4\right)}{12 a_0^2 \left(2+k^2\right)^2 \left(a_0\text{-}33 c_1 k^2\right)}$	$\frac{\sqrt{5} (10 a_0 + (3 a_0 - 328 c_1) k^2 - 62 c_1 k^4)}{12 a_0 (2 + k^2) (a_0 - 33 c_1 k^2)}$	$\frac{2{a_0}^2(-2+k^2) + a_0c_1k^2(472 + 934k^2 + 289k^4) - 2c_1^2k^4(5120 + 7280k^2 + 1901k^4)}{6\sqrt{2}{a_0}^2(2+k^2)^2(a_0 - 33c_1k^2)}$	$-\frac{2 a_0 + (3 a_0 - 56 c_1) k^2 + 86 c_1 k^4}{6 a_0 (2 + k^2) (a_0 - 33 c_1 k^2)}$	$\frac{i k (54c_1^2 k^4 (40+3 k^2) + a_0^2 (6+5 k^2) - 3 a_0 c_1 k^2 (86+23 k^2))}{\sqrt{6} a_0^2 (2+k^2)^2 (a_0-33 c_1 k^2)}$
Δ ₁ -4 †	0	0	0	0	$-\frac{\sqrt{\frac{5}{6}} k^2 (a_0+c_1 (40-31 k^2))}{2 a_0 (2+k^2) (a_0-33 c_1 k^2)}$	$\frac{\sqrt{5} (10 a_0 + k^2 (3 a_0 - 2 c_1 (164 + 31 k^2)))}{12 a_0 (2 + k^2) (a_0 - 33 c_1 k^2)}$	$\frac{1}{12 a_0 - 396 c_1 k^2}$	$\frac{\sqrt{\frac{5}{2}} \left(-2 a_0 + c_1 k^2 \left(164 + 31 k^2\right)\right)}{6 a_0 \left(2 + k^2\right) \left(a_0 - 33 c_1 k^2\right)}$	$-\frac{\sqrt{5}}{6(a_0-33c_1k^2)}$	$-\frac{i\sqrt{\frac{5}{6}} k(a_0-51c_1k^2)}{a_0(2+k^2)(a_0-33c_1k^2)}$
Δ ₁ ^{#,5} †	0	0	0	$\frac{\sqrt{\frac{2}{3}} k^2}{2 a_0 + a_0 k^2}$	$\frac{k^2 \left(2 a_0^{ 2} (5 + 2 k^2) - a_0 c_1 (880 + 778 k^2 + 199 k^4) + c_1^{ 2} k^2 (9440 + 1901 k^2 (4 + k^2))\right)}{2 \sqrt{3} a_0^{ 2} (2 + k^2)^2 (a_0 - 33 c_1 k^2)}$	$\frac{2a_0^2(-2+k^2) + a_0c_1k^2(472 + 934k^2 + 289k^4) - 2c_1^2k^4(5120 + 7280k^2 + 1901k^4)}{6\sqrt{2}a_0^2(2+k^2)^2(a_0 - 33c_1k^2)}$	$\frac{\sqrt{\frac{5}{2}} \left(-2 a_0 + c_1 k^2 \left(164 + 31 k^2\right)\right)}{6 a_0 \left(2 + k^2\right) \left(a_0 - 33 c_1 k^2\right)}$	$\frac{4 a_0^2 (17 + 14 k^2 + 3 k^4) - 4 a_0 c_1 k^2 (236 + 287 k^2 + 77 k^4) + c_1^2 k^4 (5120 + 7280 k^2 + 1901 k^4)}{6 a_0^2 (2 + k^2)^2 (a_0 - 33 c_1 k^2)}$	$-\frac{c_1 k^2 (28-43 k^2)+2 a_0 (7+3 k^2)}{3 \sqrt{2} a_0 (2+k^2) (a_0-33 c_1 k^2)}$	$\frac{i k (2 a_0^2 (3+k^2)-27 c_1^2 k^4 (40+3 k^2)+3 a_0 c_1 k^2 (34+7 k^2))}{\sqrt{3} a_0^2 (2+k^2)^2 (a_0-33 c_1 k^2)}$
Δ ₁ ^{#6} †	0	0	0	0	$\frac{k^2 \left(-a_0 + c_1 \left(200 + 43 k^2\right)\right)}{\sqrt{6} \ a_0 \left(2 + k^2\right) \left(a_0 - 33 c_1 k^2\right)}$	$-\frac{2a_0 + (3a_0 - 56c_1)k^2 + 86c_1k^4}{6a_0(2+k^2)(a_0 - 33c_1k^2)}$	$-\frac{\sqrt{5}}{6(a_0-33c_1k^2)}$	$-\frac{c_1 k^2 (28-43 k^2)+2 a_0 (7+3 k^2)}{3 \sqrt{2} a_0 (2+k^2) (a_0-33 c_1 k^2)}$	$\frac{5}{3(a_0-33c_1k^2)}$	$-\frac{i\sqrt{\frac{2}{3}}k(a_0+57c_1k^2)}{a_0(2+k^2)(a_0-33c_1k^2)}$
${\cal T}_1^{\# 1}$ †'	0	0	0	$\frac{2i\sqrt{2}k}{2a_0+a_0k^2}$	$\frac{i \left(-30 a_{0} c_{1} k^{5} + a_{0}^{2} k (4 + k^{2}) + 27 c_{1}^{2} k^{5} (-28 + 3 k^{2})\right)}{a_{0}^{2} (2 + k^{2})^{2} (a_{0} - 33 c_{1} k^{2})}$	$-\frac{i(54c_1^2k^5(40+3k^2)+a_0^2k(6+5k^2)-3a_0c_1k^3(86+23k^2))}{\sqrt{6}a_0^2(2+k^2)^2(a_0-33c_1k^2)}$	$\frac{i\sqrt{\frac{5}{6}} k(a_0-51c_1k^2)}{a_0(2+k^2)(a_0-33c_1k^2)}$	$-\frac{i(2a_0^2k(3+k^2)-27c_1^2k^5(40+3k^2)+3a_0c_1k^3(34+7k^2))}{\sqrt{3}a_0^2(2+k^2)^2(a_0-33c_1k^2)}$	$\frac{i\sqrt{\frac{2}{3}}k(a_0+57c_1k^2)}{a_0(2+k^2)(a_0-33c_1k^2)}$	$\frac{2 k^2 (a_0^2 + 30 a_0 c_1 k^2 - 459 c_1^2 k^4)}{a_0^2 (2 + k^2)^2 (a_0 - 33 c_1 k^2)}$

	$\Gamma^{\#1}_{1}{}^{+}\alpha eta$	$\Gamma_{1}^{\#2}{}_{\alpha\beta}$	$\Gamma^{\#3}_{1^+lphaeta}$	$\Gamma_1^{\#1}_{\alpha}$	Γ ₁ -α	Γ ₁ ^{#3} α	Γ ₁ -4 _α	Γ ^{#5} ₁ α	Γ ₁ -α	$h_{1}^{\#1}{}_{\alpha}$
$\Gamma_{1}^{\#1} \dagger^{\alpha\beta}$	$\frac{1}{4} \left(-a_0 - 15 c_1 k^2 \right)$	$-\frac{a_0}{2\sqrt{2}}$	$5c_1k^2$	0	0	0	0	0	0	0
$\Gamma_{1}^{#2} \dagger^{\alpha\beta}$	$-\frac{a_0}{2\sqrt{2}}$	0	0	0	0	0	0	0	0	0
$\Gamma_{1}^{#3} \dagger^{\alpha\beta}$	$5c_1k^2$	0	$\frac{1}{4}(a_0-29c_1k^2)$	0	0	0	0	0	0	0
$\Gamma_{1}^{#1}$ † $^{\alpha}$	0	0	0	$\frac{1}{4} \left(-a_0 - 3 c_1 k^2 \right)$	$\frac{a_0}{2\sqrt{2}}$	$\frac{5}{2} \sqrt{3} c_1 k^2$	$-\frac{5}{2} \sqrt{\frac{5}{3}} c_1 k^2$	$5\sqrt{\frac{3}{2}}c_1k^2$	$-\frac{5c_1k^2}{\sqrt{3}}$	$-\frac{i a_0 k}{4 \sqrt{2}}$
$\Gamma_{1}^{#2} \uparrow^{\alpha}$	0	0	0	$\frac{a_0}{2\sqrt{2}}$	0	0	0	0	0	0
$\Gamma_{1}^{#3} \dagger^{\alpha}$	0	0	0	$\frac{5}{2} \sqrt{3} c_1 k^2$	0	$-\frac{a_0}{3}$	$\frac{1}{6}\sqrt{5}(a_0-8c_1k^2)$	$-\frac{a_0}{6\sqrt{2}}$	$\frac{1}{6} \left(-a_0 + 20 c_1 k^2 \right)$	<u>ia₀k</u> 4√6
$\Gamma_{1}^{\#4} \uparrow^{\alpha}$	0	0	0	$-\frac{5}{2} \sqrt{\frac{5}{3}} c_1 k^2$	0	$\frac{1}{6} \sqrt{5} (a_0 - 8c_1 k^2)$	$\frac{1}{3} (a_0 + 7 c_1 k^2)$	$-\frac{1}{6} \sqrt{\frac{5}{2}} (a_0 + 16 c_1 k^2)$	$-\frac{1}{6}\sqrt{5}(a_0-5c_1k^2)$	$-\frac{1}{4} \bar{l} \sqrt{\frac{5}{6}} a_0$
$\Gamma_{1}^{#5} + \alpha$	0	0	0	$5\sqrt{\frac{3}{2}}c_1k^2$	0	$-\frac{a_0}{6\sqrt{2}}$	$-\frac{1}{6} \sqrt{\frac{5}{2}} (a_0 + 16 c_1 k^2)$	<u>a₀</u> 3	$\frac{a_0 + 40 c_1 k^2}{6 \sqrt{2}}$	$\frac{i a_0 k}{4 \sqrt{3}}$
$\Gamma_{1}^{\#6} \uparrow^{\alpha}$	0	0	0	$-\frac{5c_1k^2}{\sqrt{3}}$	0	$\frac{1}{6} \left(-a_0 + 20 c_1 k^2 \right)$	$-\frac{1}{6} \sqrt{5} (a_0 - 5 c_1 k^2)$	$\frac{a_0 + 40 c_1 k^2}{6 \sqrt{2}}$	$\frac{5}{12} (a_0 - 17 c_1 k^2)$	<u>i a₀ k</u> 4 √6
$h_1^{\#1} + ^{\alpha}$	0	0	0	$\frac{i a_0 k}{4 \sqrt{2}}$	0	$-\frac{i a_0 k}{4 \sqrt{6}}$	$\frac{1}{4} \bar{i} \sqrt{\frac{5}{6}} a_0 k$	$-\frac{ia_0k}{4\sqrt{3}}$	-	0

agrangian density
$\frac{1}{2} a_0 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + \frac{1}{2} a_0 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - \frac{1}{4} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha}_{\alpha}^{\beta} +$
$a_0 h_{\chi}^{\chi} \partial_{\beta} \Gamma_{\alpha}^{\alpha\beta} - \frac{1}{2} a_0 h_{\alpha\chi} \partial_{\beta} \Gamma^{\alpha\beta\chi} + \frac{11}{2} c_1 \partial^{\alpha} \Gamma_{\delta}^{\chi\delta} \partial_{\beta} \Gamma_{\chi\alpha}^{\beta} +$
$c_1 \partial^{\alpha} \Gamma_{\chi\alpha}^{\ \beta} \partial_{\beta} \Gamma^{\chi\delta}_{\ \delta} - 19 c_1 \partial^{\alpha} \Gamma^{\chi\delta}_{\ \chi} \partial_{\beta} \Gamma_{\delta\alpha}^{\ \beta} + \frac{1}{2} a_0 h_{\beta\chi} \partial^{\chi} \Gamma^{\alpha}_{\ \alpha}^{\ \beta} -$
$c_1 \partial_{\beta} \Gamma_{\chi \delta}^{\delta} \partial^{\chi} \Gamma_{\alpha}^{\alpha \beta} - \frac{1}{2} c_1 \partial_{\beta} \Gamma_{\delta \chi}^{\delta} \partial^{\chi} \Gamma_{\alpha}^{\alpha \beta} + \frac{1}{2} c_1 \partial_{\chi} \Gamma_{\beta \delta}^{\delta} \partial^{\chi} \Gamma_{\alpha}^{\alpha \beta} -$
$c_1 \partial_\chi \Gamma^\delta_{\beta\delta} \partial^\chi \Gamma^\alpha_{\alpha}^{\beta} - \tfrac{1}{2} c_1 \partial_\chi \Gamma^\delta_{\delta\beta} \partial^\chi \Gamma^\alpha_{\alpha}^{\beta} - \tfrac{11}{2} c_1 \partial_\beta \Gamma^\delta_{\chi\delta} \partial^\chi \Gamma^{\alpha\beta}_{\alpha} +$
$\frac{9}{2} c_1 \partial_{\beta} \Gamma^{\delta}_{\chi \delta} \partial^{\chi} \Gamma^{\alpha \beta}_{\alpha} + \frac{11}{2} c_1 \partial_{\chi} \Gamma^{\delta}_{\beta \delta} \partial^{\chi} \Gamma^{\alpha \beta}_{\alpha} -$
$c_1 \partial_\chi \Gamma^{\delta}_{\beta\delta} \partial^\chi \Gamma^{\alpha\beta}_{\alpha} + c_1 \partial_\alpha \Gamma^{\delta}_{\delta} \partial^\chi \Gamma^{\alpha\beta}_{\beta} - c_1 \partial_\chi \Gamma^{\delta}_{\delta} \partial^\chi \Gamma^{\alpha\beta}_{\beta} -$
$c_1 \partial_\chi \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha\beta}^{ \delta} - \tfrac{1}{2} c_1 \partial_\beta \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha\chi}^{ \delta} - \tfrac{1}{2} c_1 \partial_\beta \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha \ \ \chi}^{ \delta} +$
$\frac{9}{2} c_1 \partial_{\chi} \Gamma^{\alpha\beta\chi} \partial_{\delta} \Gamma_{\beta\alpha}^{ \ \delta} + c_1 \partial^{\chi} \Gamma^{\alpha}_{ \ \alpha}^{ \beta} \partial_{\delta} \Gamma_{\beta}^{ \ \delta}_{ \chi} + \frac{1}{2} c_1 \partial^{\chi} \Gamma^{\alpha}_{ \ \alpha}^{ \beta} \partial_{\delta} \Gamma_{\chi\beta}^{ \ \delta} +$
$c_1 \partial^\chi \Gamma^{\alpha\beta}_{ \alpha} \partial_\delta \Gamma_{\chi\beta}^{ \delta} - \frac{1}{2} c_1 \partial_\beta \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\chi \alpha}^{ \delta} + \frac{1}{2} c_1 \partial^\chi \Gamma_{\beta\alpha}^{ \beta} \partial_\delta \Gamma_{\chi}^{ \delta\alpha} +$
${}_{1}\partial^{\chi}\Gamma^{\alpha}_{\alpha}{}^{\beta}\partial_{\delta}\Gamma^{\delta}_{\chi\beta} - \frac{1}{2}c_{1}\partial_{\beta}\Gamma^{\alpha}_{\alpha}{}^{\beta}\partial_{\delta}\Gamma^{\chi}_{\chi}{}^{\delta} + c_{1}\partial_{\beta}\Gamma^{\alpha}_{\alpha}{}^{\beta}\partial_{\delta}\Gamma^{\chi\delta}_{\chi} -$
$c_1 \partial_{\beta} \Gamma^{\alpha\beta}_{ \ \alpha} \partial_{\delta} \Gamma^{\chi\delta}_{ \ \chi} + \tfrac{1}{2} c_1 \partial_{\alpha} \Gamma_{\beta\chi\delta} \partial^{\delta} \Gamma^{\alpha\beta\chi} + c_1 \partial_{\alpha} \Gamma_{\beta\delta\chi} \partial^{\delta} \Gamma^{\alpha\beta\chi} +$
${}_{1}\partial_{\alpha}\Gamma_{\chi\beta\delta}\partial^{\delta}\Gamma^{\alpha\beta\chi} + {}_{\frac{1}{2}}c_{1}\partial_{\alpha}\Gamma_{\chi\delta\beta}\partial^{\delta}\Gamma^{\alpha\beta\chi} + c_{1}\partial_{\alpha}\Gamma_{\delta\beta\chi}\partial^{\delta}\Gamma^{\alpha\beta\chi} +$
${}_{1}\partial_{\alpha}\Gamma_{\delta\chi\beta}\partial^{\delta}\Gamma^{\alpha\beta\chi} - \frac{1}{2}c_{1}\partial_{\beta}\Gamma_{\alpha\chi\delta}\partial^{\delta}\Gamma^{\alpha\beta\chi} - \frac{1}{2}c_{1}\partial_{\beta}\Gamma_{\alpha\delta\chi}\partial^{\delta}\Gamma^{\alpha\beta\chi} -$
$c_1 \partial_{\beta} \Gamma_{\chi \delta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\chi} \Gamma_{\alpha \beta \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\chi} \Gamma_{\beta \alpha \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} +$
${}_{1}\partial_{\chi}\Gamma_{\beta\delta\alpha}\partial^{\delta}\Gamma^{\alpha\beta\chi}-c_{1}\partial_{\delta}\Gamma_{\alpha\beta\chi}\partial^{\delta}\Gamma^{\alpha\beta\chi}-c_{1}\partial_{\delta}\Gamma_{\alpha\chi\beta}\partial^{\delta}\Gamma^{\alpha\beta\chi}-$
$c_1 \partial_{\delta} \Gamma_{\beta\alpha\chi} \partial^{\delta} \Gamma^{\alpha\beta\chi} - \frac{1}{2} c_1 \partial_{\delta} \Gamma_{\beta\chi\alpha} \partial^{\delta} \Gamma^{\alpha\beta\chi} - \frac{1}{2} c_1 \partial_{\delta} \Gamma_{\chi\beta\alpha} \partial^{\delta} \Gamma^{\alpha\beta\chi} -$
$\frac{1}{2} c_1 \partial_{\beta} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma^{\alpha \chi}_{\ \chi} - \frac{1}{2} c_1 \partial^{\alpha} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma_{\beta \ \chi}^{\ \chi} + \frac{1}{2} c_1 \partial_{\beta} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma^{\chi \alpha}_{\ \chi}$

Γ ₀ -1 1	$h_{0}^{#2}$ 1	$h_{0}^{#1}$ 1	Γ ₀ ^{#4} 1	Γ ₀ ^{#3} 1	Γ ₀ ^{#2} 1	Γ ₀ ^{#1} 1	
0	0	$\frac{i a_0 k}{2 \sqrt{2}}$		$10 \sqrt{\frac{2}{3}} c_1 k^2$	0	$\frac{1}{2} \left(-a_0 + 25 c_1 k^2 \right)$	Γ ₀ +1
0	0	0	$-\frac{a_0}{2\sqrt{2}}$	$\frac{a_0}{2}$	0	0	Γ ₀ #2
0	$\frac{i a_0 k}{4}$	$-\frac{i a_0 k}{4 \sqrt{3}}$	$\begin{bmatrix} \frac{3a_0 + 46c_1 k^2}{6\sqrt{2}} & \frac{1}{6} \end{bmatrix}$	23 <i>c</i> 1 k ²	2 2	$10 \sqrt{\frac{2}{3}} c_1 k^2$	Γ ₀ ^{#3}
0	$-\frac{i a_0 k}{4 \sqrt{2}}$			$-\frac{3a_0+46c_1 k^2}{6\sqrt{2}}$			Γ ₀ #4
0	0	0	$-\frac{ia_0k}{4\sqrt{6}}$	$\frac{i a_0 k}{4 \sqrt{3}}$	0	$-\frac{ia_0k}{2\sqrt{2}}$	$h_{0+}^{#1}$
0	0	0	$\frac{i a_0 k}{4 \sqrt{2}}$	$-\frac{1}{4}ia_0k$	0	0	$h_{0+}^{#2}$
$\frac{1}{2}\left(-a_0+c_1k^2\right)$	0	0	0	0	0	0	Γ ₀ -1

[2- + "F"	$\Gamma_{2}^{#1} + \alpha \beta \chi$	$h_{2+}^{#1} \dagger^{\alpha\beta}$	$\Gamma_{2+}^{#3} + \alpha\beta$	$\Gamma_{2+}^{#2} + \alpha \beta$	$\Gamma_{2+}^{#1} + \alpha \beta$	
0				$-5\sqrt{\frac{2}{3}}c_1k^2$	$+^{\alpha\beta} \left \frac{1}{4} \left(a_0 + 11 c_1 k^2 \right) \right $	$\Gamma_{2}^{#1}{}_{lphaeta}$
0	0	$-\frac{ia_0k}{4\sqrt{3}}$	$-\frac{c_1 k^2}{6 \sqrt{2}}$	$\frac{1}{6} \left(-3 a_0 + c_1 k^2 \right)$	$-5\sqrt{\frac{2}{3}}c_1k^2$	$\Gamma_{2}^{\#2}{}_{lphaeta}$
0	0	<u> </u>	$\frac{1}{12} (3 a_0 + c_1 k^2)$	$-\frac{c_1 k^2}{6 \sqrt{2}}$	$\frac{5c_1k^2}{\sqrt{3}}$	$\Gamma_{2}^{\#3}{}_{lphaeta}$
0	0	0	$-\frac{i a_0 k}{4 \sqrt{6}}$	$\frac{i a_0 k}{4 \sqrt{3}}$	$\frac{i a_0 k}{4 \sqrt{2}}$	$h_{2}^{\#1}$ $\alpha\beta$
0	$\frac{1}{4}(a_0-c_1k^2)$	0	0	0	0	$\Gamma_{2}^{\#1}{}_{lphaeta\chi}$
$\frac{=}{4} (a_0 - 5 c_1 K^-)$	0	0	0	0	0	$\Gamma_{2^-}^{\#2} _{lphaeta\chi}$

0	$\frac{2i\sqrt{6}k}{16a_0+3a_0k^2}$	$\frac{2i\sqrt{2}}{a_0k}$	$\frac{8}{\sqrt{3} \left(16 a_0 + 3 a_0 k^2\right)}$	$\frac{4\sqrt{\frac{2}{3}}}{16a_0+3a_0k^2}$	$\frac{4\sqrt{6}}{16a_0 + 3a_0 k^2}$	0	$\Delta_{0}^{\#1}$
0	$-\frac{24 i k (3 a_0 + 197 c_1 k^2)}{a_0^2 (16 + 3 k^2)^2}$	$\frac{8i\sqrt{3}(a_0-65c_1k^2)}{a_0^2k(16+3k^2)}$	$-\frac{8\sqrt{2}(10a_0+(3a_0-394c_1)k^2)}{a_0^2(16+3k^2)^2}$	$\frac{16(19a_0 + (3a_0 + 197c_1)k^2)}{a_0^2(16 + 3k^2)^2}$	$-\frac{48 (3 a_0 + 197 c_1 k^2)}{a_0^2 (16 + 3 k^2)^2}$	$\frac{4 \sqrt{6}}{16 a_0 + 3 a_0 k^2}$	$\Delta_0^{\#2}$
0	$\frac{8ik(19a_0 + (3a_0 + 197c_1)k^2)}{a_0^2(16 + 3k^2)^2}$	$-\frac{8i(a_0-65c_1k^2)}{\sqrt{3}a_0^2k(16+3k^2)}$	$-\frac{8\sqrt{2}(22a_0+(3a_0+394c_1)k^2)}{3a_0^2(16+3k^2)^2}$	$-\frac{16(35a_0+(6a_0+197c_1)k^2)}{3a_0^2(16+3k^2)^2}$	$\frac{16(19a_0 + (3a_0 + 197c_1)k^2)}{a_0^2(16 + 3k^2)^2}$	$-\frac{4\sqrt{\frac{2}{3}}}{16a_0+3a_0k^2}$	$\Delta_0^{#3}$
0	$-\frac{4i\sqrt{2}k(10a_0+(3a_0-394c_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{8i\sqrt{\frac{2}{3}}(a_0-65c_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{32(13a_0 + (3a_0 - 197c_1)k^2)}{3a_0^2(16 + 3k^2)^2}$	$-\frac{8\sqrt{2}(22a_0+(3a_0+394c_1)k^2)}{3a_0^2(16+3k^2)^2}$	$-\frac{8\sqrt{2}(10a_0+(3a_0-394c_1)k^2)}{a_0^2(16+3k^2)^2}$	$\frac{8}{\sqrt{3} (16 a_0 + 3 a_0 k^2)}$	$\Delta_{0}^{\#4}$
0	$\frac{4\sqrt{3}(a_0.65c_1k^2)}{a_0^2(16+3k^2)}$	$\frac{4(a_0-25c_1 k^2)}{a_0^2 k^2}$	$\frac{8i\sqrt{\frac{2}{3}}(a_0-65c_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{8i(a_0-65c_1k^2)}{\sqrt{3}a_0^2k(16+3k^2)}$	$-\frac{8i\sqrt{3}(a_0.65c_1k^2)}{a_0^2k(16+3k^2)}$	$\frac{2i\sqrt{2}}{a_0k}$	${\cal T}_{0^+}^{*1}$
0	$-\frac{12k^2(3a_0+197c_1k^2)}{a_0^2(16+3k^2)^2}$	$\frac{4\sqrt{3}(a_0.65c_1k^2)}{a_0^2(16+3k^2)}$	$\frac{4i\sqrt{2}k(10a_0+(3a_0-394c_1)k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{8ik(19a_0+(3a_0+197c_1)k^2)}{a_0^2(16+3k^2)^2}$	$\frac{24ik(3a_0+197c_1k^2)}{a_0^2(16+3k^2)^2}$	$-\frac{2i\sqrt{6}k}{16a_0+3a_0k^2}$	${\mathcal T}_{0}^{\#2}$
$-\frac{2}{a_0 \cdot c_1 k^2}$	0	0	0	0	0	0	$\Delta_{0}^{\#1}$

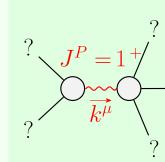
		$\Delta_{2}^{\#1}{}_{lphaeta}$	$\Delta^{\#2}_{2^+lphaeta}$	$\Delta_{2}^{\#3}{}_{lphaeta}$	${\cal T}^{\sharp 1}_{2^+lphaeta}$	$\Delta_{2}^{\#1}{}_{\alpha\beta\chi}$	$\Delta_{2}^{\#2}{}_{\alpha\beta\chi}$
	$\Delta_{2}^{\#1} \dagger^{lphaeta}$	0	$\frac{2\sqrt{\frac{2}{3}}}{a_0}$	$\frac{4}{\sqrt{3} a_0}$	4 i √2 a ₀ k	0	0
	$\Delta_{2}^{#2} \dagger^{\alpha\beta}$	$\frac{2\sqrt{\frac{2}{3}}}{a_0}$	$-\frac{8(a_0+13c_1k^2)}{3a_0^2}$	$-\frac{2\sqrt{2}(a_0+52c_1k^2)}{3a_0^2}$	$-\frac{4i(a_0+31c_1k^2)}{\sqrt{3}a_0^2k}$	0	0
	$\Delta_{2}^{#3} \dagger^{\alpha\beta}$	$\frac{4}{\sqrt{3} a_0}$	$-\frac{2\sqrt{2}(a_0+52c_1k^2)}{3a_0^2}$	$\frac{8(a_0-26c_1k^2)}{3a_0^2}$	$-\frac{4i\sqrt{\frac{2}{3}}(a_0+31c_1k^2)}{a_0^2k}$	0	0
	$\mathcal{T}_{2}^{\sharp 1}\dagger^{lphaeta}$	$-\frac{4i\sqrt{2}}{a_0k}$	$\frac{4i(a_0 + 31c_1 k^2)}{\sqrt{3} a_0^2 k}$	$\frac{4i\sqrt{\frac{2}{3}}(a_0+31c_1k^2)}{a_0^2k}$	$-\frac{8(a_0+11c_1k^2)}{a_0^2k^2}$	0	0
Δ	$\Delta_{2}^{\#1} + \alpha \beta \chi$	0	0	0	0	$\frac{4}{a_0 - c_1 k^2}$	0
Δ	$\Delta_{2}^{\#2} \dagger^{\alpha\beta\chi}$	0	0	0	0	0	$\frac{4}{a_0-5c_1k^2}$

Source constraints				
SO(3) irreps		#		
$2\mathcal{T}_{0^{+}}^{\#2} - ik\Delta_{0^{+}}^{\#2} == 0$		1		
$\Delta_{0^{+}}^{\#3} + 2 \Delta_{0^{+}}^{\#4} + 3 \Delta_{0^{+}}^{\#2} == 0$		1		
$6 \mathcal{T}_{1}^{\#1\alpha} - i k (3 \Delta_{1}^{\#2\alpha} - \Delta_{1}^{\#5\alpha} + \Delta_{1}^{\#3\alpha}) == 0$				
$2 \Delta_{1}^{\#6\alpha} + \Delta_{1}^{\#4\alpha} + 2 \Delta_{1}^{\#5\alpha} +$	- Δ ₁ ^{#3α} == 0	3		
Total #:		8		
- #1		. #1		
$\Gamma_{3}^{\#1}{}_{lphaeta\chi}$		$\Delta_{3}^{#1}$ $\alpha \beta$		
$\Gamma_{3}^{\#1} + \alpha \beta \chi = \frac{1}{2} (-a_0 - 7 c_1 k^2)$	$\Delta_3^{\#1} + \alpha \beta \chi$	2 n+7 <i>c</i> 1		
13 1 2	Δ_3 I	0+7c1		

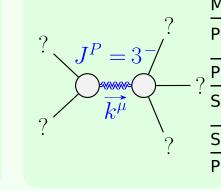
	'	
$\Gamma_{3}^{\#1}{}_{\alpha\beta\chi}$	$\Delta_3^{\#1}{}_{lphaeta\chi}$,
$\frac{3x}{2} \left[\frac{1}{2} \left(-a_0 - 7 c_1 k^2 \right) \right]$	$\Delta_{3}^{\#1} + \alpha \beta \chi = \frac{2}{a_0 + 7 c_1 k}$, 2

$\frac{1}{2} c_1 \partial_{\chi} \Gamma^{\delta}_{\beta\delta} \partial^{\chi} \Gamma^{\alpha}_{\alpha}^{\beta} - \frac{1}{2} c_1 \partial_{\chi} \Gamma^{\delta}_{\delta\beta} \partial^{\chi} \Gamma^{\alpha}_{\alpha}^{\beta} - \frac{11}{2} c_1 \partial_{\beta} \Gamma^{\delta}_{\chi\delta} \partial^{\chi} \Gamma^{\alpha\beta}_{\alpha} +$
$\frac{19}{2} c_1 \partial_{\beta} \Gamma^{\delta}_{\chi \delta} \partial^{\chi} \Gamma^{\alpha \beta}_{\alpha} + \frac{11}{2} c_1 \partial_{\chi} \Gamma^{\delta}_{\beta \delta} \partial^{\chi} \Gamma^{\alpha \beta}_{\alpha} -$
$\frac{1}{2} c_1 \partial_{\chi} \Gamma^{\delta}_{\beta\delta} \partial^{\chi} \Gamma^{\alpha\beta}_{\alpha} + c_1 \partial_{\alpha} \Gamma^{\delta}_{\chi\delta} \partial^{\chi} \Gamma^{\alpha\beta}_{\beta} - c_1 \partial_{\chi} \Gamma^{\delta}_{\alpha\delta} \partial^{\chi} \Gamma^{\alpha\beta}_{\beta} -$
$\frac{1}{2} c_1 \partial_\chi \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha\beta}^{ \ \delta} - \frac{1}{2} c_1 \partial_\beta \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha\chi}^{ \ \delta} - \frac{1}{2} c_1 \partial_\beta \Gamma^{\alpha\beta\chi} \partial_\delta \Gamma_{\alpha}^{ \ \delta} +$
$\frac{19}{2} c_1 \partial_{\chi} \Gamma^{\alpha\beta\chi} \partial_{\delta} \Gamma_{\beta\alpha}^{ \ \delta} + c_1 \partial^{\chi} \Gamma^{\alpha}_{ \ \alpha}^{ \beta} \partial_{\delta} \Gamma_{\beta \chi}^{ \ \delta} + \frac{1}{2} c_1 \partial^{\chi} \Gamma^{\alpha}_{ \ \alpha}^{ \beta} \partial_{\delta} \Gamma_{\chi\beta}^{ \ \delta} +$
$\frac{1}{2} c_1 \partial^{\chi} \Gamma^{\alpha\beta}_{ \alpha} \partial_{\delta} \Gamma_{\chi\beta}^{ \delta} - \frac{1}{2} c_1 \partial_{\beta} \Gamma^{\alpha\beta\chi}_{ \lambda} \partial_{\delta} \Gamma_{\chi\alpha}^{ \delta} + \frac{1}{2} c_1 \partial^{\chi} \Gamma_{\beta\alpha}^{ \beta} \partial_{\delta} \Gamma_{\chi}^{ \delta\alpha} +$
$c_1 \partial^{\chi} \Gamma^{\alpha}_{\alpha}{}^{\beta} \partial_{\delta} \Gamma^{\delta}_{\chi}{}^{\beta} - \frac{1}{2} c_1 \partial_{\beta} \Gamma^{\alpha}_{\alpha}{}^{\beta} \partial_{\delta} \Gamma^{\chi}_{\chi}{}^{\delta} + c_1 \partial_{\beta} \Gamma^{\alpha}_{\alpha}{}^{\beta} \partial_{\delta} \Gamma^{\chi\delta}_{\chi} -$
$\frac{1}{2} c_1 \partial_{\beta} \Gamma^{\alpha\beta}_{ \alpha} \partial_{\delta} \Gamma^{\chi\delta}_{ \chi} + \frac{1}{2} c_1 \partial_{\alpha} \Gamma_{\beta\chi\delta} \partial^{\delta} \Gamma^{\alpha\beta\chi} + c_1 \partial_{\alpha} \Gamma_{\beta\delta\chi} \partial^{\delta} \Gamma^{\alpha\beta\chi} +$
$c_1 \partial_\alpha \Gamma_{\chi\beta\delta} \partial^\delta \Gamma^{\alpha\beta\chi} + \tfrac{1}{2} c_1 \partial_\alpha \Gamma_{\chi\delta\beta} \partial^\delta \Gamma^{\alpha\beta\chi} + c_1 \partial_\alpha \Gamma_{\delta\beta\chi} \partial^\delta \Gamma^{\alpha\beta\chi} +$
$c_1 \partial_\alpha \Gamma_{\delta \chi \beta} \partial^\delta \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_\beta \Gamma_{\alpha \chi \delta} \partial^\delta \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_\beta \Gamma_{\alpha \delta \chi} \partial^\delta \Gamma^{\alpha \beta \chi} -$
$\frac{1}{2} c_1 \partial_{\beta} \Gamma_{\chi \delta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\chi} \Gamma_{\alpha \beta \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\chi} \Gamma_{\beta \alpha \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} +$
$c_1 \partial_\chi \Gamma_{\beta\delta\alpha} \partial^\delta \Gamma^{\alpha\beta\chi} - c_1 \partial_\delta \Gamma_{\alpha\beta\chi} \partial^\delta \Gamma^{\alpha\beta\chi} - c_1 \partial_\delta \Gamma_{\alpha\chi\beta} \partial^\delta \Gamma^{\alpha\beta\chi} -$
$\frac{1}{2} c_1 \partial_{\delta} \Gamma_{\beta \alpha \chi} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\delta} \Gamma_{\beta \chi \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} c_1 \partial_{\delta} \Gamma_{\chi \beta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} -$
$\frac{11}{2} c_1 \partial_{\beta} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma^{\alpha \chi}_{\ \chi} - \frac{1}{2} c_1 \partial^{\alpha} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma_{\beta \ \chi}^{\ \chi} + \frac{1}{2} c_1 \partial_{\beta} \Gamma_{\delta \alpha}^{\ \beta} \partial^{\delta} \Gamma^{\chi \alpha}_{\ \chi}$
Added source term: $h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi} \Delta_{\alpha\beta\chi}$

١٠١	$n = n - \alpha \beta^{\top}$	$\Delta_{\alpha\beta\chi}$
	Massive partic	le
	Pole residue:	$\frac{3287 a_0 + 323862 c_1}{35937 c_1 (a_0 + 66 c_1)} > 0$
?	Polarisations:	3
٠	Square mass:	$\frac{a_0}{33c_1} > 0$
	Spin:	1
	Parity:	Odd



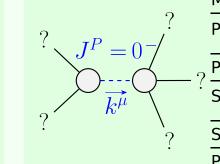
	Massive partic	le
$J^P = 1 + /$	Pole residue:	$-\frac{4164}{24389c_1}$
0 - 1	Polarisations:	3
$\overrightarrow{k^{\mu}}$	Square mass:	$\frac{a_0}{29c_1} > 0$
?	Spin:	1
·	Parity:	Even



$J^{P} = 3 - ?$ $\overline{k^{\mu}}$?	Massive particle		
	Pole residue:	$\frac{2}{7c_1}:$	
	Polarisations:	7	
	Square mass:	$-\frac{a_0}{7c_1}$	
	Spin:	3	
·	Parity:	Odd	

•)			Massive particle		
? $P = 2^{-1}$ Pole residue: $\frac{4}{5c}$? $J^P = 2 - \sqrt{k^{\mu}}$? \ IP = 2-/	$P = 2^{-1}$	Pole residue:	$\frac{4}{5c_1}$
Polarisations: 5		2	Polarisations:	5	
\rightarrow Square mass: $\frac{a_0}{a_0}$			Square mass:	$\frac{a_0}{5c_1}$	
? Spin: 2		•	?	Spin:	2
Parity: Oc			•	Parity:	Od

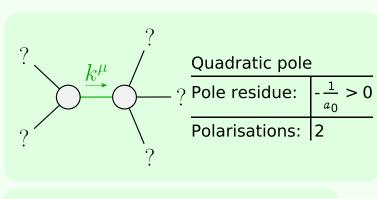
	Massive particle		
? >-/	Pole residue:	$\frac{4}{5c_1} > 0$? $I^P - 0$
	Polarisations:	5	3 - 0
	Square mass:	$\frac{a_0}{5c_1} > 0$	\vec{k}^{μ}
?	Spin:	2	:
·	Parity:	Odd	



		Massive particle		
?		Pole residue:	$-\frac{2}{c_1} >$	
4	2	Polarisations:	1	
	!	Square mass:	$\frac{a_0}{c_1} > 0$	
?		Spin:	0	
•		Parity:	Ddd	

? $J^{P} = 2^{-\frac{1}{2}}$?
?

	Massive partic	le
$TP = 2^{-1}$	Pole residue:	$\frac{4}{c_1} > 0$
2	Polarisations:	5
$\overrightarrow{k^{\mu}}$	Square mass:	$\frac{a_0}{c_1} > 0$
?	Spin:	2
•	Parity:	Odd



Unitarity conditions
(Unitarity is demonstrably impossible)