	$\Delta_{1}^{\#1}_{+}{}_{lphaeta}$	$\Delta^{\#2}_{1^+ lphaeta}$	$\Delta^{\#_3}_{1^+ lpha eta}$	$\Delta_{1}^{\#1}{}_{lpha}$	$\Delta_{1-lpha}^{\#2}$	$\Delta_{1}^{#3}{}_{\alpha}$	$\Delta_{1^-}^{\#4}{}_{lpha}$	$\Delta_{1-\alpha}^{\#5}$	$\Delta_{1^{-}\alpha}^{\#6}$	${\mathcal T}_{1-\alpha}^{\#1}$
#1 ₁ + † ^{αβ}	$\frac{4}{3} \left(-\frac{1}{a_0 + 4a_1 - 4a_2} + (a_0 - 4a_1 - 2a_2 - 3a_3 + 16a_6 - 4a_7 - 2a_9) \right) $ $(a_0^2 + (2a_1 + a_2) (2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - $ $a_9^2 - a_0 (6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9)))$	$\frac{2}{3}\sqrt{2}\left(-\frac{1}{a_0+4a_1-4a_2}+(-2a_0+8a_1+4a_2+6a_3-32a_6+8a_7+4a_9)\right)$ $(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-$ $a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$)/ $\frac{4(2a_1+a_2+a_9)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	0	0	0	0	0	0	0
$^{\sharp 2}_{\stackrel{\cdot}{}} \dagger^{\alpha\beta}$	$\sqrt{2} \left(-\frac{1}{a_0 + 4a_1 - 4a_2} + (-2a_0 + 8a_1 + 4a_2 + 6a_3 - 32a_6 + 8a_7 + 4a_9) / (a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - a_9^2 - a_0 (6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9)) \right)$	$-\frac{2}{3(a_0+4a_1-4a_2)} + (8(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9))/$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-$ $a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	$-((4\sqrt{2}(2a_1+a_2+a_9))/$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-$ $a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	0	0	0	0	0	0	0
$\frac{3}{3}$ $+^{\alpha\beta}$	$\frac{4(2a_1+a_2+a_9)}{8(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$-((4\sqrt{2}(2a_1+a_2+a_9))/$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-$ $a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	$\frac{4 \left(a_{0}-2 a_{1}-a_{2}\right)}{3 \left(a_{0}^{2}+\left(2 a_{1}+a_{2}\right) \left(2 a_{1}+a_{2}+3 a_{3}-16 a_{6}+4 a_{7}\right)-a_{9}^{2}-a_{0} \left(6 a_{1}+3 a_{2}+3 a_{3}-16 a_{6}+4 a_{7}+2 a_{9}\right)\right)}$	0	0	0	0	0	0	0
-¹ † ^α	0	0	0	$\frac{4}{3} \left(-\frac{2}{2a_0 + 2a_1 + a_2 + 3a_3} + (a_0 - 4a_1 - 2a_2 - 3a_3 + 16a_6 - 4a_7 - 2a_9) \right) $ $(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	$\frac{4\sqrt{\frac{2}{3}}\left(2a_{1}+a_{2}+a_{9}\right)}{3\left(a_{0}^{2}+\left(2a_{1}+a_{2}\right)\left(2a_{1}+a_{2}+3a_{3}-16a_{6}+4a_{7}\right)-a_{9}^{2}-a_{0}\left(6a_{1}+3a_{2}+3a_{3}-16a_{6}+4a_{7}+2a_{9}\right)\right)}$	-((4(2 $a_1 + a_2 + a_9$))/ (3 $\sqrt{3}$ ($a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - a_9^2 - a_0$ (6 $a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9$))))	0
² † ^α	0	0	0	$(4\sqrt{2}(3a_0^2 - 4a_1^2 - a_2^2 - 3a_3(3a_3 + 4(-4a_6 + a_7)) - 6a_3a_9 - a_9^2 - 2a_2(3a_3 + a_9) - 4a_1(a_2 + 3a_3 + a_9) - 6a_0(2a_1 + a_2 + a_3 - 8a_6 + 2a_7 + a_9)))/$ $(3(2a_0 + 2a_1 + a_2 + 3a_3)$ $(a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - a_9^2 - a_0(6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9)))$	$-\frac{4}{3(2a_0+2a_1+a_2+3a_3)} + (8(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9))$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-$ $a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)))$	0	0	$(8(2a_1 + a_2 + a_9))/$ $(3\sqrt{3}(a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - a_9^2 - a_0(6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9)))$	$-((4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)))/$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	0
\dagger^{α}	0	0	0	0	0	$-\frac{5}{18(a_0+4a_6-4a_7)}$	$\frac{\sqrt{5}}{18(a_0 + 4a_6 - 4a_7)}$	0	0	0
α	0	0	0	0	0	√5	$\frac{1}{-18(a_0+4a_6)+72a_7}$	0	0	0
† ^α	0	0	0	$\frac{4\sqrt{\frac{2}{3}}\left(2a_{1}+a_{2}+a_{9}\right)}{3\left(a_{0}^{2}+\left(2a_{1}+a_{2}\right)\left(2a_{1}+a_{2}+3a_{3}-16a_{6}+4a_{7}\right)-a_{9}^{2}-a_{0}\left(6a_{1}+3a_{2}+3a_{3}-16a_{6}+4a_{7}+2a_{9}\right)\right)}$	$(8(2a_1 + a_2 + a_9))/$ $(3\sqrt{3}(a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) - a_9^2 - a_0(6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9)))$	0		$\frac{8 (a_0 - 2 a_1 - a_2)}{9 (a_0^2 + (2 a_1 + a_2) (2 a_1 + a_2 + 3 a_3 - 16 a_6 + 4 a_7) - a_9^2 - a_0 (6 a_1 + 3 a_2 + 3 a_3 - 16 a_6 + 4 a_7 + 2 a_9))}$	$\frac{4\sqrt{2}(-a_0+2a_1+a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$, <u>,,,</u>
† ^α	0	0	0	$-((4(2a_1 + a_2 + a_9))/$ $(3\sqrt{3}(a_0^2 + (2a_1 + a_2)(2a_1 + a_2 + 3a_3 - 16a_6 + 4a_7) -$ $a_9^2 - a_0(6a_1 + 3a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9))))$	$-((4\sqrt{\frac{2}{3}}(2a_1+a_2+a_9)))/$ $(3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))))$	0	0	$\frac{4\sqrt{2}(-a_0+2a_1+a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	$\frac{4(a_0-2a_1-a_2)}{9(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$, <u>,,,</u>
$+^{\alpha}$	0	0	0	0	0	0	0	0	0	0

	$\Gamma_{1}^{\#1}{}_{lphaeta}$	$\Gamma_{1}^{\#2}{}_{\alpha\beta}$	$\Gamma^{\#3}_{1^+lphaeta}$	$\Gamma_{1}^{#1}{}_{\alpha}$	Γ ₁ - α	Γ ₁ ^{#3} _α	$\Gamma_{1}^{\#4}$ α	$\Gamma_{1}^{\#5}{}_{\alpha}$	Γ ₁ - α	$h_{1}^{\#1}\alpha$	Lagrangian density
$\Gamma_{1}^{#1} \dagger^{\alpha\beta}$	$\frac{1}{4} \left(-a_0 - 6 a_1 + 5 a_2 \right)$	$-\frac{a_0+2a_1-3a_2}{2\sqrt{2}}$	$\frac{1}{4} \left(-2 a_1 - a_2 - a_9 \right)$	0	0	0	0	0	0	0	$\frac{\frac{2}{3} a_1 \Gamma_{\alpha \chi}^{\chi} \Gamma_{\beta}^{\alpha\beta} + \frac{1}{3} a_2 \Gamma_{\alpha \chi}^{\chi} \Gamma_{\beta}^{\alpha\beta} + \frac{1}{2} a_3 \Gamma_{\alpha \chi}^{\chi} \Gamma_{\beta}^{\alpha\beta} - 2 a_6 \Gamma_{\alpha \chi}^{\chi} \Gamma_{\beta}^{\alpha\beta} +$
$\Gamma_{1}^{#2} + \alpha \beta$	$-\frac{a_0+2a_1-3a_2}{2\sqrt{2}}$	$\frac{1}{2}$ (-2 $a_1 + a_2$	$\frac{2a_1 + a_2 + a_9}{2\sqrt{2}}$	0	0	0	0	0	0	0	$\frac{1}{3} a_9 \Gamma_{\alpha \chi}^{\chi} \Gamma_{\beta}^{\alpha\beta} - \frac{1}{4} a_0 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{3}{2} a_1 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{4} a_2 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{4} a_3 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{4} a_4 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{4} a_5 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{4} \Gamma_{\alpha\gamma} \Gamma^{\alpha\beta\chi} - \frac{1}{4} \Gamma_{\alpha\gamma} \Gamma^{\alpha\gamma} - \frac{1}{4} \Gamma^{\alpha$
$\Gamma_{1}^{#3} + \alpha \beta$	$\frac{1}{4} \left(-2 a_1 - a_2 - a_9 \right)$	$\frac{2a_1+a_2+a_9}{2\sqrt{2}}$	$\frac{3}{4}(a_0 - 4a_1 - 2a_2 - 3a_3 + 16a_6 - 4a_7 - 2a_9)$	0	0	0	0	0	0	0	$\frac{3}{4} a_3 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} + 2 a_6 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} + a_7 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_9 \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_{12} \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_{13} \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_{14} \Gamma_{\alpha\beta\chi} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_{15} \Gamma_{\alpha\gamma} \Gamma^{\alpha\gamma} - \frac{1}{2} a_{15} \Gamma^{\alpha\gamma} - \frac{1}{2$
$\Gamma_1^{\#1} \uparrow^{\alpha}$	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	$\frac{1}{4} a_0 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_1 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} - \frac{3}{4} a_2 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} - \frac{3}{4} a_3 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} +$ $2 a_6 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} + a_7 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_9 \Gamma_{\alpha\chi\beta} \Gamma^{\alpha\beta\chi} - \frac{1}{2} a_0 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} +$
Γ ₁ ^{#2} † ^α	0	0	0	$\frac{a_0 + a_3}{2\sqrt{2}}$	$\frac{1}{4} \left(-2 a_1 - a_2 - a_3 \right)$	0	0	$-\frac{2a_1+a_2+a_9}{2\sqrt{3}}$	$\frac{2 a_1 + a_2 + a_9}{2 \sqrt{6}}$	0	$\frac{1}{4} a_1 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} - \frac{3}{8} a_2 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} + \frac{3}{8} a_3 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} - 4 a_6 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} +$
$\Gamma_1^{#3} \dagger^{\alpha}$	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	$\frac{5}{2} a_7 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\alpha\chi} - \frac{3}{2} a_0 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + \frac{1}{2} a_1 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + \frac{5}{4} a_2 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} +$
$\Gamma_1^{\#4} \uparrow^{\alpha}$	0	0	0	0	0	$\frac{1}{2}\sqrt{5}(a_0+4a_6-4a_7)$	$-\frac{a_0}{2}$ - 2 a_6 + 2 a_7	0	0	0	$\frac{3}{4} a_3 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} - 8 a_6 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + 5 a_7 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + \frac{1}{2} a_9 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} +$
$\Gamma_1^{\#5} \uparrow^{\alpha}$	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	$\frac{1}{2} (a_0 - 4 a_1 - 2 a_2 - 3 a_3 + 16 a_6 - 4 a_7 - 2 a_9)$	$\frac{-a_0 + 4a_1 + 2a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9}{2\sqrt{2}}$	0	$\frac{1}{2}a_0 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - a_1 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - \frac{1}{2}a_2 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - \frac{1}{2}a_3 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} +$
$\Gamma_1^{\#6} \uparrow^{\alpha}$	0	0	0	$\frac{2a_1 + a_2 + a_9}{4\sqrt{3}}$	$\frac{2 a_1 + a_2 + a_9}{2 \sqrt{6}}$	0	0	$\frac{-a_0 + 4a_1 + 2a_2 + 3a_3 - 16a_6 + 4a_7 + 2a_9}{2\sqrt{2}}$	$\frac{1}{4} (a_0 - 4 a_1 - 2 a_2 - 3 a_3 + 16 a_6 - 4 a_7 - 2$	a ₉) 0	$4 a_{6} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - 2 a_{7} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - \frac{1}{2} a_{9} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} + \frac{1}{2} a_{0} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - \frac{1}{3} a_{1} \Gamma_{\beta \chi}^{\alpha \beta} - \frac{1}{6} a_{2} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - \frac{1}{2} a_{3} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} + 4 a_{6} \Gamma_{\alpha}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - \frac{1}{3} a_{1} \Gamma_{\beta \chi}^{\alpha \beta} - \frac{1}{6} a_{2} \Gamma_{\beta \chi}^{\alpha \beta} - \frac{1}{2} a_{3} \Gamma_{\alpha \chi}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} + 4 a_{6} \Gamma_{\alpha \chi}^{\alpha \beta} \Gamma_{\beta \chi}^{\chi} - \frac{1}{2} a_{3} \Gamma_{\beta \chi}^{\alpha \beta} - \frac{1}{2} \alpha_{3} \Gamma_{\beta \chi}^{\alpha$
$h_1^{\#1} \uparrow^{\alpha}$	0	0	0	0	0	0	0	0	0	0	$2a_{7} \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta \chi} - \frac{1}{6}a_{9} \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta \chi} - \frac{1}{2}a_{0} \Gamma^{\alpha\beta\chi}_{\chi\beta\alpha} + \frac{5}{4}a_{1} \Gamma^{\alpha\gamma}_{\chi\beta\alpha} + \frac{5}{4}a_{1} \Gamma^{\alpha\gamma}_{\chi\beta\alpha$
	Λ ^{#1}	Λ#2	$\Lambda^{\#3}$ $\Lambda^{\#4}$ $T^{\#1}$ $T^{\#2}$ $\Lambda^{\#1}$								$\frac{1}{8}a_2 \Gamma^{\alpha\beta\chi} \Gamma_{\chi\beta\alpha} + \frac{3}{8}a_3 \Gamma^{\alpha\beta\chi} \Gamma_{\chi\beta\alpha} - 4a_6 \Gamma^{\alpha\beta\chi} \Gamma_{\chi\beta\alpha} + \frac{5}{2}a_7 \Gamma^{\alpha\beta\chi} \Gamma_{\chi\beta\alpha} +$

 $\frac{1}{2} a_9 \Gamma^{\alpha\beta\chi} \Gamma_{\chi\beta\alpha} + \frac{1}{2} a_0 \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta\chi} + \frac{1}{3} a_1 \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta\chi} + \frac{1}{6} a_2 \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta\chi} +$

 $\frac{1}{2} a_3 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - a_7 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} + \frac{1}{6} a_9 \Gamma^{\alpha}_{\alpha}^{\beta} \Gamma^{\chi}_{\beta\chi} - \frac{1}{2} a_7 \Gamma^{\alpha\beta}_{\alpha} \Gamma^{\chi}_{\beta\chi} +$

 $\frac{1}{3} a_1 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_2 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} + \frac{1}{6} a_9 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\chi\beta} - \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} \Gamma^{\chi}_{\alpha} + \frac{1}{2} a_7 \Gamma^{\alpha \beta}_{\alpha} + \frac{1}{2} a_7$

 $\frac{1}{2} a_0 \Gamma^{\alpha\beta\chi} \partial_{\beta} h_{\alpha\chi} - \frac{1}{4} a_0 \Gamma^{\alpha}_{\alpha}^{\beta} \partial_{\beta} h^{\chi}_{\chi} + \frac{1}{4} a_0 \Gamma^{\alpha\beta}_{\alpha} \partial_{\beta} h^{\chi}_{\chi} - \frac{1}{4} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha}_{\alpha}^{\beta} +$

 $\frac{1}{4} a_0 h_{\chi}^{\chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\alpha} - \frac{1}{2} a_0 h_{\alpha\chi} \partial_{\beta} \Gamma^{\alpha\beta\chi} + \frac{1}{4} a_0 h^{\alpha\beta} \partial_{\beta} \partial_{\alpha} h_{\chi}^{\chi} - \frac{1}{8} a_0 \partial_{\beta} h_{\chi}^{\chi} \partial^{\beta} h_{\alpha}^{\alpha} +$

 $\frac{1}{4} a_0 h^{\alpha\beta} \partial_{\chi} \partial^{\chi} h_{\alpha\beta} - \frac{1}{4} a_0 h^{\alpha}_{\alpha} \partial_{\chi} \partial^{\chi} h^{\beta}_{\beta} - \frac{1}{4} a_0 \partial_{\beta} h_{\alpha\chi} \partial^{\chi} h^{\alpha\beta} +$

 $\frac{1}{8} a_0 \partial_{\chi} h_{\alpha\beta} \partial^{\chi} h^{\alpha\beta} + \frac{1}{2} a_0 h_{\beta\chi} \partial^{\chi} \Gamma^{\alpha}_{\alpha}{}^{\beta} + 2 c_1 \partial_{\alpha} \Gamma_{\beta\chi\mu} \partial^{\mu} \Gamma^{\alpha\beta\chi} -$

 $c_1 \, \partial_{\alpha} \Gamma_{\mu\beta\chi} \, \partial^{\mu} \Gamma^{\alpha\beta\chi} - c_1 \, \partial_{\alpha} \Gamma_{\mu\chi\beta} \, \partial^{\mu} \Gamma^{\alpha\beta\chi} - 2 \, c_1 \, \partial_{\beta} \Gamma_{\alpha\chi\mu} \, \partial^{\mu} \Gamma^{\alpha\beta\chi} +$

 $c_1 \, \partial_\beta \Gamma_{\alpha\mu\chi} \, \partial^\mu \Gamma^{\alpha\beta\chi} - c_1 \, \partial_\beta \Gamma_{\chi\mu\alpha} \, \partial^\mu \Gamma^{\alpha\beta\chi} + c_1 \, \partial_\chi \Gamma_{\alpha\beta\mu} \, \partial^\mu \Gamma^{\alpha\beta\chi} -$

 $c_1 \, \partial_\chi \Gamma_{\beta\alpha\mu} \, \partial^\mu \Gamma^{\alpha\beta\chi} + 2 \, c_1 \, \partial_\chi \Gamma_{\beta\mu\alpha} \, \partial^\mu \Gamma^{\alpha\beta\chi} - c_1 \, \partial_\mu \Gamma_{\alpha\beta\chi} \, \partial^\mu \Gamma^{\alpha\beta\chi} +$

 $c_1 \, \partial_\mu \Gamma_{\alpha \chi \beta} \, \partial^\mu \Gamma^{\alpha \beta \chi} + c_1 \, \partial_\mu \Gamma_{\beta \alpha \chi} \, \partial^\mu \Gamma^{\alpha \beta \chi} - 2 \, c_1 \, \partial_\mu \Gamma_{\beta \chi \alpha} \, \partial^\mu \Gamma^{\alpha \beta \chi} +$

 $c_1 \partial_{\mu} \Gamma_{\chi\beta\alpha} \partial^{\mu} \Gamma^{\alpha\beta\chi} + c_1 \partial_{\chi} \partial_{\beta} h_{\alpha\mu} \partial^{\mu} \partial^{\chi} h^{\alpha\beta} - c_1 \partial_{\mu} \partial_{\beta} h_{\alpha\chi} \partial^{\mu} \partial^{\chi} h^{\alpha\beta}$

Added source term: $h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi} \Delta_{\alpha\beta\chi}$

 $2c_1\partial_{\alpha}\Gamma_{\beta\mu\chi}\partial^{\mu}\Gamma^{\alpha\beta\chi} - 2c_1\partial_{\alpha}\Gamma_{\chi\beta\mu}\partial^{\mu}\Gamma^{\alpha\beta\chi} + 2c_1\partial_{\alpha}\Gamma_{\chi\mu\beta}\partial^{\mu}\Gamma^{\alpha\beta\chi} +$

 $\frac{1}{2} a_0 \Gamma^{\alpha}_{\alpha}{}^{\beta} \partial_{\chi} h_{\beta}{}^{\chi} + \frac{1}{4} a_0 \partial^{\beta} h^{\alpha}_{\alpha} \partial_{\chi} h_{\beta}{}^{\chi} - \frac{1}{2} a_0 h^{\alpha\beta} \partial_{\chi} \partial_{\beta} h_{\alpha}{}^{\chi} + \frac{1}{4} a_0 h^{\alpha}_{\alpha} \partial_{\chi} \partial_{\beta} h^{\beta\chi} +$

_	$\Delta_0^{\#1}$	$\Delta_0^{\#2}$	$\Delta_0^{\#3}$	$\Delta_0^{#4}$	$\mathcal{T}_{0}^{\#1}$	$\mathcal{T}_{0}^{#2}$	$\Delta_0^{\#1}$
^{‡1} †	$-\frac{4}{2a_0+2a_1+a_2+3a_3}$	0	0	0	0	0	0
^{‡2} †	0	$\frac{1}{-6(a_0+4a_6)+24a_7}$	$\frac{1}{6(a_0+4a_6-4a_7)}$	0	0	0	0
^{‡3} †	0	$\frac{1}{6a_0 + 24a_6 - 24a_7}$	$\frac{1}{-6(a_0+4a_6)+24a_7}$	0	0	0	0
⁴ †	0	0	0	0	0	0	0
1 †	0	0	0	0	$\frac{4}{a_0 k^2}$	0	0
² †	0	0	0	0	0	0	0
1 †	0	0	0	0	0	0	$-\frac{2}{a_0+4(a_1-a_2+3c_1k^2)}$

	$\Gamma_{3}^{\#1}{}_{\alpha\beta\chi}$		Δ
$\Gamma_3^{#1} \dagger^{\alpha\beta\chi}$	$-3(a_0+4a_6-4a_7)$	$\Delta_{3}^{#1} \dagger^{\alpha\beta\chi}$	-3 (a ₀ +

αβχ	So
	SO
₆)+12 <i>a</i> ₇	$\mathcal{T}_{\circ}^{\#}$
	- #

Source constraint	ts
SO(3) irreps	#
$\mathcal{T}_{0^{+}}^{\#2} == 0$	1
$\Delta_{0}^{\#4} == 0$	1
$\Delta_{0^{+}}^{\#3} + 3\Delta_{0^{+}}^{\#2} == 0$	1
$\mathcal{T}_{1}^{\#1\alpha} == 0$	3
$\Delta_{1}^{\#6\alpha} + \Delta_{1}^{\#5\alpha} == 0$	3
$\Delta_{1}^{\#4\alpha} + \Delta_{1}^{\#3\alpha} == 0$	3
Total #:	12

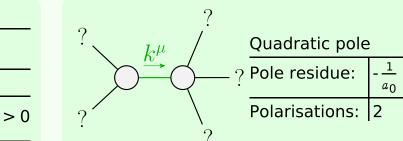
	$\Delta_{2}^{\#1}{}_{lphaeta}$	$\Delta^{\#2}_{2^+ \alpha \beta}$	$\Delta^{\#3}_{2^+lphaeta}$	${\mathcal T}_{2}^{\#1}{}_{lphaeta}$	$\Delta_{2}^{\#1}{}_{lphaeta\chi}$	$\Delta_{2^{-}lphaeta\chi}^{\#2}$
$\Delta_{2}^{\#1} \dagger^{\alpha\beta}$	$\frac{4(a_0-4a_1-2a_2-3a_3+16a_6-4a_7-2a_9)}{{a_0}^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-{a_9}^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$	0	$\frac{4(2a_1+a_2+a_9)}{\sqrt{3}(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9)}$	<u> </u>	0	0
$\Delta_{2}^{\#2} \dagger^{\alpha\beta}$	0	$\frac{1}{-3(a_0+4a_6)+12a_7}$	0	0	0	0
$\Delta_{2}^{\#3}\dagger^{\alpha\beta}$	$\frac{4 \left(2 a_{1} + a_{2} + a_{9}\right)}{\sqrt{3} \left(a_{0}^{2} + \left(2 a_{1} + a_{2}\right) \left(2 a_{1} + a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7}\right) - a_{9}^{2} - a_{0} \left(6 a_{1} + 3 a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7} + 2 a_{9}\right)\right)}$	0	$\frac{4 \left(a_{0} - 2 a_{1} - a_{2}\right)}{3 \left(a_{0}^{2} + \left(2 a_{1} + a_{2}\right) \left(2 a_{1} + a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7}\right) - a_{9}^{2} - a_{0} \left(6 a_{1} + 3 a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7} + 2 a_{9}\right)\right)}{3 \left(a_{0}^{2} + \left(2 a_{1} + a_{2}\right) \left(2 a_{1} + a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7} + 2 a_{9}\right)\right)}$	0	0	0
${\mathcal T}_2^{\sharp 1}\dagger^{lphaeta}$	0	0	0	$-\frac{8}{a_0 k^2}$	0	0
$\Delta_2^{\#1} \dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4 (a_0 - 4 a_1 - 2 a_2 - 3 a_3 + 16 a_6 - 4 a_7 - 2 a_9)}{{a_0}^2 + (2 a_1 + a_2) (2 a_1 + a_2 + 3 a_3 - 16 a_6 + 4 a_7) - a_9}^2 - a_0 (6 a_1 + 3 a_2 + 3 a_3 - 16 a_6 + 4 a_7 + 2 a_9)}$	$\frac{4 \left(2 a_{1} + a_{2} + a_{9}\right)}{\sqrt{3} \left(a_{0}^{2} + \left(2 a_{1} + a_{2}\right) \left(2 a_{1} + a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7}\right) - a_{9}^{2} - a_{0} \left(6 a_{1} + 3 a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7} + 2 a_{9}\right)\right)}$
$\Delta_2^{\#2} \dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4 \left(2 a_{1} + a_{2} + a_{9}\right)}{\sqrt{3} \left(a_{0}^{2} + \left(2 a_{1} + a_{2}\right) \left(2 a_{1} + a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7}\right) - a_{9}^{2} - a_{0} \left(6 a_{1} + 3 a_{2} + 3 a_{3} - 16 a_{6} + 4 a_{7} + 2 a_{9}\right)\right)}$	$\frac{4(a_0-2a_1-a_2)}{3(a_0^2+(2a_1+a_2)(2a_1+a_2+3a_3-16a_6+4a_7)-a_9^2-a_0(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$

	Γ ₂ [#]
	Γ ₂ ^{#2}
	Γ ₂ [#]
	$h_2^{\#_2^2}$
	Γ ₂ -1
$_0^{(6a_1+3a_2+3a_3-16a_6+4a_7+2a_9))}$	Γ ₂ -
(6a++3a++3a++2a+)	2

	$\Gamma^{\#1}_{2^+ lpha eta}$	$\Gamma^{\#2}_{2}{}^{+}\alpha\beta$	$\Gamma_{2}^{\#3}{}_{\alpha\beta}$	$h_{2}^{\#1}{}_{\alpha\beta}$	$\Gamma_{2^{-} \alpha \beta \chi}^{\# 1}$	$\Gamma_{2-\alpha\beta\chi}^{\#2}$
$^{-\#1}_{2}$ † $^{\alpha\beta}$	$\frac{1}{4} (a_0 - 2 a_1 - a_2)$	0	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	0	0	0
$_{2}^{-\#2}$ † $^{\alpha\beta}$	0	$-3(a_0+4a_6-4a_7)$	0	0	0	0
$^{+3}_{2}$ $^{+}$	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	0	$\frac{3}{4}$ (a_0 - 4 a_1 - 2 a_2 - 3 a_3 + 16 a_6 - 4 a_7 - 2 a_9)	0	0	0
$\eta_{2}^{\#1} + \alpha^{\beta}$	0	0	0	$-\frac{a_0 k^2}{8}$	0	0
$\frac{1}{2}$ † $\alpha\beta\chi$	0	0	0	0	$\frac{1}{4} (a_0 - 2 a_1 - a_2)$	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$
$\frac{\#^2}{2}$ † $\frac{\alpha\beta\chi}{2}$	0	0	0	0	$-\frac{1}{4} \sqrt{3} (2 a_1 + a_2 + a_9)$	$\frac{3}{4}$ (a_0 - 4 a_1 - 2 a_2 - 3 a_3 + 16 a_6 - 4 a_7 - 2

-#1 2 ⁺ αβ	$\Gamma^{\#2}_{2^+lphaeta}$	$\Gamma^{\#3}_{2}{}^{+}{}_{lphaeta}$	$h_2^{\#1}_{lpha eta}$	$\Gamma_{2}^{\#1}{}_{lphaeta\chi}$	$\Gamma_{2}^{\#2}_{\alpha\beta\chi}$		
$-2a_1-a_2$)	0	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	0	0	0	$\Gamma_{0}^{#1}$ †	1 4
0	$-3(a_0+4a_6-4a_7)$	0	0	0	0	$\Gamma_{0^{+}}^{#2}$ †	
$(2a_1 + a_2 + a_9)$	0	$\frac{3}{4}(a_0 - 4a_1 - 2a_2 - 3a_3 + 16a_6 - 4a_7 - 2a_9)$	0	0	0	Γ ₀ ^{#3} †	
0	0	0	$-\frac{a_0 k^2}{8}$	0	0	Γ ₀ ^{#4} †	-
0	0	0	0	$\frac{1}{4}(a_0 - 2a_1 - a_2)$	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	$h_{0+}^{#1}$ †	
0	0	0	0	$-\frac{1}{4}\sqrt{3}(2a_1+a_2+a_9)$	$\frac{3}{4}(a_0 - 4a_1 - 2a_2 - 3a_3 + 16a_6 - 4a_7 - 2a_9)$	$h_{0+}^{#2} +$	-
						$\Gamma_{0}^{\#1}$ †	

2 '		
	Massive partic	le
?. 1P _ 0-/	Pole residue:	$\frac{1}{6c_1} > 0$
J = 0	Polarisations:	1
\vec{k}^{μ}	Square mass:	$-\frac{a_0+4a_1-4a_2}{12c_1}$
?	Spin:	0



	Γ ₀ ^{#1}	Γ#2 0+	Γ#3 0+	Γ ₀ ^{#4}	$h_{0}^{#1}$	$h_{0}^{#2}$	Γ ₀ -1
Γ ₀ ^{#1} †	$\frac{1}{4}$ (-2 a_0 - 2 a_1 - a_2 - 3 a_3)	0	0	0	0	0	0
$\Gamma_{0}^{\#2}$ †	0	$-\frac{3}{2}(a_0+4a_6-4a_7)$	$\frac{3}{2}(a_0+4a_6-4a_7)$	0	0	0	0
$\Gamma_{0}^{#3}$ †	0	$\frac{3}{2}(a_0+4a_6-4a_7)$	$-\frac{3}{2}(a_0+4a_6-4a_7)$	0	0	0	0
$\Gamma_{0}^{\#4}$ †	0	0	0	0	0	0	0
$h_0^{#1}$ †	0	0	0	0	$\frac{a_0 k^2}{4}$	0	0
$h_{0}^{\#2}$ †	0	0	0	0	0	0	0
_#1	_				_		$a_0 = 12$