$\Delta_{1}^{\#1}{}_{lpha}$	$_{eta}$ $\Delta_{1}^{\#2}{}_{lphaeta}$	$\Delta_{1^{+}lphaeta}^{#3}$	$\Delta_{1}^{\#1}{}_{lpha}$	$\Delta_{1^{-}}^{\#2}{}_{lpha}$	$\Delta_{1}^{\#3}{}_{lpha}$	$\Delta_{1^{-}\alpha}^{\#4}$	$\Delta_{1^{-}}^{\#5}{}_{lpha}$	$\Delta_{1^{-}\ lpha}^{\#6}$	${\mathcal T}_{1^-}^{\sharp 1}{}_{lpha}$
$\Delta_{1+}^{\#1} \uparrow^{\alpha\beta} \boxed{0}$	$\frac{\beta}{-\frac{2\sqrt{2}}{2}}$	$-1 \cdot \alpha \beta$	ο	0	0	0	0	0	ο
$\Delta_{1+}^{\#2} + \alpha \beta = \frac{2\sqrt{2}}{a_0}$	$\frac{2(a_0^2 - 14a_0a_1k^2 - 35a_1^2k^4)}{a_0^2(a_0 - 29a_1k^2)}$	$\frac{40\sqrt{2} a_1 k^2}{a_0^2 - 29 a_0 a_1 k^2}$	0	0	0	0	0	0	0
$\Delta_{1+}^{\#3} \uparrow^{\alpha\beta} \qquad 0$	$\frac{40 \sqrt{2} a_1 k^2}{a_0^2 - 29 a_0 a_1 k^2}$	$\frac{4}{a_0-29a_1k^2}$	0	0	0	0	0	0	0
$\Delta_1^{\#1} \uparrow^{\alpha}$ 0	0	0	0	$\frac{\sqrt{2} (4+k^2)}{a_0 (2+k^2)}$	$-\frac{2 k^2}{\sqrt{3} a_0 (2+k^2)}$	0	$\frac{\sqrt{\frac{2}{3}} k^2}{a_0 (2+k^2)}$	0	$-\frac{2i\sqrt{2}k}{a_0(2+k^2)}$
$\Delta_1^{\#2} \uparrow^{\alpha}$ 0	0	0	$\frac{\sqrt{2} (4+k^2)}{a_0 (2+k^2)}$	$\frac{a_0^2 (4+k^2)^2 - 30 a_0 a_1 k^2 (4+k^2) (4+3 k^2) + a_1^2 k^4 (6416 + 7928 k^2 + 1901 k^4)}{2 a_0^2 (2+k^2)^2 (a_0 - 33 a_1 k^2)}$	$\frac{k^2 \left(a_0^2 \left(-2+k^2\right)+a_0 a_1 \left(560+302 k^2+71 k^4\right)-2 a_1^2 k^2 \left(9440+1901 k^2 \left(4+k^2\right)\right)\right)}{2 \sqrt{6} a_0^2 \left(2+k^2\right)^2 \left(a_0-33 a_1 k^2\right)}$	$-\frac{\sqrt{\frac{5}{6}} k^2 (a_0 + a_1 (40 - 31 k^2))}{2 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$\frac{k^2 (2 a_0^2 (5 + 2 k^2) - a_0 a_1 (880 + 778 k^2 + 199 k^4) + a_1^2 k^2 (9440 + 1901 k^2 (4 + k^2)))}{2 \sqrt{3} a_0^2 (2 + k^2)^2 (a_0 - 33 a_1 k^2)}$	$\frac{k^2 \left(-a_0 + a_1 \left(200 + 43  k^2\right)\right)}{\sqrt{6}  a_0 \left(2 + k^2\right) \left(a_0 - 33  a_1  k^2\right)}$	$-\frac{i k (-30 a_0 a_1 k^4 + a_0^2 (4 + k^2) + 27 a_1^2 k^4 (-28 + 3 k^2))}{a_0^2 (2 + k^2)^2 (a_0 - 33 a_1 k^2)}$
$\Delta_1^{\#3} \uparrow^{\alpha}$ 0	0	0	$-\frac{2k^2}{\sqrt{3}(2a_0+a_0k^2)}$	$\frac{k^2 (a_0^2 (-2+k^2) + a_0 a_1 (560 + 302 k^2 + 71 k^4) - 2 a_1^2 k^2 (9440 + 1901 k^2 (4+k^2)))}{2 \sqrt{6} a_0^2 (2+k^2)^2 (a_0 - 33 a_1 k^2)}$	$\frac{-a_0^2 (76+52 k^2+3 k^4)+4 a_0 a_1 k^2 (472+214 k^2+19 k^4)+4 a_1^2 k^4 (5120+7280 k^2+1901 k^4)}{12 a_0^2 (2+k^2)^2 (a_0-33 a_1 k^2)}$	$\frac{\sqrt{5} (10 a_0 + (3 a_0 - 328 a_1) k^2 - 62 a_1 k^4)}{12 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$\frac{2 a_0^2 (-2+k^2) + a_0 a_1 k^2 (472 + 934 k^2 + 289 k^4) - 2 a_1^2 k^4 (5120 + 7280 k^2 + 1901 k^4)}{6 \sqrt{2} a_0^2 (2+k^2)^2 (a_0 - 33 a_1 k^2)}$	$-\frac{2 a_0 + (3 a_0 - 56 a_1) k^2 + 86 a_1 k^4}{6 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$\frac{i  k  (54  a_1^2  k^4  (40 + 3  k^2) + a_0^2  (6 + 5  k^2) - 3  a_0  a_1  k^2  (86 + 23  k^2))}{\sqrt{6}  a_0^2  (2 + k^2)^2  (a_0 - 33  a_1  k^2)}$
$\Delta_1^{\#4} \uparrow^{\alpha} 0$	0	0	0	$-\frac{\sqrt{\frac{5}{6}} k^2 (a_0 + a_1 (40 - 31 k^2))}{2 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$\frac{\sqrt{5} (10 a_0 + k^2 (3 a_0 - 2 a_1 (164 + 31 k^2)))}{12 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$\frac{1}{12 a_0 - 396 a_1 k^2}$	$\frac{\sqrt{\frac{5}{2}} \left(-2 a_0 + a_1 k^2 \left(164 + 31 k^2\right)\right)}{6 a_0 \left(2 + k^2\right) \left(a_0 - 33 a_1 k^2\right)}$	$-\frac{\sqrt{5}}{6(a_0-33a_1k^2)}$	$-\frac{i\sqrt{\frac{5}{6}}k(a_0-51a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$
$\Delta_1^{\#5} \uparrow^{\alpha}$ 0	0	0	$\frac{\sqrt{\frac{2}{3}} k^2}{2 a_0 + a_0 k^2}$	$\frac{k^2 (2 a_0^2 (5 + 2 k^2) - a_0 a_1 (880 + 778 k^2 + 199 k^4) + a_1^2 k^2 (9440 + 1901 k^2 (4 + k^2)))}{2 \sqrt{3} a_0^2 (2 + k^2)^2 (a_0 - 33 a_1 k^2)}$	$\frac{2a_0^2 (-2+k^2) + a_0 a_1 k^2 (472 + 934 k^2 + 289 k^4) - 2a_1^2 k^4 (5120 + 7280 k^2 + 1901 k^4)}{6 \sqrt{2} a_0^2 (2+k^2)^2 (a_0 - 33 a_1 k^2)}$	$\frac{\sqrt{\frac{5}{2}} \left(-2 a_0 + a_1 k^2 \left(164 + 31 k^2\right)\right)}{6 a_0 \left(2 + k^2\right) \left(a_0 - 33 a_1 k^2\right)}$	$\frac{4a_0^2 (17 + 14k^2 + 3k^4) - 4a_0 a_1 k^2 (236 + 287k^2 + 77k^4) + a_1^2 k^4 (5120 + 7280k^2 + 1901k^4)}{6a_0^2 (2 + k^2)^2 (a_0 - 33a_1 k^2)}$	$-\frac{a_1 k^2 (28-43 k^2)+2 a_0 (7+3 k^2)}{3 \sqrt{2} a_0 (2+k^2) (a_0-33 a_1 k^2)}$	$\frac{i k (2 a_0^2 (3+k^2)-27 a_1^2 k^4 (40+3 k^2)+3 a_0 a_1 k^2 (34+7 k^2))}{\sqrt{3} a_0^2 (2+k^2)^2 (a_0-33 a_1 k^2)}$
$\Delta_1^{\#6} \uparrow^{\alpha}$ 0	0	0	0	$\frac{k^2 \left(-a_0 + a_1 \left(200 + 43 k^2\right)\right)}{\sqrt{6} \ a_0 \left(2 + k^2\right) \left(a_0 - 33 a_1 k^2\right)}$	$-\frac{2 a_0 + (3 a_0 - 56 a_1) k^2 + 86 a_1 k^4}{6 a_0 (2 + k^2) (a_0 - 33 a_1 k^2)}$	$-\frac{\sqrt{5}}{6(a_0-33a_1k^2)}$	$-\frac{a_1 k^2 (28-43 k^2)+2 a_0 (7+3 k^2)}{3 \sqrt{2} a_0 (2+k^2) (a_0-33 a_1 k^2)}$	$\frac{5}{3(a_0-33a_1k^2)}$	$-\frac{i\sqrt{\frac{2}{3}}k(a_0+57a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$
$\mathcal{T}_{1}^{\#1} \dagger^{\alpha} = 0$	0	0	$\frac{2i\sqrt{2}k}{2a_0+a_0k^2}$	$\frac{i \left(-30  a_{0}  a_{1}  k^{5} + a_{0}^{2}  k  (4 + k^{2}) + 27  a_{1}^{2}  k^{5}  (-28 + 3  k^{2})\right)}{a_{0}^{2}  (2 + k^{2})^{2}  (a_{0} - 33  a_{1}  k^{2})}$	$-\frac{i(54a_1^2k^5(40+3k^2)+a_0^2k(6+5k^2)-3a_0a_1k^3(86+23k^2))}{\sqrt{6}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{i\sqrt{\frac{5}{6}} k(a_0-51a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$	$-\frac{i(2a_0^2k(3+k^2)-27a_1^2k^5(40+3k^2)+3a_0a_1k^3(34+7k^2))}{\sqrt{3}a_0^2(2+k^2)^2(a_0-33a_1k^2)}$	$\frac{i\sqrt{\frac{2}{3}}k(a_0+57a_1k^2)}{a_0(2+k^2)(a_0-33a_1k^2)}$	$\frac{2 k^2 (a_0^2 + 30 a_0 a_1 k^2 - 459 a_1^2 k^4)}{a_0^2 (2 + k^2)^2 (a_0 - 33 a_1 k^2)}$

 ${\cal T}_{0^+}^{*1} +$ 

 $\frac{8i\sqrt{3}(a_0-65a_1k^2)}{a_0^2k(16+3k^2)}$ 

 $\frac{8i(a_0-65a_1k^2)}{\sqrt{3}a_0^2k(16+3k^2)}$ 

 $\frac{4(a_0-25a_1k^2)}{a_0^2k^2}$ 

 $\frac{4\sqrt{3}(a_0-65a_1k^2)}{a_0^2(16+3k^2)}$ 

0

0

 $\Delta_{0^{+4}}^{#4}$ †

 $-\frac{8\sqrt{2}(22a_0+(3a_0+394a_1)k^2)}{3a_0^2(16+3k^2)^2}$ 

 $\frac{32(13a_0 + (3a_0 - 197a_1)k^2)}{3a_0^2(16 + 3k^2)^2}$ 

 $\frac{4i\sqrt{2}k(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$ 

0

 $-\frac{8ik(19a_0+(3a_0+197a_1)k^2)}{a_0^2(16+3k^2)^2}$ 

0

0

0

 $\Delta_{0^{+}}^{#3}$ †

 $\Delta_{0^{+}}^{#2}$ †

 $\Delta_{0}^{#1}$ †

0

	$\Gamma_{1}^{\#1}{}_{\alpha\beta}$	$\Gamma_{1}^{\#2}{}_{\alpha\beta}$	Γ <sub>1</sub> <sup>+</sup> <sub>αβ</sub>	$\Gamma_{1-\alpha}^{\#1}$	Γ <sub>1</sub> - α	Γ <sub>1</sub> <sup>#3</sup> α	$\Gamma_{1}^{\#4}$ $\alpha$	Γ <sub>1</sub> - α	Γ# <sup>6</sup> 1 α	$h_1^{\#1}_{\alpha}$
$\Gamma_{1}^{\#1} \dagger^{\alpha\beta}$	$\frac{1}{4} \left( -a_0 - 15  a_1  k^2 \right)$	$-\frac{a_0}{2\sqrt{2}}$	$5a_1k^2$	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
$\Gamma_{1}^{#3} + \alpha \beta$	$5a_1k^2$	0	$\frac{1}{4} (a_0 - 29 a_1 k^2)$	0	0	0	0	0	0	0
$\Gamma_{1}^{#1} \uparrow^{\alpha}$	0	0	0	$\frac{1}{4} \left( -a_0 - 3 a_1 k^2 \right)$	$\frac{a_0}{2\sqrt{2}}$	$\frac{5}{2} \sqrt{3} a_1 k^2$	$-\frac{5}{2} \sqrt{\frac{5}{3}} a_1 k^2$	$5\sqrt{\frac{3}{2}}a_1k^2$	$-\frac{5a_1k^2}{\sqrt{3}}$	$-\frac{i a_0 k}{4 \sqrt{2}}$
$\Gamma_1^{#2} \uparrow^{\alpha}$	0	0	0	$\frac{a_0}{2\sqrt{2}}$	0	0	0	0	0	0
$\Gamma_1^{#3} \uparrow^{\alpha}$	0	0	0	$\frac{5}{2} \sqrt{3} a_1 k^2$	0	$-\frac{a_0}{3}$	$\frac{1}{6} \sqrt{5} (a_0 - 8 a_1 k^2)$	$-\frac{a_0}{6\sqrt{2}}$	$\frac{1}{6} \left( -a_0 + 20  a_1  k^2 \right)$	$\frac{i a_0 k}{4 \sqrt{6}}$
$\Gamma_{1}^{\#4} \uparrow^{\alpha}$	0	0	0	$-\frac{5}{2} \sqrt{\frac{5}{3}} a_1 k^2$	0	$\frac{1}{6} \sqrt{5} (a_0 - 8 a_1 k^2)$	$\frac{1}{3}(a_0 + 7 a_1 k^2)$	$-\frac{1}{6} \sqrt{\frac{5}{2}} (a_0 + 16 a_1 k^2)$	$-\frac{1}{6}\sqrt{5}(a_0-5a_1k^2)$	$-\frac{1}{4}\bar{l}\sqrt{\frac{5}{6}}a_0k$
$\Gamma_{1}^{\#5} \uparrow^{\alpha}$	0	0	0	$5\sqrt{\frac{3}{2}}a_1k^2$	0	$-\frac{a_0}{6\sqrt{2}}$	$-\frac{1}{6} \sqrt{\frac{5}{2}} (a_0 + 16 a_1 k^2)$	<u>a<sub>0</sub></u> 3	$\frac{a_0 + 40 a_1 k^2}{6 \sqrt{2}}$	$\frac{i a_0 k}{4 \sqrt{3}}$
$\Gamma_{1}^{\#6} \uparrow^{\alpha}$	0	0	0	$-\frac{5a_1k^2}{\sqrt{3}}$	0	$\frac{1}{6} \left( -a_0 + 20  a_1  k^2 \right)$	$-\frac{1}{6}\sqrt{5}(a_0-5a_1k^2)$	$\frac{a_0 + 40 a_1 k^2}{6 \sqrt{2}}$	$\frac{5}{12}$ $(a_0 - 17 a_1 k^2)$	<i>i a</i> <sub>0</sub> <i>k</i> 4 √6
$h_{1}^{#1} \dagger^{\alpha}$	0	0	0	$\frac{i a_0 k}{4 \sqrt{2}}$	0	$-\frac{i a_0 k}{4 \sqrt{6}}$	$\frac{1}{4}\bar{l}\sqrt{\frac{5}{6}}a_0k$	$-\frac{i a_0 k}{4 \sqrt{3}}$	$-\frac{i a_0 k}{4 \sqrt{6}}$	0

Lagrangian density $\frac{1}{-\frac{1}{2}} a_0 \Gamma^{\alpha\beta} \Gamma_{\beta\chi\alpha} + \frac{1}{2} a_0 \Gamma^{\alpha}_{\alpha}{}^{\beta} \Gamma_{\lambda}^{\chi} + h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta} \Delta_{\alpha\beta\chi} - \frac{1}{2} a_0 \Gamma^{\alpha\beta} \Gamma_{\beta\chi\alpha} + \frac{1}{2} a_0 \Gamma^{\alpha}_{\alpha}{}^{\beta} \Gamma_{\lambda\chi}^{\chi} + h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi} \Delta_{\alpha\beta\chi} - \frac{1}{2} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha}_{\alpha}{}^{\beta} + \frac{1}{2} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\alpha} - \frac{1}{2} a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha\beta\chi} + \frac{11}{2} a_1 \partial^{\alpha} \Gamma^{\chi\delta}_{\delta} \partial_{\beta} \Gamma_{\chi\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi\delta}_{\delta} \partial_{\beta} \Gamma^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\beta} \nabla^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} + \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} + \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}_{\delta} \partial_{\alpha} \nabla^{\alpha}_{\alpha}{}^{\beta} - \frac{1}{2} a_1 \partial_{\alpha} \Gamma^{\chi}$	Γ <sub>0</sub> -1 †	h <sub>0</sub> <sup>#2</sup> †	h <sub>0+</sub> ++	Γ <sub>0</sub> <sup>#4</sup> † <sup>1</sup>	Γ <sub>0</sub> <sup>#3</sup> † 10 <sub>1</sub>	Γ <sub>0</sub> <sup>#2</sup> †	$\Gamma_{0+}^{#1} + \frac{1}{2} (-a_0)$
gian density $\frac{\alpha\beta\chi}{\beta}\chi \Gamma_{\beta\chi\alpha} + \frac{1}{2}a_0 \Gamma^{\alpha}_{\alpha} \beta \Gamma^{\chi}_{\beta\chi}$ $\frac{\partial_{\beta}\Gamma^{\alpha}_{\alpha}\beta}{\partial_{\beta}\Gamma^{\chi}_{\alpha}} + \frac{1}{4}a_0 \Lambda^{\chi}_{\chi} \partial_{\beta}\Gamma^{\alpha\beta}_{\alpha}$ $\frac{\partial_{\beta}\Gamma^{\alpha}_{\alpha}\beta}{\partial_{\gamma}} + \frac{1}{4}a_0 \Lambda^{\chi}_{\chi} \partial_{\beta}\Gamma^{\alpha\beta}_{\alpha}$ $\frac{\partial_{\beta}\Gamma^{\alpha}_{\alpha}\beta}{\partial_{\gamma}} + \frac{1}{2}a_1 \partial_{\beta}\Gamma^{\delta}_{\delta\chi} \partial^{\chi}_{\alpha}$ $\frac{\partial_{\delta}}{\partial_{\delta}} \partial^{\chi}\Gamma^{\alpha}_{\alpha}\beta - \frac{1}{2}a_1 \partial_{\chi}\Gamma^{\delta}_{\delta\beta} \partial^{\chi}_{\gamma}$ $\frac{\partial_{\delta}}{\partial_{\delta}} \partial^{\chi}\Gamma^{\alpha\beta}_{\beta} - a_1 \partial_{\chi}\Gamma_{\alpha}^{\delta} \partial^{\chi}\Gamma^{\alpha\beta}_{\delta}$ $\frac{\partial_{\delta}}{\partial_{\delta}} \partial^{\chi}\Gamma^{\alpha\beta}_{\lambda} + \frac{1}{2}a_1 \partial_{\chi}\Gamma^{\alpha}_{\alpha}\beta \partial^{\chi}_{\gamma}$ $\frac{\partial_{\delta}}{\partial_{\delta}} \partial_{\delta}\Gamma^{\chi}_{\lambda}\beta + \frac{1}{2}a_1 \partial^{\chi}\Gamma^{\alpha}_{\alpha}\beta \partial^{\zeta}\Gamma^{\alpha\beta}_{\lambda}\beta$ $\frac{\partial_{\delta}}{\partial_{\delta}} \partial_{\delta}\Gamma^{\chi}_{\lambda}\beta + \frac{1}{2}a_1 \partial^{\chi}\Gamma^{\alpha}_{\alpha}\beta \partial^{\zeta}\Gamma^{\alpha}_{\lambda}\beta \partial^{\zeta}\Gamma^{\alpha}_{\lambda}$	0	0	$\frac{i a_0 k}{2 \sqrt{2}}$	$\frac{10a_1k^2}{\sqrt{3}}$	$\sqrt{\frac{2}{3}} a_1 k^2$	0	$\frac{1}{2}\left(-a_0+25a_1k^2\right)$
$\begin{array}{c} & & & & & \\ & & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & & & \\ & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & &$	0	0	0	$\frac{a_0}{2\sqrt{2}}$	$\frac{a_0}{2}$	0	0
Lagrangian density $\frac{1}{2}a_0 \Gamma^{\alpha\beta\chi} \Gamma_{\beta\chi\alpha} + \frac{1}{2}a_0 \Gamma^{\alpha}_{\alpha} \Gamma^{\chi}_{\beta\chi} + h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi} \Delta_{\alpha\beta\chi} - \frac{1}{2}a_0 h^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha}_{\alpha} + \frac{1}{2}a_0 \Gamma^{\alpha}_{\alpha} \Gamma^{\chi}_{\chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\alpha} - \frac{1}{2}a_0 h_{\alpha\chi} \partial_{\beta} \Gamma^{\alpha\beta\chi} + \frac{11}{2}a_1 \partial_{\chi} \Gamma_{\alpha\beta}^{\beta} \partial_{\chi} \Gamma^{\alpha}_{\alpha} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\beta} \partial_{\chi} \Gamma^{\alpha}_{\alpha} - \frac{11}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\beta} \partial_{\chi} \Gamma^{\alpha}_{\alpha} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\alpha} \partial_{\chi} \partial_{\chi} \Gamma^{\alpha}_{\alpha} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\alpha} \partial_{\chi} \partial_{\chi} \Gamma^{\alpha}_{\alpha} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\alpha} \partial_{\chi} \partial_{\chi} \Gamma^{\alpha}_{\alpha} \partial_{\chi} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha}_{\alpha} \partial_{\chi} \partial_{\chi} \Gamma^{\alpha}$	0	1 a 0 k	$-\frac{ia_0k}{4\sqrt{3}}$	$-\frac{3a_0+46a_1k^2}{6\sqrt{2}}$	3 23 a <sub>1</sub> k <sup>2</sup>	2 2	$10\sqrt{\frac{2}{3}}a_1k^2$
Lagrangian 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} + h^{\alpha\beta} \mathcal{T}_{\alpha\beta} + \Gamma^{\alpha\beta\chi} \Delta_{\alpha\beta\chi} - \frac{1}{2}a_1 \partial^{\alpha}_{\ \alpha}^{\ \alpha} \beta^{+} + \frac{1}{2}a_0 h^{\chi}_{\ \chi} \partial_{\beta} \Gamma^{\alpha}_{\ \alpha}^{\ \beta} + \frac{1}{2}a_0 h^{\chi}_{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} + \frac{1}{2}a_0 h^{\chi}_{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} + \frac{1}{2}a_1 \partial^{\alpha}_{\ \chi}^{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} + \frac{1}{2}a_0 h^{\chi}_{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta\chi} + \frac{11}{2}a_1 \partial^{\alpha}_{\ \chi}^{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} + \frac{1}{2}a_0 h^{\chi}_{\ \chi} \partial_{\beta} \Gamma^{\alpha\beta\chi}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\alpha} \Gamma^{\chi\delta}_{\ \alpha}^{\ \beta} \partial_{\beta} \Gamma^{\chi\delta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\beta} \Gamma^{\delta}_{\ \delta\chi} \partial^{\chi} \Gamma^{\alpha}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \alpha}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\delta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \beta} - \frac{1}{2}a_1 \partial_{\chi} \Gamma^{\alpha\beta}_{\ \beta} \partial^{\chi} \Gamma^{\alpha\beta}_{\ \beta}^{\ \gamma}_{\ \gamma}^{\ \gamma} + \frac{1}{2}a_1 \partial_{\mu} \Gamma^{\alpha\beta}_{\ \alpha} \partial_{\sigma} \Gamma^{\chi\delta}_{\ \gamma}^{\ \gamma}_{\ \gamma}^{\ \gamma}_{\ \beta}^{\ \gamma}_{\ \beta}^{\ \gamma}_{\ \gamma}^{\ \gamma}_{\$	0	$-\frac{ia_0k}{4\sqrt{2}}$	<u>ia0k</u> 4√6	$\frac{1}{6} (3 a_0 + 23 a_1 k^2)$	$-\frac{3a_0+46a_1k^2}{6\sqrt{2}}$	$-\frac{a_0}{2\sqrt{2}}$	$-\frac{10 a_1 k^2}{\sqrt{3}}$
$\int_{\delta}^{\delta} \partial_{\beta} \Gamma_{\chi c}$	0	0	0	$-\frac{ia_0k}{4\sqrt{6}}$	$\frac{i a_0 k}{4 \sqrt{3}}$	0	$-\frac{ia_0k}{2\sqrt{2}}$
$     \begin{bmatrix}       \chi \delta \\       \chi   \end{bmatrix}   $	0	0	0	$\frac{i a_0 k}{4 \sqrt{2}}$	$-\frac{1}{4}\bar{i}a_0k$	0	0
$\Delta_{3^{-} \alpha\beta\chi}^{\#1} = \Delta_{3^{-} \alpha\beta\chi}^{\#1} + \frac{2}{a_{0} + 7 a_{1} k^{2}}$	$\frac{1}{2} \left( -a_0 + a_1  k^2 \right)$	0	0	0	0	0	0

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	$\frac{1}{6}$ (-a	The state of the s						$\frac{1ik(3a_0)}{a_0^2(1)}$		
k <sup>2</sup> )	$-\frac{1}{6}\sqrt{1}$				$\sqrt{5} (a_0 - 5 a_1 k^2) - \frac{1}{4} \bar{i} \sqrt{\frac{5}{6}} a_0 k$		0	$\frac{4ik(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$		
	$\frac{a_0 + 40 a_1 k^2}{6 \sqrt{2}}$					$\frac{i a_0 k}{4 \sqrt{3}}$				$\frac{1}{2}$
	$\frac{5}{12}$ $(a_0 - 17 a_1 k^2)$					<u>i a (</u>	<u>0 k</u> √6			8 <i>ik</i> (
		$-\frac{ia}{4}$	<u>o k</u> √6			C	)			$19a_0+(3a)(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a)(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a)(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a_0+(3a)(3a)(3a)(3a)(3a)(3a)(3a)(3a)(3a)(3a)$
lotal #:	$2 \Delta_{1^{-6}}^{\#6\alpha} +$	$6 \mathcal{T}_1^{\#1\alpha}$	$\Delta_{0+}^{#3} + 2$	$2\mathcal{T}_{0+}^{#2}-\bar{l}$	SO(3) irreps	Source			0	$\frac{8ik(19a_0 + (3a_0 + 197a_1)k^2)}{a_0^2(16 + 3k^2)^2}$
	$2 \Delta_{1^{-}}^{\#6\alpha} + \Delta_{1^{-}}^{\#4\alpha} + 2 \Delta_{1^{-}}^{\#5\alpha} + \Delta_{1^{-}}^{\#3\alpha} == 0$	$6 \mathcal{T}_{1}^{\#1\alpha} - ik (3 \Delta_{1}^{\#2\alpha} - \Delta_{1}^{\#5\alpha} + \Delta_{1}^{\#3\alpha}) == 0 3$	$\Delta_{0+}^{*3} + 2\Delta_{0+}^{*4} + 3\Delta_{0+}^{*2} == 0$	$2\mathcal{T}_{0+}^{*2} - ik\Delta_{0+}^{*2} == 0$	reps	Source constraints			0	$\frac{4i\sqrt{2}k(10a_0+(3a_0-394a_1)k^2)}{a_0^2(16+3k^2)^2}$
		== 0 3	1	1	#				0	$\frac{4\sqrt{3}(a_0-65a_1k^2)}{a_0^2(16+3k^2)}$
									0	$-\frac{12k^2(3a_0+197a_1k^2)}{a_0^2(16+3k^2)^2}$

	$\Delta_{2}^{\#1}{}_{lphaeta}$	$\Delta^{\#2}_{2^+lphaeta}$	$\Delta^{\#3}_{2}{}^{+}_{lphaeta}$	${\cal T}^{\#1}_{2^+lphaeta}$	$\Delta_{2}^{\#1}{}_{\alpha\beta\chi}$	$\Delta_{2-\alpha\beta\chi}^{\#2}$
$\Delta_{2}^{\#1} \dagger^{\alpha\beta}$		$\frac{2\sqrt{\frac{2}{3}}}{a_0}$	$\frac{4}{\sqrt{3} a_0}$	$\frac{4i\sqrt{2}}{a_0k}$	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
$\Delta_{2}^{\#3} \dagger^{\alpha\beta}$		$-\frac{2\sqrt{2}(a_0+52a_1k^2)}{3a_0^2}$	$\frac{8(a_0-26a_1k^2)}{3a_0^2}$	$-\frac{4i\sqrt{\frac{2}{3}}(a_0+31a_1k^2)}{{a_0}^2k}$	0	0
${\mathcal T}_{\mathtt{2}^{+}}^{\mathtt{#1}}\dagger^{lphaeta}$	$-\frac{4i\sqrt{2}}{a_0k}$	$\frac{4i(a_0 + 31a_1k^2)}{\sqrt{3}a_0^2k}$	$\frac{4i\sqrt{\frac{2}{3}}(a_0+31a_1k^2)}{a_0^2k}$	$-\frac{8(a_0+11a_1k^2)}{a_0^2k^2}$	0	0
$\Delta_2^{\#1} \dagger^{\alpha\beta\chi}$	0	0	0	0	$\frac{4}{a_0 - a_1 k^2}$	0
$\Delta_2^{\#2} \uparrow^{\alpha\beta\chi}$	0	0	0	0	0	$\frac{4}{a_0-5a_1k^2}$

$\Gamma_{2}^{#2} + \alpha \beta \chi$	$\Gamma_{2^{-}}^{#1} \uparrow^{\alpha\beta\chi}$	$h_{2+}^{#1} \dagger^{\alpha\beta}$	$\Gamma_{2^{+}}^{#3} \uparrow^{\alpha\beta}$	$\Gamma_{2+}^{\#2} \uparrow^{\alpha\beta}$	$\Gamma_{2+}^{*1} \dagger^{\alpha\beta}$	
0	0	$-\frac{ia_0k}{4\sqrt{2}}$	$\frac{5 a_1 k^2}{\sqrt{3}}$	$-5\sqrt{\frac{2}{3}}a_1k^2$	$\frac{1}{2^{+}} + \alpha \beta \left[ \frac{1}{4} \left( a_0 + 11  a_1  k^2 \right) \right]$	$\Gamma_{2^{+}\alpha\beta}^{\#1}$
0	0	$-\frac{ia_0k}{4\sqrt{3}}$	$-\frac{a_1 k^2}{6 \sqrt{2}}$	$\frac{1}{6} \left( -3  a_0 + a_1  k^2 \right)$	$-5\sqrt{\frac{2}{3}}a_1k^2$	$\Gamma_{2+\alpha\beta}^{#2}$
0	0	$\frac{i a_0 k}{4 \sqrt{6}}$	$\frac{1}{12} (3 a_0 + a_1 k^2)$	$-\frac{a_1 k^2}{6 \sqrt{2}}$	$\frac{5a_1k^2}{\sqrt{3}}$	$\Gamma_{2^{+}\alpha\beta}^{\#3}$
0	0	0	$-\frac{ia_0k}{4\sqrt{6}}$	$\frac{i a_0 k}{4 \sqrt{3}}$	$\frac{i a_0 k}{4 \sqrt{2}}$	$h_{2}^{\#1}{}_{\alpha\beta}$
0	$\frac{1}{4} (a_0 - a_1 k^2)$	0	0	0	0	$\Gamma_{2^-}^{\#1} \alpha eta \chi$
$\frac{1}{2}(a_0-5a_1k^2)$	0	0	0	0	0	$\Gamma_{2}^{\#2}{}_{\alpha\beta\chi}$

$\Gamma_{3}^{\#1}{}_{lphaeta\chi}$	$\Delta_3^{\#1}{}_{\alpha\beta\chi}$
$\Gamma_3^{\#1} + \frac{\alpha\beta\chi}{2} \left[ \frac{1}{2} \left( -a_0 - 7 a_1 k^2 \right) \right]$	$\Delta_{3}^{\#1} + \alpha \beta \chi \left[ -\frac{2}{a_0 + 7 a_1 \kappa} \right]$

$\Gamma_{3}^{\#1}_{\alpha\beta\chi}$	Δ#1 αβλ	(
$\frac{1}{2} + \frac{\alpha \beta \chi}{2} \left[ \frac{1}{2} \left( -a_0 - 7 a_1 k^2 \right) \right]$	$\Delta_3^{\#1} + \alpha \beta \chi \left[ -\frac{2}{a_0 + 7 a_1} \right]$	k <sup>2</sup>

**	MassiveAnalysisOfSectorNull	

 $\frac{1}{2} a_1 \partial_{\beta} \Gamma_{\alpha \chi \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\beta} \Gamma_{\alpha \delta \chi} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\beta} \Gamma_{\chi \delta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\beta} \Gamma_{\chi \delta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \delta} \partial^{\delta} \Gamma^{\alpha \beta \chi} + a_1 \partial_{\chi} \Gamma_{\beta \delta \alpha} \partial^{\delta} \Gamma^{\alpha \beta \chi} - a_1 \partial_{\delta} \Gamma_{\alpha \beta \chi} \partial^{\delta} \Gamma_{\alpha \beta \chi} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma_{\beta \alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma^{\alpha \lambda} \partial^{\delta} \Gamma^{\alpha \beta \chi} - \frac{1}{2} a_1 \partial_{\gamma} \Gamma^{\alpha \lambda} \partial^{\delta} \Gamma^{\alpha \lambda}$