raints	#	1	1	3	3	3	3	3	3	3	5	5	33
Source constraints	SO(3) irreps	$\tau_{0+}^{\#2} == 0$	$\sigma_{0}^{\#1} == 0$	$\tau_1^{\#2\alpha} == 0$	$\tau_{1}^{\#1}{}^{\alpha} == 0$	$\sigma_{1}^{\#2\alpha} == 0$	$\sigma_{1}^{\#1}{}^{\alpha} == 0$	$\tau_{1}^{\#1}\alpha\beta=0$	$\sigma_{1}^{\#2}\alpha\beta == 0$	$\sigma_{1}^{\#1}\alpha\beta==0$	$\sigma_{2}^{\#1}\alpha\beta\chi=0$	$\sigma_{2+}^{\#1\alpha\beta} == 0$	Total #:

 $\frac{1}{3}\,\partial_{\chi}\omega^{\zeta\alpha\beta}\,\partial^{\chi}\omega_{\zeta\alpha\beta} + 4\,\beta_{1}^{2}\,\partial^{\beta}f^{\alpha}_{\ \alpha}\,\partial_{\delta}f^{\beta}_{\ \beta} - 2\,\beta_{1}^{2}\,\partial_{\beta}f^{\beta}_{\ \chi}\,\partial_{\delta}f^{\chi\delta} +$ 

 $\frac{2}{3} \partial^{\beta} \omega_{\alpha}^{\ \delta \zeta} \partial_{\delta} \omega_{\zeta\beta}^{\ \alpha} - \frac{2}{3} \partial^{\beta} \omega_{\alpha}^{\ \zeta \delta} \partial_{\delta} \omega_{\zeta\beta}^{\ \alpha} - \beta_{1}^{\ 2} \partial^{\chi} f_{\zeta}^{\ \beta} \partial^{\zeta} f_{\beta\chi}^{\ -}$ 

 $\beta_1^2 \partial^x f_{\zeta}^{\beta} \partial^\zeta f_{\chi\beta} + \beta_1^2 \partial^x f_{\delta\zeta} \partial^\zeta f_{\chi}^{\delta} - \beta_1^2 \partial^x f_{\zeta\delta} \partial^\zeta f_{\chi}^{\delta}$ 

Added source term:  $f^{\alpha\beta} \tau_{\alpha\beta} + \omega^{\alpha\beta\chi} \sigma_{\alpha\beta\chi}$ 

$\tau_{1}^{\#2}{}_{\alpha}$	0	0	0	0	0	0	0
$\mathfrak{r}_{1^{-}\alpha}^{\#1}$	0	0	0	0	0	0	0
$\sigma_{1^{ ext{-}}\alpha}^{\#2}$	0	0	0	0	0	0	0
$\sigma_{1}^{\#1}{}_{lpha}$	0	0	0	0	0	0	0
$\tau_1^{\#1}\!\!\!\!\!+\alpha\beta$	0	0	0	0	0	0	0
$\sigma_{1}^{\#2}{}_{\alpha\beta}$	0	0	0	0	0	0	0
$\sigma_{1}^{\#1}{}_{+}\alpha\beta$	0	0	0	0	0	0	0
	$^{1}_{+}$ $^{+}$	$^{2}_{+}$ $^{+}$	$^{1}_{+}$ $^{\dagger}$	$\sigma_{1^{\bar{-}}}^{\#1} +^{\alpha}$	$\sigma_1^{\#2} +^{lpha}$	$\tau_{1}^{\#1} +^{\alpha}$	$\tau_1^{\#2} +^{\alpha}$
	$\sigma_1^{\#1}$	$\sigma_1^{\#2}$	${\tau_1^{\#}}_1^1$	Р	Ь	1	1

	$\sigma_{2^{+}\alpha\beta}^{\#1}$	$\tau_{2}^{\#1}_{\alpha\beta}$	$\sigma_{2-\alpha\beta\chi}^{\#1}$
$\sigma_{2}^{\#1}\dagger^{lphaeta}$	0	0	0
$\tau_{2^{+}}^{\#1}\dagger^{\alpha\beta}$	0	$\frac{1}{2\beta_1^2 k^2}$	0
$\sigma_2^{\#1} \dagger^{\alpha\beta\chi}$	0	0	0

	$\omega_0^{\sharp 1}$	$f_{0^{+}}^{\#1}$	$f_{0^{+}}^{#2}$	$\omega_0^{\sharp 1}$
$\omega_{0}^{\#1}$ †	0	0	0	0
$f_{0}^{\#1}\dagger$	0	$-4\beta_1^2k^2$	0	0
$f_{0}^{#2} \dagger$	0	0	0	0
$\omega_{0^{-}}^{#1}$ †	0	0	0	$k^2$

*							
$f_{1^{ ext{-}}\alpha}^{\#2}$	0	0	0	0	0	0	0
$f_{1^-}^{\#1} \alpha$	0	0	0	0	0	0	0
$\omega_{1}^{\#2}{}_{\alpha}$	0	0	0	0	0	0	0
$\omega_{1^{\bar{-}}}^{\#1}{}_{\alpha}$	0	0	0	0	0	0	0
$f_{1}^{\#1}_{\alpha\beta}$	0	0	0	0	0	0	0
$\omega_{1}^{\#2}{}_{\alpha\beta}$	0	0	0	0	0	0	0
$\omega_{1}^{\#1}{}_{\alpha\beta}$	0	0	0	0	0	0	0
	$+^{\alpha\beta}$	$+^{\alpha\beta}$	$\dagger^{\alpha \beta}$	$1 + \alpha$	$^2 + ^{\alpha}$	1 + a	$^2 + ^{\alpha}$
	$0_1^{#1}$	)#2 1+	1+1	$\omega_{1^{\bar{-}}}^{\#1}$	$\omega_{1}^{\#2}$ -	$f_{1}^{\#}$	$f_{1}^{\#}$

	$\omega_{2^{+}\alpha\beta}^{\#1}$	$f_{2^+\alpha\beta}^{\#1}$	$\omega_{2}^{\#1}{}_{\alpha\beta\chi}$
$\omega_{2}^{\#1}\dagger^{lphaeta}$	0	0	0
$f_{2}^{\#1}\dagger^{\alpha\beta}$	0	$2 \beta_1^2 k^2$	0
$\omega_2^{\#1} \dagger^{\alpha\beta\chi}$	0	0	0

_	$\sigma_0^{\#1}$	$\tau_{0}^{\#1}$	$ au_0^{\#2}$	$\sigma_0^{\#1}$
$\sigma_{0^+}^{\#1}\dagger$	0	0	0	0
$\tau_{0}^{\#1}$ †	0	$-\frac{1}{4\beta_1^2 k^2}$	0	0
$\tau_{0}^{\#2}$ †	0	0	0	0
$\sigma_0^{\#1}$ †	0	0	0	$\frac{1}{k^2}$

? $k^{\mu}$ /	Quadratic pole	<u> </u>
?	Pole residue:	$\frac{1}{{\beta_1}^2} > 0$
?	Polarisations:	2

 $\frac{2}{3} \partial^{\alpha} \omega^{\beta \zeta}_{\chi} \partial_{\beta} \omega_{\zeta \alpha}^{\chi} + 2 \beta_{1}^{2} \omega_{\beta \chi}^{\chi} \partial^{\beta} f^{\alpha}_{\alpha} + 2 \beta_{1}^{2} \omega_{\beta \delta}^{\delta} \partial^{\beta} f^{\alpha}_{\alpha} - 2 \beta_{1}^{2} \partial_{\beta} f^{\chi}_{\chi} \partial^{\beta} f^{\alpha}_{\alpha} + 4 \beta_{1}^{2} f^{\alpha \beta} \partial_{\chi} \omega_{\alpha \beta}^{\chi} - 4 \beta_{1}^{2} f^{\alpha}_{\alpha} \partial_{\chi} \omega^{\beta \chi}_{\beta} - 2 \beta_{1}^{2} \partial_{\beta} f^{\alpha}_{\alpha} \partial_{\chi} \omega^{\beta \chi}_{\beta} \partial_{\chi} \omega^{\gamma \chi}_{\gamma} \partial_{\chi} \omega^{\gamma}_{\gamma} \partial_{\chi} \omega^{\gamma \chi}_{\gamma} \partial_{\chi} \omega^{\gamma \chi}_$ 

 $-2\beta_1^2 \omega_{\alpha\chi\beta} \omega^{\alpha\beta\chi} - 2\beta_1^2 \omega_{\alpha}^{\chi\delta} \omega_{\chi\delta}^{\alpha} - 2\beta_1^2 \omega_{\alpha\chi}^{\chi} \partial_{\beta} f^{\alpha\beta}.$ 

Lagrangian density

 $2 \beta_1^2 \omega_{\alpha \delta}^{\delta} \partial_{\beta} f^{\alpha\beta} - 4 \beta_1^2 f^{\alpha\beta} \partial_{\beta} \omega_{\alpha \chi}^{\chi} + 4 \beta_1^2 \partial_{\beta} \omega^{\alpha\beta}$ 

 $\frac{2}{3} \partial_{\beta} \omega_{\zeta \alpha}^{\quad X} \partial_{\chi} \omega^{\beta \zeta \alpha} - \frac{1}{3} \partial_{\beta} \omega_{\zeta \alpha}^{\quad X} \partial_{\chi} \omega^{\zeta \alpha \beta} + 4 \beta_1^{\quad 2} \omega_{\alpha \chi \beta} \partial^{\chi} f^{\alpha \beta} +$ 

 $\beta_1{}^2\,\partial_\chi f_{\beta}^{\ \delta}\,\partial^\chi f_{\delta}^{\ \beta} + \beta_1{}^2\,\partial_\chi f^{\delta}_{\ \beta}\,\partial^\chi f_{\delta}^{\ \beta} + \frac{2}{3}\,\partial_\chi \omega^{\beta\zeta\alpha}\,\partial^\chi \omega_{\zeta\alpha\beta} +$ 

Unitarity conditions  $\beta_1 < 0 \parallel \beta_1 > 0$ 

(No massive particles)