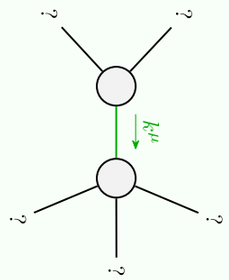
$\beta_1 > 0$



Quadratic pole	
Pole residue:	$\frac{1}{\beta_1} > 0$
Polarisations:	2

(No massive particles)

Lagrangian density

$$
\begin{aligned}
&-2\,\beta_1\,\omega_{\alpha\chi\beta}\,\omega^{\alpha\beta\chi} - 2\,\beta_1\,\omega_\alpha{}^{\chi\delta}\,\omega_{\chi\delta}{}^{\alpha} + f^{\alpha\beta}\,\tau_{\alpha\beta} + \omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} - 2\,\beta_1\,\omega_\alpha{}^{\chi}{}_{\chi}\,\partial_\beta f^{\alpha\beta} - \\
&2\,\beta_1\,\omega_\alpha{}^{\delta}{}_{\delta}\,\partial_\beta f^{\alpha\beta} - 4\,\beta_1\,f^{\alpha\beta}\,\partial_\beta\omega_\alpha{}^{\chi}{}_{\chi} + 4\,\beta_1\,\partial_\beta\omega^{\alpha\beta}{}_{\alpha} + \tfrac{2}{3}\,\alpha_3\,\partial^\alpha\omega^{\beta\zeta}{}_{\chi}\,\partial_\beta\omega_{\zeta\alpha}{}^{\chi} + \\
&2\,\beta_1\,\omega_\beta{}^{\chi}{}_{\chi}\,\partial^\beta f^\alpha{}_\alpha + 2\,\beta_1\,\omega_\beta{}^{\delta}{}_{\delta}\,\partial^\beta f^\alpha{}_\alpha - 2\,\beta_1\,\partial_\beta f^{\chi}{}_{\chi}\,\partial^\beta f^\alpha{}_\alpha + 4\,\beta_1\,f^{\alpha\beta}\,\partial_\chi\omega_\alpha{}^{\chi}{}_{\beta} - \\
&4\,\beta_1\,f^\alpha{}_\alpha\,\partial_\chi\omega^{\beta\chi}{}_{\beta} - \tfrac{2}{3}\,\alpha_3\,\partial_\beta\omega_{\zeta\alpha}{}^{\chi}\,\partial_\chi\omega^{\beta\zeta\alpha} - \tfrac{1}{3}\,\alpha_3\,\partial_\beta\omega_{\zeta\alpha}{}^{\chi}\,\partial_\chi\omega^{\zeta\alpha\beta} + 4\,\beta_1\,\omega_{\alpha\chi\beta}\,\partial^\chi f^{\alpha\beta} + \\
&\beta_1\,\partial_\chi f_\beta{}^{\delta}\,\partial^\chi f_\delta{}^{\beta} + \beta_1\,\partial_\chi f^{\delta}{}_{\beta}\,\partial^\chi f_\delta{}^{\beta} + \tfrac{2}{3}\,\alpha_3\,\partial_\chi\omega^{\beta\zeta\alpha}\,\partial^\chi\omega_{\zeta\alpha\beta} + \tfrac{1}{3}\,\alpha_3\,\partial_\chi\omega^{\zeta\alpha\beta}\,\partial^\chi\omega_{\zeta\alpha\beta} + \\
&4\,\beta_1\,\partial^\beta f^\alpha{}_\alpha\,\partial_\delta f_\beta{}^{\delta} - 2\,\beta_1\,\partial_\beta f_\chi{}^{\beta}\,\partial_\delta f^{\chi\delta} + \tfrac{2}{3}\,\alpha_3\,\partial^\beta\omega_\alpha{}^{\delta\zeta}\,\partial_\delta\omega_{\zeta\beta}{}^{\alpha} - \tfrac{2}{3}\,\alpha_3\,\partial^\beta\omega_\alpha{}^{\zeta\delta}\,\partial_\delta\omega_{\zeta\beta}{}^{\alpha} - \\
&\beta_1\,\partial^\chi f_\zeta{}^{\beta}\,\partial^\zeta f_{\beta\chi} - \beta_1\,\partial^\chi f_\zeta{}^{\beta}\,\partial^\zeta f_{\chi\beta} + \beta_1\,\partial^\chi f_{\delta\zeta}\,\partial^\zeta f^{\delta}{}_{\chi} - \beta_1\,\partial^\chi f_{\zeta\delta}\,\partial^\zeta f^{\delta}{}_{\chi}
\end{aligned}
$$

$\omega_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^+}^{\#2}{}_{\alpha\beta}$	$f_{1^+}^{\#1}{}_{\alpha\beta}$	$\omega_{1^-}^{\#1}{}_{\alpha}$	$\omega_{1^-}^{\#2}{}_{\alpha}$	$f_{1^-}^{\#1}{}_{\alpha}$	$f_{1^-}^{\#2}{}_{\alpha}$
$\omega_{1^+}^{\#1}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$\omega_{1^+}^{\#2}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$f_{1^+}^{\#1}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$\omega_{1^-}^{\#1}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$\omega_{1^-}^{\#2}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$f_{1^-}^{\#1}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$f_{1^-}^{\#2}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0

Source constraints

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

$\sigma_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^+}^{\#2}{}_{\alpha\beta}$	$\tau_{1^+}^{\#1}{}_{\alpha\beta}$	$\sigma_{1^-}^{\#1}{}_{\alpha}$	$\sigma_{1^-}^{\#2}{}_{\alpha}$	$\tau_{1^-}^{\#1}{}_{\alpha}$	$\tau_{1^-}^{\#2}{}_{\alpha}$
$\sigma_{1^+}^{\#1}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$\sigma_{1^+}^{\#2}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$\tau_{1^+}^{\#1}{}^\dagger{}^{\alpha\beta}$	0	0	0	0	0	0	0
$\sigma_{1^-}^{\#1}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$\sigma_{1^-}^{\#2}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#1}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0
$\tau_{1^-}^{\#2}{}^\dagger{}^{\alpha}$	0	0	0	0	0	0	0

$\sigma_{0^+}^{\#1}{}^\dagger$	$\tau_{0^+}^{\#1}{}^\dagger$	$\tau_{0^+}^{\#2}{}^\dagger$	$\sigma_{0^-}^{\#1}{}^\dagger$
$\sigma_{0^+}^{\#1}$	0	0	0	0
$\tau_{0^+}^{\#1}$	0	$-\frac{1}{4\,\beta_1\,k^2}$	0	0
$\tau_{0^+}^{\#2}$	0	0	0	0
$\sigma_{0^-}^{\#1}$	0	0	0	$\frac{1}{\alpha_3\,k^2}$

$\omega_{0^+}^{\#1}{}^\dagger$	$f_{0^+}^{\#1}{}^\dagger$	$f_{0^+}^{\#2}{}^\dagger$	$\omega_{0^-}^{\#1}{}^\dagger$
$\omega_{0^+}^{\#1}$	0	0	0	0
$f_{0^+}^{\#1}$	0	$-4\,\beta_1\,k^2$	0	0
$f_{0^+}^{\#2}$	0	0	0	0
$\omega_{0^-}^{\#1}$	0	0	0	$\alpha_3\,k^2$

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

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