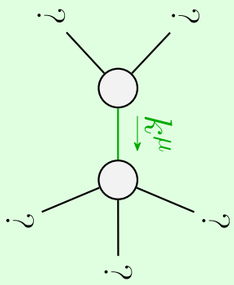

Quadratic pole	
Pole residue:	$\frac{1}{\beta_1^2} > 0$
Polarisations:	2

Unitarity conditions

$\beta_1 < 0 \parallel \beta_1 > 0$

(No massive particles)

Lagrangian density

$$-2\,\beta_1^2\,\omega_{\alpha\chi\beta}\,\omega^{\alpha\beta\chi} - 2\,\beta_1^2\,\omega_\alpha{}^{\chi\delta}\,\omega_{\chi\delta}{}^\alpha - 2\,\beta_1^2\,\omega_\alpha{}^\chi{}_\chi\,\partial_\beta f^{\alpha\beta} -$$
$$2\,\beta_1^2\,\omega_\alpha{}^\delta{}_\delta\,\partial_\beta f^{\alpha\beta} - 4\,\beta_1^2\,f^{\alpha\beta}\,\partial_\beta\omega_\alpha{}^\chi{}_\chi + 4\,\beta_1^2\,\partial_\beta\omega^{\alpha\beta}{}_\alpha +$$
$$\tfrac{2}{3}\,\partial^\alpha\omega^{\beta\zeta}{}_\chi\,\partial_\beta\omega_{\zeta\alpha}{}^\chi + 2\,\beta_1^2\,\omega_\beta{}^\chi{}_\chi\,\partial^\beta f^\alpha{}_\alpha + 2\,\beta_1^2\,\omega_\beta{}^\delta{}_\delta\,\partial^\beta f^\alpha{}_\alpha -$$
$$2\,\beta_1^2\,\partial_\beta f^\chi{}_\chi\,\partial^\beta f^\alpha{}_\alpha + 4\,\beta_1^2\,f^{\alpha\beta}\,\partial_\chi\omega_\alpha{}^\chi{}_\beta - 4\,\beta_1^2\,f^\alpha{}_\alpha\,\partial_\chi\omega^{\beta\chi}{}_\beta -$$
$$\tfrac{2}{3}\,\partial_\beta\omega_{\zeta\alpha}{}^\chi\,\partial_\chi\omega^{\beta\zeta\alpha} - \tfrac{1}{3}\,\partial_\beta\omega_{\zeta\alpha}{}^\chi\,\partial_\chi\omega^{\zeta\alpha\beta} + 4\,\beta_1^2\,\omega_{\alpha\chi\beta}\,\partial^\chi f^{\alpha\beta} +$$
$$\beta_1^2\,\partial_\chi f_\beta{}^\delta\,\partial^\chi f_\delta{}^\beta + \beta_1^2\,\partial_\chi f^\delta{}_\beta\,\partial^\chi f_\delta{}^\beta + \tfrac{2}{3}\,\partial_\chi\omega^{\beta\zeta\alpha}\,\partial^\chi\omega_{\zeta\alpha\beta} +$$
$$\tfrac{1}{3}\,\partial_\chi\omega^{\zeta\alpha\beta}\,\partial^\chi\omega_{\zeta\alpha\beta} + 4\,\beta_1^2\,\partial^\beta f^\alpha{}_\alpha\,\partial_\delta f_\beta{}^\delta - 2\,\beta_1^2\,\partial_\beta f_\chi{}^\beta\,\partial_\delta f^{\chi\delta} +$$
$$\tfrac{2}{3}\,\partial^\beta\omega_\alpha{}^{\delta\zeta}\,\partial_\delta\omega_{\zeta\beta}{}^\alpha - \tfrac{2}{3}\,\partial^\beta\omega_\alpha{}^{\zeta\delta}\,\partial_\delta\omega_{\zeta\beta}{}^\alpha - \beta_1^2\,\partial^\chi f_\zeta{}^\beta\,\partial^\zeta f_{\beta\chi} -$$
$$\beta_1^2\,\partial^\chi f_\zeta{}^\beta\,\partial^\zeta f_{\chi\beta} + \beta_1^2\,\partial^\chi f_{\delta\zeta}\,\partial^\zeta f^\delta{}_\chi - \beta_1^2\,\partial^\chi f_{\zeta\delta}\,\partial^\zeta f^\delta{}_\chi$$

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

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

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

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
$\sigma_{2^-}^{\#1\,\alpha\beta\chi} == 0$	5
$\sigma_{2^+}^{\#1\,\alpha\beta} == 0$	5
Total #:	33

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

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

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

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