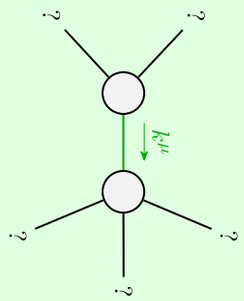
Unitarity conditions

$\lambda > 0$



Quadratic pole

Pole residue:	$\frac{1}{\lambda} > 0$
Polarisations:	2

(No massive particles)

Lagrangian density

$$-\lambda\,\omega_{\imath\kappa\theta}\,\omega^{\imath\theta\kappa} - \lambda\,\omega^{\imath\theta}{}_{\imath}\,\omega_{\theta}{}^{\kappa}{}_{\kappa} - \lambda\,\omega_{\imath}{}^{\alpha\imath}\,\omega_{\kappa\alpha}{}^{\kappa} - \lambda\,\omega_{\imath}{}^{\kappa\zeta}\,\omega_{\kappa\zeta}{}^{\imath} + f^{\alpha\beta}\,\tau_{\alpha\beta} +$$
$$\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} - 2\,\lambda\,f^{\imath\theta}\,\partial_{\theta}\omega_{\imath}{}^{\kappa}{}_{\kappa} + 2\,\lambda\,\partial_{\theta}\omega^{\imath\theta}{}_{\imath} + 2\,\lambda\,f^{\imath\theta}\,\partial_{\kappa}\omega_{\imath}{}^{\kappa}{}_{\theta} - 2\,\lambda\,f^{\imath}{}_{\imath}\,\partial_{\kappa}\omega^{\theta\kappa}{}_{\theta} -$$
$$\frac{1}{2}\,\lambda\,\partial^{\alpha}f_{\theta\kappa}\,\partial^{\kappa}f_{\alpha}{}^{\theta} - \frac{1}{2}\,\lambda\,\partial^{\alpha}f_{\kappa\theta}\,\partial^{\kappa}f_{\alpha}{}^{\theta} - \frac{1}{2}\,\lambda\,\partial^{\alpha}f^{\zeta}{}_{\kappa}\,\partial^{\kappa}f_{\alpha\zeta} + \lambda\,\omega_{\kappa\alpha}{}^{\alpha}\,\partial^{\kappa}f^{\imath}{}_{\imath} +$$
$$\lambda\,\omega_{\kappa\zeta}{}^{\zeta}\,\partial^{\kappa}f^{\imath}{}_{\imath} + 2\,\lambda\,\partial^{\alpha}f_{\kappa\alpha}\,\partial^{\kappa}f^{\imath}{}_{\imath} - \lambda\,\partial_{\kappa}f^{\zeta}{}_{\zeta}\,\partial^{\kappa}f^{\imath}{}_{\imath} + 2\,\lambda\,\omega_{\imath\kappa\theta}\,\partial^{\kappa}f^{\imath\theta} - \lambda\,\omega_{\imath\alpha}{}^{\alpha}\,\partial^{\kappa}f^{\imath}{}_{\kappa} -$$
$$\lambda\,\omega_{\imath\zeta}{}^{\zeta}\,\partial^{\kappa}f^{\imath}{}_{\kappa} + \frac{1}{2}\,\lambda\,\partial^{\alpha}f^{\zeta}{}_{\kappa}\,\partial^{\kappa}f_{\zeta\alpha} + \frac{1}{2}\,\lambda\,\partial_{\kappa}f_{\theta}{}^{\zeta}\,\partial^{\kappa}f_{\zeta}{}^{\theta} + \frac{1}{2}\,\lambda\,\partial_{\kappa}f^{\zeta}{}_{\theta}\,\partial^{\kappa}f_{\zeta}{}^{\theta} - \lambda\,\partial^{\alpha}f^{\zeta}{}_{\alpha}\,\partial^{\kappa}f_{\zeta\kappa}$$

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

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

Source constraints

SO(3) irreps	#
$\sigma_{0^-}^{\#1} == 0$	1
$\tau_{0^+}^{\#2} == 0$	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
$\sigma_{2^-}^{\#1\,\alpha\beta\chi} == 0$	5
$\sigma_{2^+}^{\#1\,\alpha\beta} == 0$	5
Total #:	34

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

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