Particle spectrograph

Wave operator and propagator
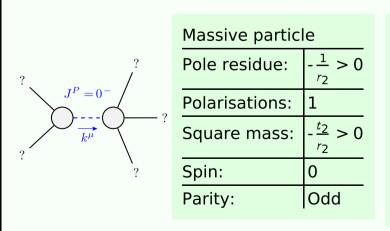

Quadratic (free) action:

$$S = \iiiint \left(\tfrac{1}{6}\left(-4\,t_3\,\omega^{\alpha i}{}_{,i}\,\kappa\,\omega^{\kappa}{}_{,\kappa} + 6\,f^{\alpha\beta}\,\tau_{\alpha\beta} + 6\,\omega^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi} + 8\,t_3\,\omega^{\kappa}{}_{\alpha\,\kappa}\,\partial_i f^{\alpha i} - \cdots\right)\right)t,\, x,\, y,\, z\, \mathrm{d}z\, \mathrm{d}y\, \mathrm{d}x\, \mathrm{d}t$$

Massive and massless spectra

Massive particle	
Pole residue:	$-\frac{1}{r_2} > 0$
Polarisations:	1
Square mass:	$-\frac{t_2}{r_2} > 0$
Spin:	0
Parity:	Odd

(No massless particles)

Unitarity conditions

$r_2 < 0\ \&\&\ t_2 > 0$