Particle spectrograph

Wave operator and propagator

SO(3) irreps	Fundamental fields	Multiplicities
$\omega_{0^+}^{\#2} == 0$	$\partial_\beta \partial_\alpha \omega^{\alpha\beta} == 0$	1
$\omega_{1^-}^{\#2\,\alpha} == 0$	$\partial_\chi \partial_\beta \partial^\alpha \omega^{\beta\chi} == \partial_\chi \partial^\chi \partial_\beta \omega^{\alpha\beta}$	3
Total expected gauge generators:		4

$$\omega_{1^+}^{\#1\,\alpha\beta} \dagger \begin{pmatrix} -\frac{4}{k^2\kappa} & 0 & 0 \\ 0 & -\frac{4}{k^2\kappa} & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{matrix} \omega_{1^+}^{\#1\,\alpha\beta} \\ \omega_{1^-}^{\#1\,\alpha} \\ \omega_{1^-}^{\#2\,\alpha} \end{matrix}$$

$$\theta_{1^+}^{\#1\,\alpha\beta} \dagger \begin{pmatrix} -\frac{k^2\kappa}{4} & 0 & 0 \\ 0 & -\frac{k^2\kappa}{4} & 0 \\ 0 & 0 & 0 \end{pmatrix} \begin{matrix} \theta_{1^+}^{\#1\,\alpha\beta} \\ \theta_{1^-}^{\#1\,\alpha} \\ \theta_{1^-}^{\#2\,\alpha} \end{matrix}$$

$$\omega_{0^+}^{\#1} \dagger \begin{pmatrix} -\frac{4}{k^2\kappa} & 0 \\ 0 & 0 \end{pmatrix} \begin{matrix} \omega_{0^+}^{\#1} \\ \omega_{0^+}^{\#2} \end{matrix}$$

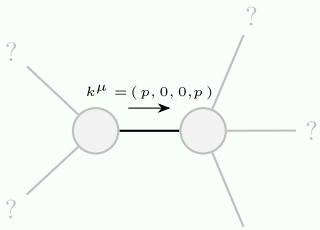
$$\omega_{2^+}^{\#1} \dagger \begin{pmatrix} -\frac{4}{k^2\kappa} \end{pmatrix} \omega_{2^+}^{\#1\,\alpha\beta}$$

$$\theta_{0^+}^{\#1} \dagger \begin{pmatrix} -\frac{k^2\kappa}{4} & 0 \\ 0 & 0 \end{pmatrix} \begin{matrix} \theta_{0^+}^{\#1} \\ \theta_{0^+}^{\#2} \end{matrix}$$

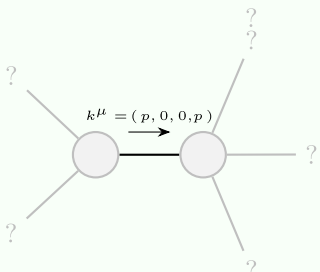
$$\theta_{2^+}^{\#1} \dagger \begin{pmatrix} -\frac{k^2\kappa}{4} \end{pmatrix} \theta_{2^+}^{\#1\,\alpha\beta}$$

$$S == \int\int\int\int (\theta^{\alpha\beta}\ \omega_{\alpha\beta} + \tfrac{1}{4}\kappa\,(\partial_\nu \theta_{\mu\rho} - \partial_\rho \theta_{\mu\nu})\,\partial^\rho \theta^{\mu\nu})[t, x, y, z]\,dz\,dy\,dx\,dt$$

Massive and massless spectra



Quadratic pole	
Pole residue:	$-\frac{1}{\kappa} > 0$
Polarisations:	6



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

(No massive particles)

Unitarity conditions

(Unitarity is demonstrably impossible)