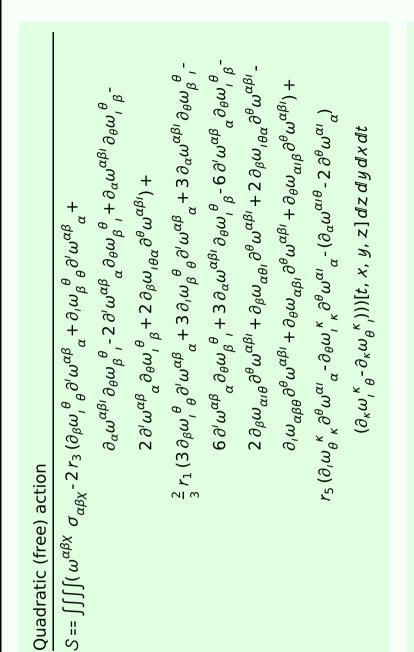
Particle spectrograph

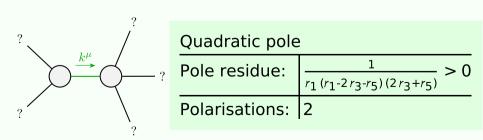
Wave operator and propagator



Source constraints	raints	
SO(3) irreps	SO(3) irreps Fundamental fields	Multiplicities
$\sigma_{0}^{\#1} == 0$	$\epsilon \eta_{\alpha\beta\chi\delta} \partial^{\delta} \sigma^{\alpha\beta\chi} == 0$	1
$\sigma_1^{\#2\alpha} == 0$	$\sigma_{1}^{\#2}{}^{\alpha} == 0$ $\partial_{\chi}\partial_{\beta}\sigma^{\alpha\beta\chi} == 0$	3
$\sigma_{1+}^{\#2}\alpha\beta=0$	$\sigma_{1}^{\#2}{}^{\alpha\beta} := 0 \qquad \partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\beta\chi\delta} + \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\alpha\beta\chi} := \partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\alpha\chi\delta}$	е
$\sigma_{2}^{\#1}\alpha\beta=0$	$\sigma_{2+}^{\#1}{}^{\alpha\beta} := 0 \left 3 \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\beta \chi \delta} + 3 \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\alpha \chi \delta} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \sigma^{\chi \delta} \right = 0$	5
	$2 \partial_{\delta} \partial^{\beta} \partial^{\alpha} \sigma^{\chi \delta}_{\chi} + 3 (\partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\alpha \chi \beta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\beta \chi \alpha})$	
Total constra	Total constraints/gauge generators:	12

$\omega_{2}^{*1} \alpha \beta \chi$ 0 0 $\kappa^{2} r_{1}$ σ_{0}^{*1} 0	0	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	0	
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\sigma_{0^-}^{\#1} +$	
$\sigma_{1^{+}lphaeta}^{\sharp 1}$ $\sigma_{1^{+}lphaeta}^{\sharp 2}$ $\sigma_{1^{-}lpha}^{\sharp 1}$ $\sigma_{1^{-}lpha}^{\sharp 2}$ $\sigma_{1^{-}lpha}^{\sharp 2}$	0	
$\sigma_{1+}^{\#1} + \alpha^{\beta} \frac{1}{k^2 (2r_3 + r_5)} = 0$ 0	F 73)	
$\sigma_{1+}^{\#2} + \alpha^{\beta}$ 0 0 0 0 $\pi_{3}^{\#4}$	$(-r_1 + r_3)$	
$\sigma_{1}^{\#1} \uparrow^{\alpha} \qquad 0 \qquad 0 \qquad \frac{1}{k^{2} (-r_{1} + 2r_{3} + r_{5})} \qquad 0$	$6k^2$ (
$\sigma_{1}^{\#2} \uparrow^{\alpha}$ 0 0 0	$\omega_{0}^{\#1}$ \dagger	
$\omega_{1^{+}\alpha\beta}^{\sharp 1}$ $\omega_{1^{+}\alpha\beta}^{\sharp 2}$ $\omega_{1^{-}\alpha}^{\sharp 1}$ ω	#2 1 α	
$\omega_{1}^{\#1} + \alpha^{\beta} k^{2} (2r_{3} + r_{5}) = 0$	0	
$\omega_{1}^{\#2} \dagger^{\alpha\beta}$ 0 0	0	
$\omega_{1}^{\#1} + {}^{\alpha}$ 0 0 $k^{2} (-r_{1} + 2r_{3} + r_{5})$	0	
$\omega_{1}^{\#2} + {}^{\alpha}$ 0 0	0	

Massive and massless spectra



(No massive particles)

Unitarity conditions

 $r_1 < 0 \&\& (r_5 < r_1 - 2 r_3 || r_5 > -2 r_3) || r_1 > 0 \&\& -2 r_3 < r_5 < r_1 - 2 r_3$