Particle spectrograph

Wave operator and propagator

$$\mathcal{S} = \iiiint \left(f^{\alpha\beta} \ \tau_{\alpha\beta} + \frac{1}{2} t_1 \left(2\,\partial_\beta f^\mu{}_\mu\,\partial^\beta f^\alpha{}_\alpha + 2\,\partial_\beta f^{\alpha\beta}\,\partial_\mu f_\alpha{}^\mu - 4\,\partial^\beta f^\alpha{}_\alpha\,\partial_\mu f_\beta{}^\mu + 2\,\partial_\alpha f_{\beta\mu}\,\partial^\mu f^{\alpha\beta} + \partial_\alpha f_{\mu\beta}\,\partial^\mu f^{\alpha\beta} - \partial_\beta f_{\alpha\mu}\,\partial^\mu f^{\alpha\beta} - \partial_\mu f_{\alpha\beta}\,\partial^\mu f^{\alpha\beta} - \partial_\mu f_{\beta\alpha}\,\partial^\mu f^{\alpha\beta} \right) \right)[t,x,y,z]\,dz\,dy\,dx\,dt$$

Spin-parity form	Covariant form	Multiplicities
$0^+\,\tau^{\#2} == 0$	$\partial_\beta\partial_\alpha\tau^{\alpha\beta} == 0$	1
$1^-\,\tau^{\#2}_\alpha == 0$	$\partial_\chi\partial_\beta\partial_\alpha\tau^{\beta\chi} == \partial_\chi\partial_\beta\tau^{\beta\alpha}$	3
$1^-\,\tau^{\#1}_\alpha == 0$	$\partial_\chi\partial_\beta\partial_\alpha\tau^{\beta\chi} == \partial_\chi\partial_\beta\tau^{\beta\alpha}$	3
$1^+\,\tau^{\#1}_{\alpha\beta} == 0$	$\partial_\chi\partial_\alpha\tau^{\beta\chi} + \partial_\chi\partial_\beta\tau^{\chi\alpha} == \partial_\chi\partial_\alpha\tau^{\chi\beta} + \partial_\chi\partial_\beta\tau^{\alpha\chi}$	3
Total expected gauge generators:		10

#1 $2^+ f_{\alpha\beta}$ / #1 $2^+ \tau_{\alpha\beta}$

	#1 $2^+ f_{\alpha\beta}$		#1 $2^+ \tau_{\alpha\beta}$
#1 $2^+ f\dagger^{\alpha\beta}$	$-k^2 t_1$	#1 $2^+ \tau\dagger^{\alpha\beta}$	$-\dfrac{1}{k^2 t_1}$

	#1 $1^+ f_{\alpha\beta}$	#1 $1^- f_\alpha$	#2 $1^- f_\alpha$
#1 $1^+ f\dagger^{\alpha\beta}$	0	0	0
#1 $1^- f\dagger^{\alpha}$	0	0	0
#2 $1^- f\dagger^{\alpha}$	0	0	0

	#1 $1^+ \tau_{\alpha\beta}$	#1 $1^- \tau_\alpha$	#2 $1^- \tau_\alpha$
#1 $1^+ \tau\dagger^{\alpha\beta}$	0	0	0
#1 $1^- \tau\dagger^{\alpha}$	0	0	0
#2 $1^- \tau\dagger^{\alpha}$	0	0	0

	#1 $0^+ \tau$	#2 $0^+ \tau$
#1 $0^+ \tau\dagger$	$\dfrac{1}{2 k^2 t_1}$	0
#2 $0^+ \tau\dagger$	0	0

	#1 $0^+ f$	#2 $0^+ f$
#1 $0^+ f\dagger$	$2 k^2 t_1$	0
#2 $0^+ f\dagger$	0	0

Massive and massless spectra

	Massless particle	
Polarisations:	2	
Pole residue:	$-\dfrac{1}{t_1} > 0$	

$k^\mu \equiv (p, 0, 0, p)$

(No particles)

Unitarity conditions