PSALTer results panel

$$\mathcal{S} == \int\int\int\int (\rho\,\varphi + h^{\alpha\beta}\,\mathcal{T}_{\alpha\beta} + \frac{1}{2}\,\alpha_{2}\,\partial_\alpha\varphi\,\partial^\alpha\varphi + \frac{1}{8}\,\alpha_{1}\,(24\,(1+\varphi)\,\partial_\alpha\partial^\alpha\varphi - 8\,\partial_\alpha h^\beta{}_\beta\,\partial^\alpha\varphi + 8\,\partial^\alpha\varphi\,\partial_\beta h_\alpha{}^\beta - 4\,\partial_\beta\partial_\alpha h^{\alpha\beta} + 4\,\partial_\beta\partial^\beta h^\alpha{}_\alpha - \partial_\beta h^\chi{}_\chi\,\partial^\beta h^\alpha{}_\alpha + 2\,\partial^\beta h^\alpha{}_\alpha\,\partial_\chi h_\beta{}^\chi - 2\,\partial_\beta h_{\alpha\chi}\,\partial^\chi h^{\alpha\beta} + \partial_\chi h_{\alpha\beta}\,\partial^\chi h^{\alpha\beta}) - \alpha_{6}\,(8\,\partial_\beta\partial_\alpha h^\chi{}_\chi\,\partial^\beta\partial^\alpha\varphi + 16\,\partial_\beta\partial_\alpha\varphi\,\partial^\beta\partial^\alpha\varphi - 8\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\alpha h_\beta{}^\chi - 8\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\beta h_\alpha{}^\chi + 8\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial^\chi h_{\alpha\beta} + 8\,\partial_\alpha\partial^\alpha\varphi\,(4\,\partial_\beta\partial^\beta\varphi - \partial_\chi\partial_\beta h^{\beta\chi} + \partial_\chi\partial^\chi h^\beta{}_\beta) + \partial_\chi\partial_\beta h^\delta{}_\delta\,\partial^\chi\partial^\beta h^\alpha{}_\alpha + 2\,\partial^\chi\partial_\alpha h^{\alpha\beta}\,\partial_\delta\partial_\beta h_\chi{}^\delta + 2\,\partial^\chi\partial_\alpha h^{\alpha\beta}\,\partial_\delta\partial_\chi h_\beta{}^\delta - 4\,\partial^\chi\partial^\beta h^\alpha{}_\alpha\,\partial_\delta\partial_\chi h_\beta{}^\delta + \partial_\chi\partial^\chi h^{\alpha\beta}\,\partial_\delta\partial^\delta h_{\alpha\beta} - 4\,\partial^\chi\partial_\alpha h^{\alpha\beta}\,\partial_\delta\partial^\delta h_{\beta\chi} + 2\,\partial^\chi\partial^\beta h^\alpha{}_\alpha\,\partial_\delta\partial^\delta h_{\beta\chi}) + \alpha_{5}\,(12\,\partial_\alpha\partial^\alpha\varphi\,(3\,\partial_\beta\partial^\beta\varphi - \partial_\chi\partial_\beta h^{\beta\chi} + \partial_\chi\partial^\chi h^\beta{}_\beta) + \partial_\beta\partial_\alpha h^{\alpha\beta}\,\partial_\delta\partial_\chi h^{\chi\delta} + \partial_\beta\partial^\beta h^\alpha{}_\alpha\,(-2\,\partial_\delta\partial_\chi h^{\chi\delta} + \partial_\delta\partial^\delta h^\chi{}_\chi)) + \alpha_{7}\,(4\,\partial_\alpha\partial^\alpha\varphi\,\partial_\beta\partial^\beta\varphi + 4\,\partial_\beta\partial_\alpha h^\chi{}_\chi\,\partial^\beta\partial^\alpha\varphi + 8\,\partial_\beta\partial_\alpha\varphi\,\partial^\beta\partial^\alpha\varphi - 4\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\alpha h_\beta{}^\chi - 4\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\beta h_\alpha{}^\chi + 4\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial^\chi h_{\alpha\beta} + \partial_\beta\partial_\alpha h_{\chi\delta}\,\partial^\delta\partial^\chi h^{\alpha\beta} - \partial_\chi\partial_\beta h_{\alpha\delta}\,\partial^\delta\partial^\chi h^{\alpha\beta} - \partial_\delta\partial_\beta h_{\alpha\chi}\,\partial^\delta\partial^\chi h^{\alpha\beta} + \partial_\delta\partial_\chi h_{\alpha\beta}\,\partial^\delta\partial^\chi h^{\alpha\beta}))[t,\,x,\,y,\,z]\,dz\,dy\,dx\,dt$$

Wave operator

	$0^+_{\cdot}\varphi$	$0^+_{\cdot}h^\perp$	$0^+_{\cdot}h^\parallel$	$1^-_{\cdot}h^\perp{}_\alpha$	$2^+_{\cdot}h^\parallel{}_{\alpha\beta}$
$0^+_{\cdot}\varphi\,\dagger$	$\frac{1}{2}\,k^2\,(\alpha_{2} + 24\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^2)$	0	$-\frac{1}{2}\,\sqrt{3}\,k^2\,(\alpha_{1} - 4\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^2)$		
$0^+_{\cdot}h^\perp\,\dagger$	0	0	0		
$0^+_{\cdot}h^\parallel\,\dagger$	$-\frac{1}{2}\,\sqrt{3}\,k^2\,(\alpha_{1} - 4\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^2)$	0	$-\frac{\alpha_{1}\,k^2}{4} + (3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^4$		
$1^-_{\cdot}h^\perp\,\dagger^\alpha$				0	
$2^+_{\cdot}h^\parallel\,\dagger^{\alpha\beta}$					$\frac{\alpha_{1}\,k^2}{8} + (-\alpha_{6} + \alpha_{7})\,k^4$

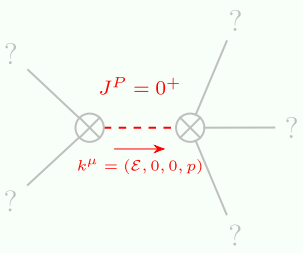
Saturated propagator

	$0^+_{\cdot}\rho$	$0^+_{\cdot}\mathcal{T}^\perp$	$0^+_{\cdot}\mathcal{T}^\parallel$	$1^-_{\cdot}\mathcal{T}^\perp{}_\alpha$	$2^+_{\cdot}\mathcal{T}^\parallel{}_{\alpha\beta}$
$0^+_{\cdot}\rho\,\dagger$	$\frac{2}{(6\,\alpha_{1} + \alpha_{2})\,k^2}$	0	$-\frac{4\,\sqrt{3}}{(6\,\alpha_{1} + \alpha_{2})\,k^2}$		
$0^+_{\cdot}\mathcal{T}^\perp\,\dagger$	0	0	0		
$0^+_{\cdot}\mathcal{T}^\parallel\,\dagger$	$-\frac{4\,\sqrt{3}}{(6\,\alpha_{1} + \alpha_{2})\,k^2}$	0	$-\frac{4\,(\alpha_{2} + 24\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^2)}{(6\,\alpha_{1} + \alpha_{2})\,k^2\,(\alpha_{1} - 4\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})\,k^2)}$		
$1^-_{\cdot}\mathcal{T}^\perp\,\dagger^\alpha$				0	
$2^+_{\cdot}\mathcal{T}^\parallel\,\dagger^{\alpha\beta}$					$\frac{8}{k^2\,(\alpha_{1} + 8\,(-\alpha_{6} + \alpha_{7})\,k^2)}$

Source constraints

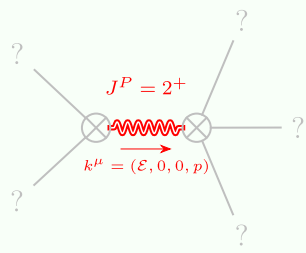
Spin-parity form	Covariant form	Multiplicities
$0^+_{\cdot}\mathcal{T}^\perp == 0$	$\partial_\beta\partial_\alpha\mathcal{T}^{\alpha\beta} == 0$	1
$1^-_{\cdot}\mathcal{T}^{\perp\alpha} == 0$	$\partial_\chi\partial_\beta\partial^\alpha\mathcal{T}^{\beta\chi} == \partial_\chi\partial^\chi\partial_\beta\mathcal{T}^{\alpha\beta}$	3
Total expected gauge generators:		4

Massive spectrum



Massive particle

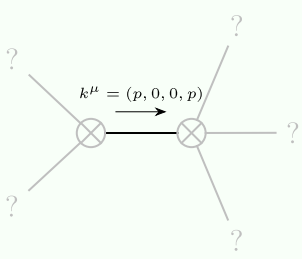
Pole residue:	$\frac{4}{\alpha_{1}} > 0$
Square mass:	$\frac{\alpha_{1}}{4\,(3\,\alpha_{5} - 4\,\alpha_{6} + \alpha_{7})} > 0$
Spin:	0
Parity:	Even



Massive particle

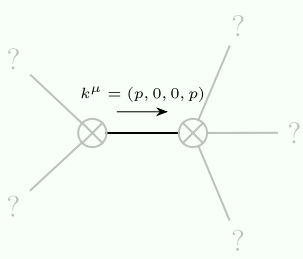
Pole residue:	$-\frac{8}{\alpha_{1}} > 0$
Square mass:	$\frac{\alpha_{1}}{8\,\alpha_{6} - 8\,\alpha_{7}} > 0$
Spin:	2
Parity:	Even

Massless spectrum



Massless particle

Pole residue:	$\frac{p^2}{\alpha_{1}} > 0$
Polarisations:	2



Massless particle

Pole residue:	$\frac{1 + 8\,p^2}{6\,\alpha_{1} + \alpha_{2}} > 0$
Polarisations:	1

Unitarity conditions

(Demonstrably impossible)