PSALTer results panel

S ==

$$\int\int\int\int\Big(\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}\Big(12\,\partial_\alpha\partial^\alpha\varphi - 4\,\partial_\alpha h^\beta{}_\beta\,\partial^\alpha\varphi - 6\,\partial_\alpha\varphi\,\partial^\alpha\varphi + 4\,\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}\Big) - \alpha_{.6}\Big(4\,\partial_\beta\partial_\alpha h^\chi{}_\chi\,\partial^\beta\partial^\alpha\varphi + 4\,\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} + 4\,\partial_\alpha\partial^\alpha\varphi\Big(2\,\partial_\beta\partial^\beta\varphi - \partial_\chi\partial_\beta h^{\beta\chi} + \partial_\chi\partial^\chi h^\beta{}_\beta\Big) + \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^\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}\Big) + \alpha_{.5}\Big(\partial_\alpha\partial^\alpha\varphi\Big(9\,\partial_\beta\partial^\beta\varphi - 6\,\partial_\chi\partial_\beta h^{\beta\chi} + 6\,\partial_\chi\partial^\chi h^\beta{}_\beta\Big) + \partial_\beta\partial_\alpha h^{\alpha\beta}\,\partial_\delta\partial_\chi h^{\chi\delta} + \partial_\beta\partial^\beta h^\alpha{}_\alpha\Big(-2\,\partial_\delta\partial_\chi h^{\chi\delta} + \partial_\delta\partial^\delta h^\chi{}_\chi\Big)\Big) + \alpha_{.7}\Big(\partial_\alpha\partial^\alpha\varphi\,\partial_\beta\partial^\beta\varphi + 2\,\partial_\beta\partial_\alpha h^\chi{}_\chi\,\partial^\beta\partial^\alpha\varphi + 2\,\partial_\beta\partial_\alpha\varphi\,\partial^\beta\partial^\alpha\varphi - 2\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\alpha h_\beta{}^\chi - 2\,\partial^\beta\partial^\alpha\varphi\,\partial_\chi\partial_\beta h_\alpha{}^\chi + 2\,\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}\Big)\Big)[t,\,x,\,y,\,z]\,dz\,dy\,dx\,dt$$

Wave operator

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

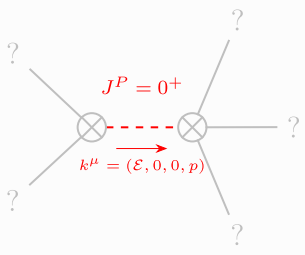
Saturated propagator

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

Source constraints

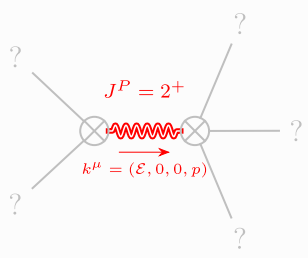
Spin-parity form	Covariant form	Multiplicities
$\overset{0^+}{\cdot}\mathcal{T}^\perp == 0$	$\partial_\beta\partial_\alpha\mathcal{T}^{\alpha\beta} == 0$	1
$\overset{1^-}{\cdot}\mathcal{T}^{\perp\,\alpha} == 0$	$\partial_\chi\partial_\beta\partial^\alpha\mathcal{T}^{\beta\chi} == \partial_\chi\partial^\chi\partial_\beta\mathcal{T}^{\alpha\beta}$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

Massive spectrum



Massive particle

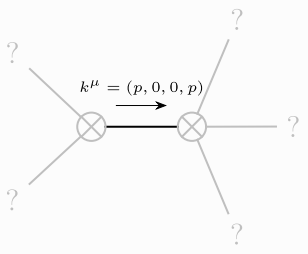
Pole residue:	$\frac{4}{\alpha_{.1}} > 0$
Square mass:	$\frac{\alpha_{.1}}{4\,(3\,\alpha_{.5}-4\,\alpha_{.6}+\alpha_{.7})} > 0$
Spin:	0
Parity:	Even



Massive particle

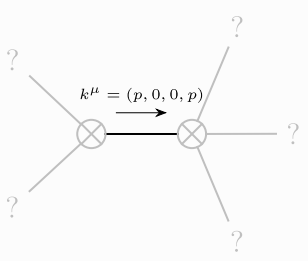
Pole residue:	$-\frac{8}{\alpha_{.1}} > 0$
Square mass:	$\frac{\alpha_{.1}}{8\,\alpha_{.6}-8\,\alpha_{.7}} > 0$
Spin:	2
Parity:	Even

Massless spectrum



Massless particle

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



Massless particle

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

Gauge symmetries

(Not yet implemented in PSALTer)

Unitarity conditions

(Unitarity is demonstrably impossible)

Validity assumptions

(Not yet implemented in PSALTer)