

PSALTer results panel

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$$\iiint\left(\frac{1}{6}\left(6\,\mathcal{A}^{\alpha\beta\chi}\,\sigma_{\alpha\beta\chi}+6\,f^{\alpha\beta}\,\tau\left(\Delta+\mathcal{K}\right)_{\alpha\beta}-6\,r_{\frac{3}{2}}\partial_{\beta}\mathcal{A}_{\textcolor{violet}{1}\,\theta}^{\theta}\partial'\mathcal{A}^{\alpha\beta}_{\alpha}-6\,r_{\frac{3}{2}}\partial_{\alpha}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}\partial_{\theta}\mathcal{A}_{\textcolor{violet}{1}\,\beta}^{\theta}+12\,r_{\frac{3}{2}}\partial'\mathcal{A}^{\alpha\beta}_{\alpha}\partial_{\theta}\mathcal{A}_{\textcolor{violet}{1}\,\beta}^{\theta}+8\,r_{\frac{2}{2}}\partial_{\beta}\mathcal{A}_{\alpha\textcolor{violet}{1}\theta}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}-4\,r_{\frac{2}{2}}\partial_{\beta}\mathcal{A}_{\alpha\theta\textcolor{violet}{1}}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}+4\,r_{\frac{2}{2}}\partial_{\beta}\mathcal{A}_{\textcolor{violet}{1}\theta\alpha}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}-24\,r_{\frac{3}{2}}\partial_{\beta}\mathcal{A}_{\textcolor{violet}{1}\theta\alpha}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}-2\,r_{\frac{2}{2}}\partial_{\textcolor{violet}{1}}\mathcal{A}_{\alpha\beta\theta}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}+2\,r_{\frac{2}{2}}\partial_{\theta}\mathcal{A}_{\alpha\beta\textcolor{violet}{1}}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}-4\,r_{\frac{2}{2}}\partial_{\theta}\mathcal{A}_{\alpha\textcolor{violet}{1}\beta}\partial^{\theta}\mathcal{A}^{\alpha\beta\textcolor{violet}{1}}+4\,t_{\frac{2}{2}}\,\mathcal{A}_{\textcolor{violet}{1}\theta\alpha}\,\partial^{\theta}f^{\alpha\textcolor{violet}{1}}+2\,t_{\frac{2}{2}}\partial_{\alpha}f_{\textcolor{violet}{1}\theta}}\partial^{\theta}f^{\alpha\textcolor{violet}{1}}-t_{\frac{2}{2}}\partial_{\alpha}f_{\theta\textcolor{violet}{1}}\partial^{\theta}f^{\alpha\textcolor{violet}{1}}-t_{\frac{2}{2}}\partial_{\textcolor{violet}{1}}f_{\alpha\theta}\partial^{\theta}f^{\alpha\textcolor{violet}{1}}+t_{\frac{2}{2}}\partial_{\theta}f_{\alpha\textcolor{violet}{1}}\partial^{\theta}f^{\alpha\textcolor{violet}{1}}-t_{\frac{2}{2}}\partial_{\theta}f_{\textcolor{violet}{1}\alpha}\partial^{\theta}f^{\alpha\textcolor{violet}{1}}-4\,t_{\frac{2}{2}}\,\mathcal{A}_{\alpha\theta\textcolor{violet}{1}}\left(\mathcal{A}^{\alpha\textcolor{violet}{1}\theta}+\partial^{\theta}f^{\alpha\textcolor{violet}{1}}\right)+2\,t_{\frac{2}{2}}\,\mathcal{A}_{\alpha\textcolor{violet}{1}\theta}\left(\mathcal{A}^{\alpha\textcolor{violet}{1}\theta}+2\,\partial^{\theta}f^{\alpha\textcolor{violet}{1}}\right)\right))[t,\textcolor{violet}{x},\textcolor{violet}{y},\textcolor{violet}{z}]\,d\textcolor{violet}{z}\,d\textcolor{violet}{y}\,d\textcolor{violet}{x}\,d\textcolor{violet}{t}$$

Wave operator

$0^+ \mathcal{A}^{\parallel} \dagger$	$0^+ f^{\parallel} \dagger$	$0^+ f^{\perp} \dagger$	$0^+ \mathcal{A}^{\perp} \dagger$								
0	0	0	0								
0	0	0	0								
0	0	0	0								
0	0	0	0								
$0^+ \mathcal{A}^{\parallel} \dagger$	0	0	0	$k^2 r_{\frac{2}{2}} + t_{\frac{2}{2}}$	$1^+ \mathcal{A}^{\parallel}_{\alpha\beta}$	$1^+ \mathcal{A}^{\perp}_{\alpha\beta}$	$1^+ f^{\parallel}_{\alpha\beta}$	$1^+ \mathcal{A}^{\parallel}_{\alpha}$	$1^+ \mathcal{A}^{\perp}_{\alpha}$	$1^+ f^{\parallel}_{\alpha}$	$1^+ f^{\perp}_{\alpha}$
$1^+ \mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$\frac{1}{6} (9 k^2 r_{\frac{3}{2}} + 4 t_{\frac{2}{2}})$	$\frac{\sqrt{2} t_{\frac{2}{2}}}{3}$	$\frac{1}{3} i \sqrt{2} k t_{\frac{2}{2}}$	0	0	0	0				
$1^+ \mathcal{A}^{\perp} \dagger^{\alpha\beta}$	$\frac{\sqrt{2} t_{\frac{2}{2}}}{3}$	$\frac{t_{\frac{2}{2}}}{3}$	$\frac{i k t_{\frac{2}{2}}}{3}$	0	0	0	0				
$1^+ f^{\parallel} \dagger^{\alpha\beta}$	$-\frac{1}{3} i \sqrt{2} k t_{\frac{2}{2}}$	$-\frac{1}{3} i k t_{\frac{2}{2}}$	$\frac{k^2 t_{\frac{2}{2}}}{3}$	0	0	0	0				
$1^+ \mathcal{A}^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0				
$1^+ \mathcal{A}^{\perp} \dagger^{\alpha}$	0	0	0	0	0	0	0				
$1^+ f^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0				
$1^+ f^{\perp} \dagger^{\alpha}$	0	0	0	0	0	0	0				
				$2^+ \mathcal{A}^{\parallel}_{\alpha\beta}$	$2^+ f^{\parallel}_{\alpha\beta}$	$2^+ \mathcal{A}^{\parallel}_{\alpha\beta\chi}$					
				$2^+ \mathcal{A}^{\parallel} \dagger^{\alpha\beta}$	$-\frac{3 k^2 r_{\frac{3}{2}}}{2}$	0	0				
				$2^+ f^{\parallel} \dagger^{\alpha\beta}$	0	0	0				
				$2^+ \mathcal{A}^{\parallel} \dagger^{\alpha\beta\chi}$	0	0	0				

Saturated propagator

	$0^+ \sigma^{\parallel}$	$0^+ \tau^{\parallel}$	$0^+ \tau^{\perp}$	$0^+ \sigma^{\parallel}$			
$0^+ \sigma^{\parallel} \dagger$	0	0	0	0			
$0^+ \tau^{\parallel} \dagger$	0	0	0	0			
$0^+ \tau^{\perp} \dagger$	0	0	0	0			
$0^+ \sigma^{\parallel} \dagger$	0	0	0	$\frac{1}{k^2 r_{\frac{2}{2}} + t_{\frac{2}{2}}}$			
	$1^+ \sigma^{\parallel}_{\alpha\beta}$	$1^+ \sigma^{\perp}_{\alpha\beta}$	$1^+ \tau^{\parallel}_{\alpha\beta}$	$1^+ \sigma^{\parallel}_{\alpha}$	$1^+ \sigma^{\perp}_{\alpha}$	$1^+ \tau^{\parallel}_{\alpha}$	$1^+ \tau^{\perp}_{\alpha}$
$1^+ \sigma^{\parallel} \dagger^{\alpha\beta}$	$\frac{2}{3k^2 r_{\frac{3}{2}}}$	$-\frac{2\sqrt{2}}{3k^2 r_{\frac{3}{2}} + 3k^4 r_{\frac{3}{2}}}$	$-\frac{2i\sqrt{2}}{3kr_{\frac{3}{2}} + 3k^3 r_{\frac{3}{2}}}$	0	0	0	0
$1^+ \sigma^{\perp} \dagger^{\alpha\beta}$	$-\frac{2\sqrt{2}}{3k^2 r_{\frac{3}{2}} + 3k^4 r_{\frac{3}{2}}}$	$\frac{9k^2 r_{\frac{3}{2}} + 4t_{\frac{2}{2}}}{3(k+k^3)^2 r_{\frac{3}{2}} t_{\frac{2}{2}}}$	$\frac{i(9k^2 r_{\frac{3}{2}} + 4t_{\frac{2}{2}})}{3k(1+k^2)^2 r_{\frac{3}{2}} t_{\frac{2}{2}}}$	0	0	0	0
$1^+ \tau^{\parallel} \dagger^{\alpha\beta}$	$\frac{2i\sqrt{2}}{3kr_{\frac{3}{2}} + 3k^3 r_{\frac{3}{2}}}$	$-\frac{i(9k^2 r_{\frac{3}{2}} + 4t_{\frac{2}{2}})}{3k(1+k^2)^2 r_{\frac{3}{2}} t_{\frac{2}{2}}}$	$\frac{9k^2 r_{\frac{3}{2}} + 4t_{\frac{2}{2}}}{3(1+k^2)^2 r_{\frac{3}{2}} t_{\frac{2}{2}}}$	0	0	0	0
$1^+ \sigma^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0
$1^+ \sigma^{\perp} \dagger^{\alpha}$	0	0	0	0	0	0	0
$1^+ \tau^{\parallel} \dagger^{\alpha}$	0	0	0	0	0	0	0
$1^+ \tau^{\perp} \dagger^{\alpha}$	0	0	0	0	0	0	0
	$2^+ \sigma^{\parallel}_{\alpha\beta}$	$2^+ \tau^{\parallel}_{\alpha\beta}$	$2^+ \sigma^{\parallel}_{\alpha\beta\chi}$				
$2^+ \sigma^{\parallel} \dagger^{\alpha\beta}$	$-\frac{2}{3k^2 r_{\frac{3}{2}}}$	0	0				
$2^+ \tau^{\parallel} \dagger^{\alpha\beta}$	0	0	0				
$2^+ \sigma^{\parallel} \dagger^{\alpha\beta\chi}$	0	0	0				

Source constraints

Spin-parity form	Covariant form	Multiplicities
$0^+\tau^{\perp}==0$	$\text{xAct}\backslash\text{xTensor}\backslash\text{Private}\backslash\text{Reconstruct}[\text{Symmetry}[4,\partial^{\bullet 4}\partial^{\bullet 3}\tau(\Delta+\mathcal{K})^{\bullet 1\bullet 2},\{\bullet 1\rightarrow\textcolor{violet}{a},\bullet 2\rightarrow\textcolor{violet}{b},\bullet 3\rightarrow-\textcolor{violet}{a},\bullet 4\rightarrow-\textcolor{violet}{b}\},\text{StrongGenSet}[\{3,4\},\text{GenSet}[(3,4)]]],\{1,\{\textcolor{violet}{a},-\textcolor{violet}{a},\textcolor{violet}{b},-\textcolor{violet}{b}\}][\{1,3,5,2\}]]]==0$	1
$0^+\tau^{\parallel}==0$	$\partial_{\beta}\partial_{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta}==\partial_{\beta}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha}_{\alpha}$	1
$0^+\sigma^{\parallel}==0$	$\partial_{\beta}\sigma^{\alpha}_{\alpha}{}^{\beta}==0$	1
$1^+\tau^{\perp\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta}$	3
$1^+\tau^{\perp\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\beta\alpha}$	3
$1^+\sigma^{\perp\alpha}==0$	$\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}==0$	3
$1^+\sigma^{\parallel\alpha}==0$	$\partial_{\delta}\partial^{\alpha}\sigma^{\chi}_{\chi}{}^{\delta}+\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha}_{\chi}==\partial_{\delta}\partial_{\chi}\sigma^{\chi\alpha\delta}$	3
$i\,k\,1^+\sigma^{\perp\alpha\beta}+1^+\tau^{\perp\alpha\beta}==0$	$\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi}+\partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\chi\alpha}+\partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta}+2\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta}+2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta}==\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta}+\partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi}+\partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\beta\alpha}+2\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$2^+\sigma^{\parallel\alpha\beta\chi}==0$	$3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon}+3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\alpha}\sigma^{\delta\beta}_{\delta}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\alpha\chi\delta}+4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\chi\alpha\delta}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\delta\alpha\chi}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\beta}\sigma^{\delta\alpha}_{\delta}+4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\chi}\sigma^{\delta\alpha\beta}+3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\alpha}\sigma^{\delta}_{\delta}{}^{\epsilon}+3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\beta\epsilon}+3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\epsilon}\sigma^{\delta\alpha}_{\delta}==3\,\partial_{\epsilon}\partial_{\delta}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon}+3\,\partial_{\epsilon}\partial^{\epsilon}\partial^{\chi}\partial^{\beta}\sigma^{\delta\alpha}_{\delta}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\beta\chi\delta}+4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\chi\beta\delta}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\delta\beta\chi}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\alpha}\sigma^{\alpha\beta\delta}+2\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\beta\alpha\chi}+4\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\sigma^{\chi\alpha\beta}+3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\beta}\sigma^{\delta}_{\delta}{}^{\epsilon}+3\,\eta^{\beta\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial_{\delta}\sigma^{\delta\alpha\epsilon}+3\,\eta^{\alpha\chi}\,\partial_{\phi}\partial^{\phi}\partial_{\epsilon}\partial^{\delta}\sigma^{\delta\beta}_{\delta}$	5
$2^+\tau^{\parallel\alpha\beta}==0$	$4\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\delta}+2\,\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi}_{\chi}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\beta\alpha}+2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\chi\delta}==3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\chi\beta}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\chi}+3\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\chi\alpha}+2\,\eta^{\alpha\beta}\,\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau\left(\Delta+\mathcal{K}\right)^{\chi}_{\chi}$	5
Total expected gauge generators:		28

Massive spectrum

Massive particle

Pole residue:	$-\frac{1}{r_{\frac{1}{2}}}>0$
Square mass:	$-\frac{t_{\frac{2}{2}}}{r_{\frac{1}{2}}}>0$
Spin:	0
Parity:	Odd

Massless spectrum

(No particles)

Unitarity conditions

$r_{\frac{2}{2}}<0\,\&\&t_{\frac{2}{2}}>0$