

PSALTER results panel

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$$\begin{aligned} &\iiint\iiint(\frac{1}{6}(2t_{_{\scriptscriptstyle 1}}\mathcal{A}^{a\iota}_{_{\scriptscriptstyle 1}}\mathcal{A}_{_{\scriptscriptstyle 1}\theta}^{\scriptscriptstyle\theta}-4t_{_{\scriptscriptstyle 3}}\mathcal{A}^{a\iota}_{_{\scriptscriptstyle 3}}\mathcal{A}_{_{\scriptscriptstyle 3}\theta}^{\scriptscriptstyle\theta}+6\mathcal{A}^{a\beta\chi}\sigma_{a\beta\chi}+6f^{a\beta}\tau(\Delta+\mathcal{K})_{a\beta}-4t_{_{\scriptscriptstyle 1}}\mathcal{A}_{_{\scriptscriptstyle\alpha}\theta}^{\scriptscriptstyle\theta}\partial_{\scriptscriptstyle 1}f^{a\iota}+8t_{_{\scriptscriptstyle 3}}\mathcal{A}_{_{\scriptscriptstyle\alpha}\theta}^{\scriptscriptstyle\theta}\partial_{\scriptscriptstyle 3}f^{a\iota}+4t_{_{\scriptscriptstyle 1}}\mathcal{A}_{_{\scriptscriptstyle 1}\theta}^{\scriptscriptstyle\theta}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}-8t_{_{\scriptscriptstyle 3}}\mathcal{A}_{_{\scriptscriptstyle 1}\theta}^{\scriptscriptstyle\theta}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}-2t_{_{\scriptscriptstyle 1}}\partial_{\scriptscriptstyle 1}f_{_{\scriptscriptstyle\theta}}^{\scriptscriptstyle\theta}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}+4t_{_{\scriptscriptstyle 3}}\partial_{\scriptscriptstyle 3}f_{_{\scriptscriptstyle\theta}}^{\scriptscriptstyle\theta}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}-2t_{_{\scriptscriptstyle 1}}\partial_{\scriptscriptstyle 1}f^{a\iota}\partial_{\theta}f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\theta}+4t_{_{\scriptscriptstyle 3}}\partial_{\scriptscriptstyle 3}f^{a\iota}\partial_{\theta}f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\theta}+4t_{_{\scriptscriptstyle 1}}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}\partial_{\theta}f_{_{\scriptscriptstyle 1}}^{\scriptscriptstyle\theta}-8\\ &\quad t_{_{\scriptscriptstyle 3}}\partial'f_{_{\scriptscriptstyle\alpha}}^{\scriptscriptstyle\alpha}\partial_{\theta}f_{_{\scriptscriptstyle 1}}^{\scriptscriptstyle\theta}+8r_{_{\scriptscriptstyle 2}}\partial_{\beta}\mathcal{A}_{a\iota\theta}\partial^{\theta}\mathcal{A}^{a\beta\iota}-4r_{_{\scriptscriptstyle 2}}\partial_{\beta}\mathcal{A}_{a\theta\iota}\partial^{\theta}\mathcal{A}^{a\beta\iota}+4r_{_{\scriptscriptstyle 2}}\partial_{\beta}\mathcal{A}_{_{\scriptscriptstyle 1}\theta\alpha}\partial^{\theta}\mathcal{A}^{a\beta\iota}-2r_{_{\scriptscriptstyle 2}}\partial_{\iota}\mathcal{A}_{a\beta\theta}\partial^{\theta}\mathcal{A}^{a\beta\iota}+2r_{_{\scriptscriptstyle 2}}\partial_{\theta}\mathcal{A}_{a\beta\iota}\partial^{\theta}\mathcal{A}^{a\beta\iota}-4r_{_{\scriptscriptstyle 2}}\partial_{\theta}\mathcal{A}_{a\iota\beta}\partial^{\theta}\mathcal{A}^{a\beta\iota}+\\ &\quad 4t_{_{\scriptscriptstyle 1}}\mathcal{A}_{_{\scriptscriptstyle 1}\theta\alpha}\partial^{\theta}f^{a\iota}+4t_{_{\scriptscriptstyle 2}}\mathcal{A}_{_{\scriptscriptstyle 1}\theta\alpha}\partial^{\theta}f^{a\iota}-4t_{_{\scriptscriptstyle 1}}\partial_{a}f_{_{\scriptscriptstyle 1}\theta}\partial^{\theta}f^{a\iota}+2t_{_{\scriptscriptstyle 2}}\partial_{a}f_{_{\scriptscriptstyle 1}\theta}\partial^{\theta}f^{a\iota}-4t_{_{\scriptscriptstyle 1}}\partial_{a}f_{_{\scriptscriptstyle\theta\iota}}\partial^{\theta}f^{a\iota}-t_{_{\scriptscriptstyle 2}}\partial_{a}f_{_{\scriptscriptstyle\theta\iota}}\partial^{\theta}f^{a\iota}+2t_{_{\scriptscriptstyle 1}}\partial_{\iota}f_{a\theta}\partial^{\theta}f^{a\iota}-t_{_{\scriptscriptstyle 2}}\partial_{\iota}f_{a\theta}\partial^{\theta}f^{a\iota}+4t_{_{\scriptscriptstyle 1}}\partial_{\theta}f_{a\iota}\partial^{\theta}f^{a\iota}+t_{_{\scriptscriptstyle 2}}\partial_{\theta}f_{a\iota}\partial^{\theta}f^{a\iota}+\\ &\quad 2t_{_{\scriptscriptstyle 1}}\partial_{\theta}f_{_{\scriptscriptstyle 1}\alpha}\partial^{\theta}f^{a\iota}-t_{_{\scriptscriptstyle 2}}\partial_{\theta}f_{_{\scriptscriptstyle 1}\alpha}\partial^{\theta}f^{a\iota}+2(t_{_{\scriptscriptstyle 1}}+t_{_{\scriptscriptstyle 2}})\mathcal{A}_{a\iota\theta}(\mathcal{A}^{a\iota\theta}+2\partial^{\theta}f^{a\iota})+2\mathcal{A}_{a\theta\iota}((t_{_{\scriptscriptstyle 1}}-2t_{_{\scriptscriptstyle 2}})\mathcal{A}^{a\iota\theta}+2(2t_{_{\scriptscriptstyle 1}}-t_{_{\scriptscriptstyle 2}})\partial^{\theta}f^{a\iota}))[t,x,y,z]dzdydxdt\end{aligned}$$

Wave operator

${}^0\mathcal{A}^{\parallel}$	${}^0f^{\parallel}$	${}^0f^{\perp}$	${}^0\mathcal{A}^{\parallel}$												
${}^0\mathcal{A}^{\parallel}\dagger$	t_3	$-i\sqrt{2}kt_3$	0	0											
${}^0f^{\parallel}\dagger$	$i\sqrt{2}kt_3$	$2k^2t_3$	0	0											
${}^0f^{\perp}\dagger$	0	0	0	0											
${}^0\mathcal{A}^{\parallel}\dagger$	0	0	0	$k^2r_2+t_2$	$1^+\mathcal{A}^{\parallel}_{a\beta}$	$1^+\mathcal{A}^{\perp}_{a\beta}$	$1^+f^{\parallel}_{a\beta}$	$1^-\mathcal{A}^{\parallel}_{\alpha}$	$1^-\mathcal{A}^{\perp}_{\alpha}$	$1^-f^{\parallel}_{\alpha}$	$1^-f^{\perp}_{\alpha}$				
$1^+\mathcal{A}^{\parallel}\dagger^{a\beta}$	$\frac{1}{6}(t_1+4t_2)$	$\frac{t_1-2t_2}{3\sqrt{2}}$	$-\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	0	0	0	0								
$1^+\mathcal{A}^{\perp}\dagger^{a\beta}$	$\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{t_1+t_2}{3}$	$\frac{1}{3}ik(t_1+t_2)$	0	0	0	0								
$1^+f^{\parallel}\dagger^{a\beta}$	$\frac{ik(t_1-2t_2)}{3\sqrt{2}}$	$-\frac{1}{3}ik(t_1+t_2)$	$\frac{1}{3}k^2(t_1+t_2)$	0	0	0	0								
$1^-\mathcal{A}^{\parallel}\dagger^{\alpha}$	0	0	0	$\frac{1}{6}(t_1+4t_2)$	$\frac{t_1-2t_2}{3\sqrt{2}}$	0	$\frac{1}{3}ik(t_1-2t_2)$								
$1^-\mathcal{A}^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{t_1-2t_2}{3\sqrt{2}}$	$\frac{t_1+t_2}{3}$	0	$\frac{1}{3}i\sqrt{2}k(t_1+t_2)$								
$1^-f^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0								
$1^-f^{\perp}\dagger^{\alpha}$	0	0	0	$-\frac{1}{3}ik(t_1-2t_2)$	$-\frac{1}{3}i\sqrt{2}k(t_1+t_2)$	0	$\frac{2}{3}k^2(t_1+t_2)$	$2^+\mathcal{A}^{\parallel}_{a\beta}$	$2^+f^{\parallel}_{a\beta}$	$2^-\mathcal{A}^{\parallel}_{a\beta\chi}$					
												$2^+\mathcal{A}^{\parallel}\dagger^{a\beta}$	$\frac{t_1}{2}$	$-\frac{ikt_1}{\sqrt{2}}$	0
												$2^+f^{\parallel}\dagger^{a\beta}$	$\frac{ikt_1}{\sqrt{2}}$	k^2t_1	0
												$2^-\mathcal{A}^{\parallel}\dagger^{a\beta\chi}$	0	0	$\frac{t_1}{2}$

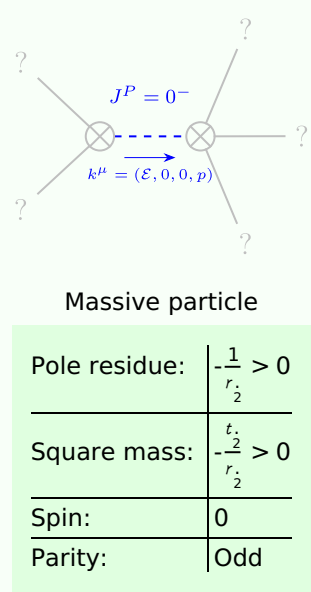
Saturated propagator

	${}^0\text{+}\sigma^{\parallel}$	${}^0\text{+}\tau^{\parallel}$	${}^0\text{+}\tau^{\perp}$	${}^0\text{+}\sigma^{\parallel}$									
${}^0\text{+}\sigma^{\parallel}\dagger$	$\frac{1}{(1+2k^2)^2t_{\frac{1}{3}}}$	$-\frac{i\sqrt{2}k}{(1+2k^2)^2t_{\frac{1}{3}}}$	0	0									
${}^0\text{+}\tau^{\parallel}\dagger$	$\frac{i\sqrt{2}k}{(1+2k^2)^2t_{\frac{1}{3}}}$	$\frac{2k^2}{(1+2k^2)^2t_{\frac{1}{3}}}$	0	0									
${}^0\text{+}\tau^{\perp}\dagger$	0	0	0	0									
${}^0\text{+}\sigma^{\parallel}\dagger$	0	0	0	$\frac{1}{k^2r_{\frac{1}{2}}+t_{\frac{1}{2}}}$	$1\text{+}\sigma^{\parallel}_{a\beta}$	$1\text{+}\sigma^{\perp}_{a\beta}$	$1\text{+}\tau^{\parallel}_{a\beta}$	$1\text{+}\sigma^{\parallel}_{\alpha}$	$1\text{+}\sigma^{\perp}_{\alpha}$	$1\text{+}\tau^{\parallel}_{\alpha}$	$1\text{+}\tau^{\perp}_{\alpha}$		
	$1\text{+}\sigma^{\parallel}\dagger^{a\beta}$	$\frac{2(t_{\frac{1}{1}}+t_{\frac{1}{2}})}{3t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$\frac{\sqrt{2}(t_{\frac{1}{1}}-2t_{\frac{1}{2}})}{3(1+k^2)t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$\frac{i\sqrt{2}k(t_{\frac{1}{1}}-2t_{\frac{1}{2}})}{3(1+k^2)t_{\frac{1}{1}}t_{\frac{1}{2}}}$									
	$1\text{+}\sigma^{\perp}\dagger^{a\beta}$	$\frac{\sqrt{2}(t_{\frac{1}{1}}-2t_{\frac{1}{2}})}{3(1+k^2)t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$\frac{t_{\frac{1}{1}}+4t_{\frac{1}{2}}}{3(1+k^2)^2t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$\frac{ik(t_{\frac{1}{1}}+4t_{\frac{1}{2}})}{3(1+k^2)^2t_{\frac{1}{1}}t_{\frac{1}{2}}}$									
	$1\text{+}\tau^{\parallel}\dagger^{a\beta}$	$-\frac{i\sqrt{2}k(t_{\frac{1}{1}}-2t_{\frac{1}{2}})}{3(1+k^2)t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$-\frac{ik(t_{\frac{1}{1}}+4t_{\frac{1}{2}})}{3(1+k^2)^2t_{\frac{1}{1}}t_{\frac{1}{2}}}$	$\frac{k^2(t_{\frac{1}{1}}+4t_{\frac{1}{2}})}{3(1+k^2)^2t_{\frac{1}{1}}t_{\frac{1}{2}}}$									
	$1\text{+}\sigma^{\parallel}\dagger^{\alpha}$	0	0	0	$\frac{2(t_{\frac{1}{1}}+t_{\frac{1}{3}})}{3t_{\frac{1}{1}}t_{\frac{1}{3}}}$	$-\frac{\sqrt{2}(t_{\frac{1}{1}}-2t_{\frac{1}{3}})}{3(1+2k^2)t_{\frac{1}{1}}t_{\frac{1}{3}}}$	0	$-\frac{2ikkt_{\frac{1}{1}}-4ikkt_{\frac{1}{3}}}{3t_{\frac{1}{1}}t_{\frac{1}{3}}+6k^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$					
	$1\text{+}\sigma^{\perp}\dagger^{\alpha}$	0	0	0	$-\frac{\sqrt{2}(t_{\frac{1}{1}}-2t_{\frac{1}{3}})}{3(1+2k^2)t_{\frac{1}{1}}t_{\frac{1}{3}}}$	$\frac{t_{\frac{1}{1}}+4t_{\frac{1}{3}}}{3(1+2k^2)^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$	0	$\frac{i\sqrt{2}k(t_{\frac{1}{1}}+4t_{\frac{1}{3}})}{3(1+2k^2)^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$					
	$1\text{+}\tau^{\parallel}\dagger^{\alpha}$	0	0	0	0	0	0	0					
	$1\text{+}\tau^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{2ikkt_{\frac{1}{1}}-4ikkt_{\frac{1}{3}}}{3t_{\frac{1}{1}}t_{\frac{1}{3}}+6k^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$	$-\frac{i\sqrt{2}k(t_{\frac{1}{1}}+4t_{\frac{1}{3}})}{3(1+2k^2)^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$	0	$\frac{2k^2(t_{\frac{1}{1}}+4t_{\frac{1}{3}})}{3(1+2k^2)^2t_{\frac{1}{1}}t_{\frac{1}{3}}}$	$2\text{+}\sigma^{\parallel}_{a\beta}$	$2\text{+}\tau^{\parallel}_{a\beta}$	$2\text{+}\sigma^{\parallel}_{a\beta\chi}$		
					$2\text{+}\sigma^{\parallel}\dagger^{a\beta}$	$\frac{2}{(1+2k^2)^2t_{\frac{1}{1}}}$	$-\frac{2i\sqrt{2}k}{(1+2k^2)^2t_{\frac{1}{1}}}$	0					
					$2\text{+}\tau^{\parallel}\dagger^{a\beta}$	$\frac{2i\sqrt{2}k}{(1+2k^2)^2t_{\frac{1}{1}}}$	$\frac{4k^2}{(1+2k^2)^2t_{\frac{1}{1}}}$	0					
					$2\text{+}\sigma^{\parallel}\dagger^{a\beta\chi}$	0	0	$\frac{2}{t_{\frac{1}{1}}}$					

Source constraints

Spin-parity form	Covariant form	Multiplicities
${}^0\text{+}\tau^{\perp}==0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{a\beta}==0$	1
$-2ik\,{}^0\text{+}\sigma^{\parallel}+{}^0\text{+}\tau^{\parallel}==0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{a\beta}==\partial_{\beta}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha}_{\alpha}+2\partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}_{\alpha}{}^{\beta}$	1
$2i\,k\,{}^1\text{+}\sigma^{\perp\alpha}+{}^1\text{+}\tau^{\perp\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{a\beta}+2\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3
${}^1\text{+}\tau^{\parallel\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\beta\alpha}$	3
$i\,k\,{}^1\text{+}\sigma^{\perp\,a\beta}+{}^1\text{+}\tau^{a\beta}==0$	$\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}+\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha}+\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{a\beta}+2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta}+2\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi a\beta}==\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta}+\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi}+\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha}+2\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
$-2ik\,2\text{+}\sigma^{a\beta}+2\text{+}\tau^{a\beta}==0$	$-i(4\partial_{\delta}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\delta}+2\partial_{\delta}\partial^{\delta}\partial^{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi}_{\chi}-3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}-3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\beta}-3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi}-3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha}+3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{a\beta}+3\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha}+4i\,k^{\chi}\partial_{\epsilon}\partial_{\chi}\partial^{\beta}\partial^{\alpha}\sigma^{\delta}_{\delta}{}^{\epsilon}-6i\,k^{\chi}\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\delta\beta\epsilon}-6i\,k^{\chi}\partial_{\epsilon}\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\delta\alpha\epsilon}+6i\,k^{\chi}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{a\beta\delta}+6i\,k^{\chi}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\sigma^{\beta a\delta}+2\,\eta^{a\beta}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial_{\chi}\tau(\Delta+\mathcal{K})^{\chi\delta}-2\,\eta^{a\beta}\partial_{\epsilon}\partial^{\epsilon}\partial_{\delta}\partial^{\delta}\tau(\Delta+\mathcal{K})^{\chi}_{\chi}-4i\,\eta^{a\beta}\,k^{\chi}\partial_{\theta}\partial^{\theta}\partial_{\epsilon}\partial_{\chi}\sigma^{\delta}_{\delta}{}^{\epsilon})==0$	5
Total expected gauge generators:		16

Massive spectrum



Massless spectrum

(No particles)

Unitarity conditions

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