

PSALTER results panel

$$S = \iiint \left(\frac{1}{6} \left(6 \mathcal{A}^{\alpha\beta\chi} \sigma_{\alpha\beta\chi} + 6 f^{\alpha\beta} \tau (\Delta + \mathcal{K})_{\alpha\beta} - 12 r_{\cdot 1} \partial_{\beta} \mathcal{A}_{\cdot \theta}^{\theta} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} + 12 r_{\cdot 1} \partial_{\cdot \theta} \mathcal{A}_{\beta}^{\theta} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} + 12 r_{\cdot 1} \partial_{\alpha} \mathcal{A}^{\alpha\beta\cdot} \partial_{\theta} \mathcal{A}_{\beta}^{\theta} - 24 r_{\cdot 1} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} \partial_{\theta} \mathcal{A}_{\beta}^{\theta} - 12 r_{\cdot 1} \partial_{\alpha} \mathcal{A}^{\alpha\beta\cdot} \partial_{\theta} \mathcal{A}_{\cdot \beta}^{\theta} + 24 r_{\cdot 1} \partial' \mathcal{A}^{\alpha\beta}_{\alpha} \partial_{\theta} \mathcal{A}_{\cdot \beta}^{\theta} - 8 r_{\cdot 1} \partial_{\beta} \mathcal{A}_{\alpha\cdot\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 8 r_{\cdot 2} \partial_{\beta} \mathcal{A}_{\alpha\cdot\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 4 r_{\cdot 1} \partial_{\beta} \mathcal{A}_{\alpha\theta\cdot} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} - 4 r_{\cdot 2} \partial_{\beta} \mathcal{A}_{\alpha\theta\cdot} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} - 16 r_{\cdot 1} \partial_{\beta} \mathcal{A}_{\cdot\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 4 r_{\cdot 2} \partial_{\beta} \mathcal{A}_{\cdot\theta\alpha} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} - 4 r_{\cdot 1} \partial_{\cdot \theta} \mathcal{A}_{\alpha\beta\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} - 2 r_{\cdot 2} \partial_{\cdot \theta} \mathcal{A}_{\alpha\beta\theta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 4 r_{\cdot 1} \partial_{\theta} \mathcal{A}_{\alpha\beta\cdot} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 2 r_{\cdot 2} \partial_{\theta} \mathcal{A}_{\alpha\beta\cdot} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 4 r_{\cdot 1} \partial_{\theta} \mathcal{A}_{\alpha\cdot\beta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} - 4 r_{\cdot 2} \partial_{\theta} \mathcal{A}_{\alpha\cdot\beta} \partial^{\theta} \mathcal{A}^{\alpha\beta\cdot} + 4 t_{\cdot 2} \mathcal{A}_{\cdot\theta\alpha} \partial^{\theta} f^{\alpha\cdot} + 2 t_{\cdot 2} \partial_{\alpha} f_{\cdot\theta} \partial^{\theta} f^{\alpha\cdot} - t_{\cdot 2} \partial_{\alpha} f_{\theta\cdot} \partial^{\theta} f^{\alpha\cdot} - t_{\cdot 2} \partial_{\cdot \theta} f_{\alpha} \partial^{\theta} f^{\alpha\cdot} + t_{\cdot 2} \partial_{\theta} f_{\alpha\cdot} \partial^{\theta} f^{\alpha\cdot} - t_{\cdot 2} \partial_{\theta} f_{\cdot\alpha} \partial^{\theta} f^{\alpha\cdot} - 4 t_{\cdot 2} \mathcal{A}_{\alpha\theta\cdot} \left(\mathcal{A}^{\alpha\cdot\theta} + \partial^{\theta} f^{\alpha\cdot} \right) + 2 t_{\cdot 2} \mathcal{A}_{\alpha\cdot\theta} \left(\mathcal{A}^{\alpha\cdot\theta} + 2 \partial^{\theta} f^{\alpha\cdot} \right) \right) [t, x, y, z] dz dy dx dt$$

Wave operator

$\overset{0}{\cdot}\mathcal{A}^{\parallel}$	$\overset{0}{\cdot}f^{\parallel}$	$\overset{0}{\cdot}f^{\perp}$	$\overset{0}{\cdot}\mathcal{A}^{\parallel}$											
$\overset{0}{\cdot}\mathcal{A}^{\parallel} \dagger$	0	0	0	0										
$\overset{0}{\cdot}f^{\parallel} \dagger$	0	0	0	0										
$\overset{0}{\cdot}f^{\perp} \dagger$	0	0	0	0										
$\overset{0}{\cdot}\mathcal{A}^{\parallel} \dagger$	0	0	0	$k^2 r_{\cdot 2} + t_{\cdot 2}$	$\overset{1}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\mathcal{A}^{\perp}_{\alpha\beta}$	$\overset{1}{\cdot}f^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\mathcal{A}^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\mathcal{A}^{\perp}_{\alpha}$	$\overset{1}{\cdot}f^{\parallel}_{\alpha}$	$\overset{1}{\cdot}f^{\perp}_{\alpha}$			
$\overset{1}{\cdot}\mathcal{A}^{\parallel} \dagger$	$\alpha\beta$	$\frac{2 t_{\cdot 2}}{3}$	$\frac{\sqrt{2} t_{\cdot 2}}{3}$	$\frac{1}{3} i \sqrt{2} k t_{\cdot 2}$	0	0	0	0						
$\overset{1}{\cdot}\mathcal{A}^{\perp} \dagger$	$\alpha\beta$	$\frac{\sqrt{2} t_{\cdot 2}}{3}$	$\frac{t_{\cdot 2}}{3}$	$\frac{i k t_{\cdot 2}}{3}$	0	0	0	0						
$\overset{1}{\cdot}f^{\parallel} \dagger$	$\alpha\beta$	$-\frac{1}{3} i \sqrt{2} k t_{\cdot 2}$	$-\frac{1}{3} i k t_{\cdot 2}$	$\frac{k^2 t_{\cdot 2}}{3}$	0	0	0	0						
$\overset{1}{\cdot}\mathcal{A}^{\parallel} \dagger$	α	0	0	0	$-k^2 r_{\cdot 1}$	0	0	0						
$\overset{1}{\cdot}\mathcal{A}^{\perp} \dagger$	α	0	0	0	0	0	0	0						
$\overset{1}{\cdot}f^{\parallel} \dagger$	α	0	0	0	0	0	0	0						
$\overset{1}{\cdot}f^{\perp} \dagger$	α	0	0	0	0	0	0	0	$\overset{2}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}f^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\mathcal{A}^{\parallel}_{\alpha\beta\chi}$			
$\overset{2}{\cdot}\mathcal{A}^{\parallel} \dagger$	$\alpha\beta$	0	0	0					0	0	0			
$\overset{2}{\cdot}f^{\parallel} \dagger$	$\alpha\beta$	0	0	0					0	0	0			
$\overset{2}{\cdot}\mathcal{A}^{\parallel} \dagger$	$\alpha\beta\chi$	0	0	0					0	0	$k^2 r_{\cdot 1}$			

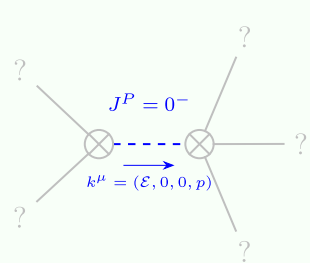
Saturated propagator

$\overset{0}{\cdot}\sigma^{\parallel}$	$\overset{0}{\cdot}\tau^{\parallel}$	$\overset{0}{\cdot}\tau^{\perp}$	$\overset{0}{\cdot}\sigma^{\parallel}$												
$\overset{0}{\cdot}\sigma^{\parallel} \dagger$	0	0	0	0											
$\overset{0}{\cdot}\tau^{\parallel} \dagger$	0	0	0	0											
$\overset{0}{\cdot}\tau^{\perp} \dagger$	0	0	0	0											
$\overset{0}{\cdot}\sigma^{\parallel} \dagger$	0	0	0	$\frac{1}{k^2 r_{\cdot 2} + t_{\cdot 2}}$	$\overset{1}{\cdot}\sigma^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\sigma^{\perp}_{\alpha\beta}$	$\overset{1}{\cdot}\tau^{\parallel}_{\alpha\beta}$	$\overset{1}{\cdot}\sigma^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\sigma^{\perp}_{\alpha}$	$\overset{1}{\cdot}\tau^{\parallel}_{\alpha}$	$\overset{1}{\cdot}\tau^{\perp}_{\alpha}$				
$\overset{1}{\cdot}\sigma^{\parallel} \dagger$	$\alpha\beta$	$\frac{6}{(3+k^2)^2 t_{\cdot 2}}$	$\frac{3 \sqrt{2}}{(3+k^2)^2 t_{\cdot 2}}$	$\frac{3 i \sqrt{2} k}{(3+k^2)^2 t_{\cdot 2}}$	0	0	0	0							
$\overset{1}{\cdot}\sigma^{\perp} \dagger$	$\alpha\beta$	$\frac{3 \sqrt{2}}{(3+k^2)^2 t_{\cdot 2}}$	$\frac{3}{(3+k^2)^2 t_{\cdot 2}}$	$\frac{3 i k}{(3+k^2)^2 t_{\cdot 2}}$	0	0	0	0							
$\overset{1}{\cdot}\tau^{\parallel} \dagger$	$\alpha\beta$	$-\frac{3 i \sqrt{2} k}{(3+k^2)^2 t_{\cdot 2}}$	$-\frac{3 i k}{(3+k^2)^2 t_{\cdot 2}}$	$\frac{3 k^2}{(3+k^2)^2 t_{\cdot 2}}$	0	0	0	0							
$\overset{1}{\cdot}\sigma^{\parallel} \dagger$	α	0	0	0	$-\frac{1}{k^2 r_{\cdot 1}}$	0	0	0							
$\overset{1}{\cdot}\sigma^{\perp} \dagger$	α	0	0	0	0	0	0	0							
$\overset{1}{\cdot}\tau^{\parallel} \dagger$	α	0	0	0	0	0	0	0							
$\overset{1}{\cdot}\tau^{\perp} \dagger$	α	0	0	0	0	0	0	0	$\overset{2}{\cdot}\sigma^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\tau^{\parallel}_{\alpha\beta}$	$\overset{2}{\cdot}\sigma^{\parallel}_{\alpha\beta\chi}$				
$\overset{2}{\cdot}\sigma^{\parallel} \dagger$	$\alpha\beta$	0	0	0					0	0	0				
$\overset{2}{\cdot}\tau^{\parallel} \dagger$	$\alpha\beta$	0	0	0					0	0	0				
$\overset{2}{\cdot}\sigma^{\parallel} \dagger$	$\alpha\beta\chi$	0	0	0					0	0	$\frac{1}{k^2 r_{\cdot 1}}$				

Source constraints

Spin-parity form	Covariant form	Multiplicities
$\overset{0}{\cdot}\tau^{\perp} == 0$	$\partial_{\beta} \partial_{\alpha \tau} (\Delta + \mathcal{K})^{\alpha\beta} == 0$	1
$\overset{0}{\cdot}\tau^{\parallel} == 0$	$\partial_{\beta} \partial_{\alpha \tau} (\Delta + \mathcal{K})^{\alpha\beta} == \partial_{\beta} \partial^{\beta} \tau (\Delta + \mathcal{K})^{\alpha}_{\alpha}$	1
$\overset{0}{\cdot}\sigma^{\parallel} == 0$	$\partial_{\beta} \sigma^{\alpha \beta}_{\alpha} == 0$	1
$\overset{1}{\cdot}\tau^{\perp}^{\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta \tau} (\Delta + \mathcal{K})^{\alpha\beta}$	3
$\overset{1}{\cdot}\tau^{\parallel}^{\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\beta\chi} == \partial_{\chi} \partial^{\chi} \partial_{\beta \tau} (\Delta + \mathcal{K})^{\beta\alpha}$	3
$\overset{1}{\cdot}\sigma^{\perp}^{\alpha} == 0$	$\partial_{\chi} \partial_{\beta} \sigma^{\beta\alpha\chi} == 0$	3
$i k \overset{1}{\cdot}\sigma^{\parallel\alpha\beta} + \overset{1}{\cdot}\tau^{\parallel\alpha\beta} == 0$	$\partial_{\chi} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\beta\chi} + \partial_{\chi} \partial^{\beta} \tau (\Delta + \mathcal{K})^{\chi\alpha} + \partial_{\chi} \partial^{\chi} \tau (\Delta + \mathcal{K})^{\alpha\beta} + \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi\alpha\delta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\alpha\beta\chi} == \partial_{\chi} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\chi\beta} + \partial_{\chi} \partial^{\beta} \tau (\Delta + \mathcal{K})^{\alpha\chi} + \partial_{\chi} \partial^{\chi} \tau (\Delta + \mathcal{K})^{\beta\alpha} + \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi\beta\delta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\beta\alpha\chi}$	3
$\overset{1}{\cdot}\sigma^{\parallel\alpha\beta} == \overset{1}{\cdot}\sigma^{\perp\alpha\beta}$	$3 \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi\beta\delta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\beta\alpha\chi} + 2 \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\chi\alpha\beta} == 3 \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi\alpha\delta} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\alpha\beta\chi}$	3
$\overset{2}{\cdot}\tau^{\parallel\alpha\beta} == 0$	$4 \partial_{\delta} \partial_{\chi} \partial^{\beta} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\chi\delta} + 2 \partial_{\delta} \partial^{\delta} \partial^{\beta} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\chi}_{\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\alpha\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi} \tau (\Delta + \mathcal{K})^{\beta\alpha} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi \tau} (\Delta + \mathcal{K})^{\chi\delta} == 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\beta\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\alpha} \tau (\Delta + \mathcal{K})^{\chi\beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta + \mathcal{K})^{\alpha\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\beta} \tau (\Delta + \mathcal{K})^{\chi\alpha} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \tau (\Delta + \mathcal{K})^{\chi}_{\chi}$	5
$\overset{2}{\cdot}\sigma^{\parallel\alpha\beta} == 0$	$3 \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi\beta\delta} + 3 \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi\alpha\delta} + 2 \eta^{\alpha\beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \sigma^{\chi}_{\chi}{}^{\delta} == 2 \partial_{\delta} \partial^{\beta} \partial^{\alpha} \sigma^{\chi}_{\chi}{}^{\delta} + 3 \left(\partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\alpha\beta\chi} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\beta\alpha\chi} \right)$	5
Total expected gauge generators:		28

Massive spectrum



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

Massless spectrum

(No particles)

Unitarity conditions

$$r_{\cdot 2} < 0 \&\& t_{\cdot 2} > 0$$