# $\iiint\!\!\int\!\!\!\int\!\!\!\int\!\!\!\int\!\!\!\left[\frac{1}{6}\left(-4\,t_{\overset{\bullet}{3}}\,\,\mathcal{A}^{\alpha\,\prime}_{\phantom{\alpha\,\prime}$ $\partial_{\theta}f_{i}^{\ \theta} + 8\,r_{\bullet}\,\partial_{\beta}\mathcal{R}_{\alpha\,i\,\theta}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} - 4\,r_{\bullet}\,\partial_{\beta}\mathcal{R}_{\alpha\,\theta\,i}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} + 4\,r_{\bullet}\,\partial_{\beta}\mathcal{R}_{i\,\theta\,\alpha}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} - 2\,r_{\bullet}\,\partial_{i}\mathcal{R}_{\alpha\beta\,\theta}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} + 2\,r_{\bullet}\,\partial_{\theta}\mathcal{R}_{\alpha\beta\,i}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} - 2\,r_{\bullet}\,\partial_{i}\mathcal{R}_{\alpha\beta\,\theta}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} + 2\,r_{\bullet}\,\partial_{\theta}\mathcal{R}_{\alpha\beta\,i}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} - 2\,r_{\bullet}\,\partial_{\theta}\mathcal{R}_{\alpha\beta\,i}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} + 2\,r_{\bullet}\,\partial_{\theta}\mathcal{R}_{\alpha\beta\,i}\,\partial^{\theta}\mathcal{R}^{\alpha\beta\,i} - 2\,r_{\bullet}\,\partial_{\theta}\mathcal{R}^{\alpha\beta\,i} - 2\,r_{\bullet}\,\partial_{\theta}$ $4r_{2}\partial_{\theta}\mathcal{R}_{\alpha_{1}\beta_{0}}\partial^{\theta}\mathcal{R}^{\alpha\beta_{1}} + 6r_{5}\partial_{\beta}\mathcal{R}_{\theta_{K}}^{\kappa}\partial^{\theta}\mathcal{R}^{\alpha_{1}}_{\alpha_{0}} - 6r_{5}\partial_{\theta}\mathcal{R}_{\beta_{K}}^{\kappa}\partial^{\theta}\mathcal{R}^{\alpha_{1}}_{\alpha_{0}} + 4t_{2}\mathcal{R}_{\beta_{K}}\partial^{\theta}f^{\alpha_{1}} + 2t_{2}\partial_{\alpha}f_{\beta_{K}}\partial^{\theta}f^{\alpha_{1}}_{\alpha_{0}} - t_{2}\partial_{\alpha}f_{\beta_{K}}\partial^{\theta}f^{\alpha_{1}}_{\alpha_{0}} - t_{2}\partial_{\alpha}f^{\alpha_{1}}_{\alpha_{0}} - t_{2}\partial_{\alpha}f^{\alpha_$ $\frac{t \cdot \partial_{i} f_{\alpha \theta}}{2} \partial^{\theta} f^{\alpha i} + t \cdot \frac{\partial_{\theta} f_{\alpha i}}{2} \partial^{\theta} f^{\alpha i} - t \cdot \frac{\partial_{\theta} f_{\alpha \alpha}}{2} \partial^{\theta} f^{\alpha i} - 4 t \cdot \frac{\mathcal{A}_{\alpha \theta i}}{2} \left( \mathcal{A}^{\alpha i \theta} + \partial^{\theta} f^{\alpha i} \right) + 2 t \cdot \frac{\mathcal{A}_{\alpha i \theta}}{2} \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) - 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i} \right) + 2 \left( \mathcal{A}^{\alpha i \theta} + 2 \partial^{\theta} f^{\alpha i}$ $6r_{5}^{2}\partial_{\alpha}\mathcal{R}^{\alpha\beta}\partial_{\kappa}\mathcal{R}_{\beta}^{\kappa} + 12r_{5}^{2}\partial^{\theta}\mathcal{R}^{\alpha\beta}\partial_{\kappa}\mathcal{R}_{\beta}^{\kappa} + 6r_{5}^{2}\partial_{\alpha}\mathcal{R}^{\alpha\beta}\partial_{\kappa}\mathcal{R}_{\theta}^{\kappa} - 12r_{5}^{2}\partial^{\theta}\mathcal{R}^{\alpha\beta}\partial_{\kappa}\mathcal{R}_{\theta}^{\kappa}) ][t, x, y, z] dz dy dx dt$ Wave operator

0

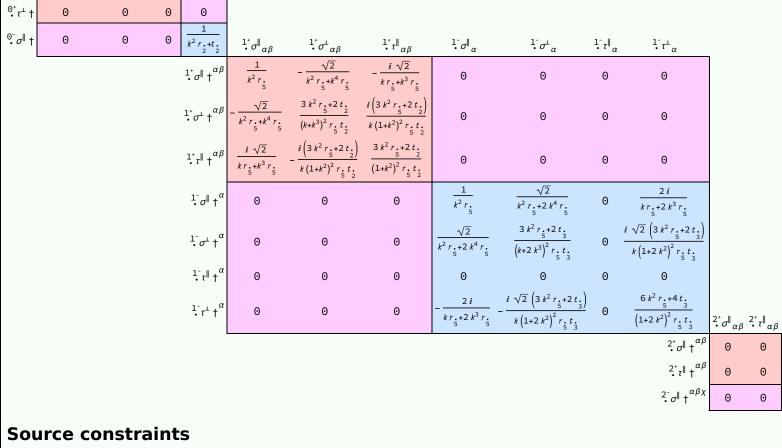
## t. $-i\sqrt{2} kt$ . 0

**PSALTer results panel** 

<sup>0⁺</sup> <sub>•</sub> f <sup>∥</sup> †	$i\sqrt{2} kt$	$2 k^2 t$	Θ	0								
<sup>0</sup> ⁺ f <sup>⊥</sup> †	0	0	0	0								
<sup>⊙-</sup> Æ <sup>∥</sup> †	0	0	Θ	$k^2 r \cdot + t \cdot 2$	${}^{1^{\scriptscriptstyle +}}_{}\mathcal{A}^{\parallel}_{lphaeta}$	${}^{1^{\scriptscriptstyle +}}_{\:\raisebox{1pt}{\text{\circle*{1.5}}}} {\mathcal A}^{\scriptscriptstyle \perp}{}_{\alpha\beta}$	$\left. \stackrel{1^{+}}{\cdot} f \right _{\alpha\beta}$	${}^{1^{-}}_{\bullet}\mathcal{A}^{\parallel}{}_{\alpha}$	${}^{1^{\scriptscriptstyle{-}}}_{\:\raisebox{1pt}{\text{\circle*{1.5}}}} \mathscr{A}^{^{\perp}}{}_{\alpha}$	$\frac{1}{\bullet}f^{\parallel}_{\alpha}$	$\frac{1}{\cdot}f^{\perp}_{\alpha}$	
				$^{1^{+}}\mathcal{A}^{\parallel}$ † $^{lphaeta}$	$k^2 r_1 + \frac{2t_1}{3}$	$\frac{\sqrt{2} \ t_{\frac{1}{2}}}{3}$	$\frac{1}{3} i \sqrt{2} kt.$	0	0	0	0	
				$\overset{1^{+}}{\cdot}\mathcal{A}^{\perp} \dagger^{\alpha\beta}$	$\frac{\sqrt{2} t_{\frac{2}{2}}}{3}$	$\frac{t}{2}$	$\frac{ikt}{2}$	0	0	0	0	
				$f^{\dagger}f^{\dagger} \uparrow^{\alpha\beta}$	$-\frac{1}{3} i \sqrt{2} kt.$	$-\frac{1}{3} ikt_{2}$	$\frac{k^2 t_{\frac{1}{2}}}{3}$	0	0	0	0	
				$^{1^{-}}\mathcal{A}^{\parallel}\uparrow^{lpha}$	0	Θ	Θ	$k^2 r_{.} + \frac{2t_{.}}{3}$	$-\frac{\sqrt{2}\ t_{\frac{3}{3}}}{3}$	0	$-\frac{2}{3}ikt$	
				$^{1}$ $\mathcal{A}^{\perp}$ $\dagger^{\alpha}$	0	Θ	Θ	9	$\frac{t}{3}$	0	$\frac{1}{3} i \sqrt{2} kt.$	
				$f^{\parallel} \uparrow^{\alpha}$	Θ	0	Θ	Θ	Θ	0	0	
				$\frac{1}{\cdot}f^{\perp}\uparrow^{\alpha}$	Θ	Θ	Θ	$\frac{2ikt.}{3}$	$-\frac{1}{3} i \sqrt{2} kt_{3}$	0	$\frac{2 k^2 t}{3}$	2 <sup>+</sup> 5
											$\mathcal{A}^{+}\mathcal{A}^{\parallel}$ †	
											$^{2^{+}}_{\bullet}f^{\parallel}\uparrow^{\alpha\beta}$	-
											$2^{-}\alpha \parallel + \alpha \beta \chi$	

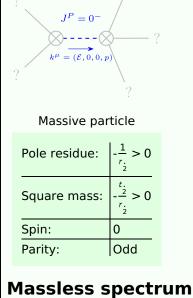
 $0 \cdot \tau^{\parallel} + \frac{i \sqrt{2} k}{(1 + 2 k^2)^2 t_3} \frac{2 k^2}{(1 + 2 k^2)^2 t_3} 0$ 

Saturated propagator



Spin-parity form	Covariant form	Multiplicities			
<sup>0+</sup> τ <sup>⊥</sup> == 0	$\partial_{\beta}\partial_{\alpha}\tau \left(\Delta + \mathcal{K}\right)^{\alpha\beta} == 0$	1			
$-2 i k^{\Theta^+} \sigma^{\parallel} + {}^{\Theta^+} \tau^{\parallel} == \Theta$	$\partial_{\beta}\partial_{\alpha}\tau \left(\Delta + \mathcal{K}\right)^{\alpha\beta} = \partial_{\beta}\partial^{\beta}\tau \left(\Delta + \mathcal{K}\right)^{\alpha}_{\alpha} + 2 \partial_{\chi}\partial^{\chi}\partial_{\beta}\sigma^{\alpha}_{\alpha}^{\beta}$	1			
$\frac{2 i k \cdot 1^{-} \sigma^{\perp}^{\alpha} + \cdot 1^{-} \tau^{\perp}^{\alpha} == 0}{2 i k \cdot 1^{-} \sigma^{\perp}^{\alpha}}$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}{}_{\tau}\left(\Delta+\mathcal{K}\right)^{\beta\chi} = \partial_{\chi}\partial^{\chi}\partial_{\beta\tau}\left(\Delta+\mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3			
$\frac{1}{\tau} \eta^{\alpha} = 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}{}_{\tau}\left(\Delta+\mathcal{K}\right)^{\beta\chi} = \partial_{\chi}\partial^{\chi}\partial_{\beta\tau}\left(\Delta+\mathcal{K}\right)^{\beta\alpha}$	3			
$i k \cdot 1^+ \sigma^{\perp} \alpha^{\beta} + \cdot 1^+ \tau^{\parallel} \alpha^{\beta} = 0$	$\partial_{\chi}\partial^{\alpha}\tau\left(\Delta+\mathcal{K}\right)^{\beta\chi} + \partial_{\chi}\partial^{\beta}\tau\left(\Delta+\mathcal{K}\right)^{\chi\alpha} + \partial_{\chi}\partial^{\chi}\tau\left(\Delta+\mathcal{K}\right)^{\alpha\beta} + 2\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\beta\delta} + 2\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta} = =$	3			
	$\partial_{\chi}\partial^{\alpha}_{\tau}\left(\Delta+\mathcal{K}\right)^{\chi\beta} + \partial_{\chi}\partial^{\beta}_{\tau}\left(\Delta+\mathcal{K}\right)^{\alpha\chi} + \partial_{\chi}\partial^{\chi}_{\tau}\left(\Delta+\mathcal{K}\right)^{\beta\alpha} + 2 \partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$				
$2^{-}\sigma^{\parallel}^{\alpha\beta\chi} = 0$	$3 \partial_{\epsilon} \partial_{\delta} \partial^{\chi} \partial^{\alpha} \sigma^{\delta \beta \epsilon} + 3 \partial_{\epsilon} \partial^{\epsilon} \partial^{\chi} \partial^{\alpha} \sigma^{\delta \beta}_{ \delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\alpha \chi \delta} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\chi \alpha \delta} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\beta} \sigma^{\delta \alpha \chi} + 2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\delta \alpha \delta} +$	5			
	$4 \ \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\delta \alpha \beta} + 2 \ \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\alpha \beta \chi} + 3 \ \eta^{\beta \chi} \ \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\alpha} \sigma^{\delta}_{\ \delta} + 3 \ \eta^{\alpha \chi} \ \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial_{\delta} \sigma^{\delta \beta \epsilon} + 3 \ \eta^{\beta \chi} \ \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\epsilon} \sigma^{\delta \alpha}_{\ \delta} = 0$				
	$3  \partial_{\epsilon} \partial_{\delta} \partial^{\chi} \partial^{\beta} \sigma^{\delta \alpha \epsilon} + 3  \partial_{\epsilon} \partial^{\epsilon} \partial^{\chi} \partial^{\beta} \sigma^{\delta \alpha}_{ \delta} + 2  \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\beta \chi \delta} + 4  \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\chi \beta \delta} + 2  \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\alpha} \sigma^{\delta \beta \chi} + 2  \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\chi} \sigma^{\alpha \beta \delta} + 2  \partial_{\epsilon} \partial^{\epsilon} \partial^{\alpha} \partial^{\alpha}$				
	$2 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\beta \alpha \chi} + 4 \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial^{\delta} \sigma^{\chi \alpha \beta} + 3 \eta^{\alpha \chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\beta} \sigma^{\delta}_{\delta} \partial^{\epsilon} + 3 \eta^{\beta \chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial_{\delta} \sigma^{\delta \alpha \epsilon} + 3 \eta^{\alpha \chi} \partial_{\phi} \partial^{\phi} \partial_{\epsilon} \partial^{\epsilon} \sigma^{\delta \beta}_{\delta}$				
2 <sup>+</sup> <sub>τ</sub>    <sup>αβ</sup> == 0	$4 \partial_{\delta} \partial_{\chi} \partial^{\beta} \partial^{\alpha}_{\tau} (\Delta + \mathcal{K})^{\chi \delta} + 2 \partial_{\delta} \partial^{\delta} \partial^{\beta} \partial^{\alpha}_{\tau} (\Delta + \mathcal{K})^{\chi}_{\chi} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi}_{\tau} (\Delta + \mathcal{K})^{\alpha \beta} + 3 \partial_{\delta} \partial^{\delta} \partial_{\chi} \partial^{\chi}_{\tau} (\Delta + \mathcal{K})^{\beta \alpha} + 2 \eta^{\alpha \beta} \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \partial_{\chi \tau} (\Delta + \mathcal{K})^{\chi \delta} = 0$	5			
	$ 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} $				
$2^+_{\bullet}\sigma^{\parallel}^{\alpha\beta} = 0$	$3  \partial_{\delta} \partial_{\chi} \partial^{\alpha} \sigma^{\chi \beta \delta} + 3  \partial_{\delta} \partial_{\chi} \partial^{\beta} \sigma^{\chi \alpha \delta} + 2  \eta^{\alpha \beta}  \partial_{\epsilon} \partial^{\epsilon} \partial_{\delta} \sigma^{\chi}_{\chi}^{\delta} = 2  \partial_{\delta} \partial^{\beta} \partial^{\alpha} \sigma^{\chi}_{\chi}^{\delta} + 3  \left( \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\alpha \beta \chi} + \partial_{\delta} \partial^{\delta} \partial_{\chi} \sigma^{\beta \alpha \chi} \right)$	5			
Total expected gau	Total expected gauge generators:				

## **Massive spectrum**



### (No particles)

## **Unitarity conditions**

r. < 0 && t. > 0