PSALTer results panel

$$\mathcal{S} == \iiiint \Big(h^{\alpha\beta}\ \mathcal{T}_{\alpha\beta} + \alpha_2\, \partial_\alpha h^{\alpha\beta}\, \partial_\chi h_\beta{}^\chi + \frac{1}{2}\alpha_1 \left(\partial_\beta h^\chi{}_\chi\, \partial^\beta h^\alpha{}_\alpha - 2\, \partial^\beta h^\alpha{}_\alpha\, \partial_\chi h_\beta{}^\chi - \partial_\chi h_{\alpha\beta}\, \partial^\chi h^{\alpha\beta}\right)\Big)[t, x, y, z]\, dz\, dy\, dx\, dt$$

Wave operator

$$\begin{array}{c|cc}
 & {}^{0^+}h^{\perp} & {}^{0^+}h^{\parallel} \\
\hline
{}^{0^+}h^{\perp}\dagger & (-\alpha_1 + \alpha_2)\, k^2 & 0 \\
{}^{0^+}h^{\parallel}\dagger & 0 & \alpha_1 k^2
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{1^-}h^{\perp}{}_{\alpha} \\
\hline
{}^{1^-}h^{\perp}\dagger^{\alpha} & \frac{1}{2}(-\alpha_1 + \alpha_2)\, k^2
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{2^+}h^{\parallel}{}_{\alpha\beta} \\
\hline
{}^{2^+}h^{\parallel}\dagger^{\alpha\beta} & -\frac{\alpha_1 k^2}{2}
\end{array}$$

Saturated propagator

$$\begin{array}{c|cc}
 & {}^{0^+}\mathcal{T}^{\perp} & {}^{0^+}\mathcal{T}^{\parallel} \\
\hline
{}^{0^+}\mathcal{T}^{\perp}\dagger & \frac{1}{(-\alpha_1+\alpha_2)\, k^2} & 0 \\
{}^{0^+}\mathcal{T}^{\parallel}\dagger & 0 & \frac{1}{\alpha_1 k^2}
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{1^-}\mathcal{T}^{\perp}{}_{\alpha} \\
\hline
{}^{1^-}\mathcal{T}^{\perp}\dagger^{\alpha} & -\frac{2}{(\alpha_1-\alpha_2)\, k^2}
\end{array}
\qquad
\begin{array}{c|c}
 & {}^{2^+}\mathcal{T}^{\parallel}{}_{\alpha\beta} \\
\hline
{}^{2^+}\mathcal{T}^{\parallel}\dagger^{\alpha\beta} & -\frac{2}{\alpha_1 k^2}
\end{array}$$

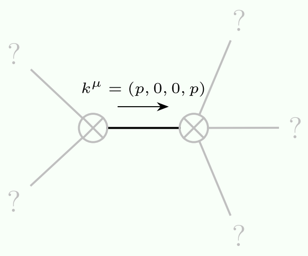
Source constraints

(No source constraints)

Massive spectrum

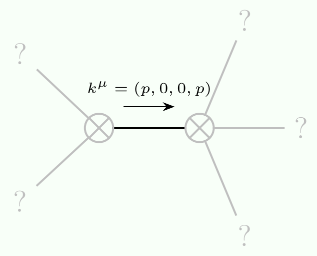
(No particles)

Massless spectrum



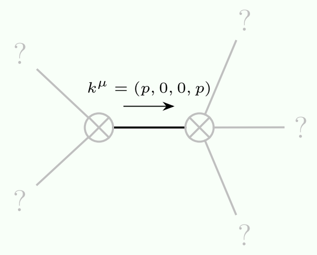
Massless particle

Pole residue:	$-\frac{p^2}{\alpha_1} > 0$
Polarisations:	2



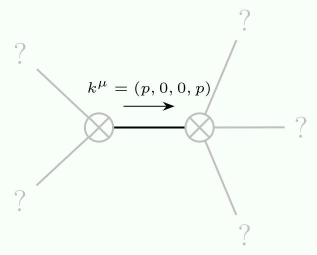
Massless particle

Pole residue:	$\frac{(-2\alpha_1+\alpha_2)\, p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	2



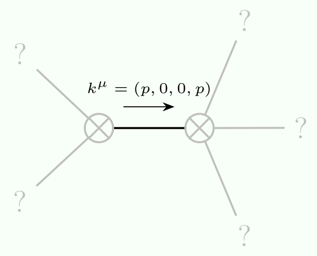
Massless particle

Pole residue:	$\frac{(2\alpha_1-\alpha_2)\, p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	2



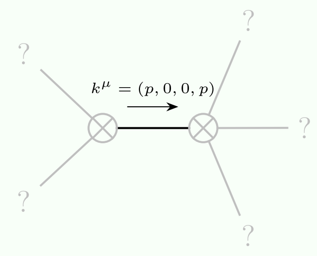
Massless particle

Pole residue:	$\frac{(-6\alpha_1+\alpha_2)\, p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	1



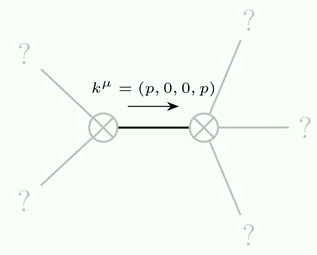
Massless particle

Pole residue:	$\frac{(6\alpha_1-\alpha_2)\, p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	1



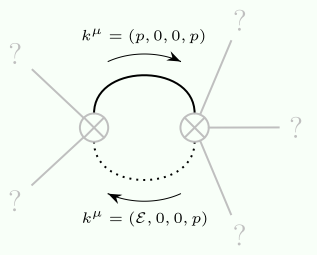
Massless particle

Pole residue:	$\frac{\left(-2\alpha_1+\alpha_2-\sqrt{20\alpha_1^2-36\alpha_1\alpha_2+17\alpha_2^2}\right) p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	1



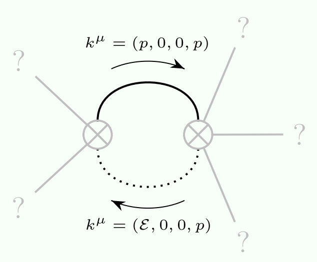
Massless particle

Pole residue:	$\frac{\left(-2\alpha_1+\alpha_2+\sqrt{20\alpha_1^2-36\alpha_1\alpha_2+17\alpha_2^2}\right) p^2}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	1



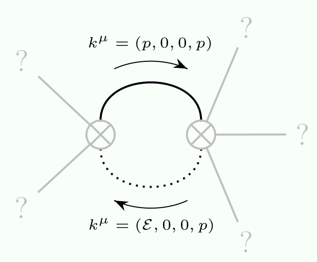
Quartic pole

Pole residue:	$0 < \frac{\alpha_2 p^4}{\alpha_1^2-\alpha_1\alpha_2}\ \&\&\ \frac{\alpha_2 p^4}{\alpha_1^2-\alpha_1\alpha_2} > 0$
Polarisations:	2



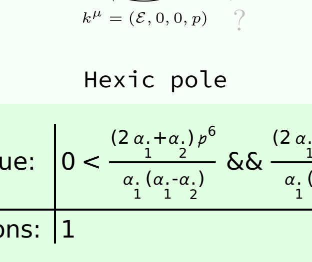
Quartic pole

Pole residue:	$0 < \frac{1}{\alpha_1(\alpha_1-\alpha_2)}\left(6\alpha_1 + 3\alpha_2 - \sqrt{3}\sqrt{(76\alpha_1^2 - 116\alpha_1\alpha_2 + 83\alpha_2^2)}\right) p^4\ \&\&\ \frac{1}{\alpha_1(\alpha_1-\alpha_2)}\left(6\alpha_1 + 3\alpha_2 - \sqrt{3}\sqrt{(76\alpha_1^2 - 116\alpha_1\alpha_2 + 83\alpha_2^2)}\right) p^4 > 0$
Polarisations:	1



Quartic pole

Pole residue:	$0 < \frac{1}{\alpha_1(\alpha_1-\alpha_2)}\left(6\alpha_1 + 3\alpha_2 + \sqrt{3}\sqrt{(76\alpha_1^2 - 116\alpha_1\alpha_2 + 83\alpha_2^2)}\right) p^4\ \&\&\ \frac{1}{\alpha_1(\alpha_1-\alpha_2)}\left(6\alpha_1 + 3\alpha_2 + \sqrt{3}\sqrt{(76\alpha_1^2 - 116\alpha_1\alpha_2 + 83\alpha_2^2)}\right) p^4 > 0$
Polarisations:	1



Hexic pole

Pole residue:	$0 < \frac{(2\alpha_1+\alpha_2)\, p^6}{\alpha_1(\alpha_1-\alpha_2)}\ \&\&\ \frac{(2\alpha_1+\alpha_2)\, p^6}{\alpha_1(\alpha_1-\alpha_2)} > 0$
Polarisations:	1

Unitarity conditions

(Demonstrably impossible)