PSALTer results panel

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

Wave operator

$$\begin{array}{c|cc|c|c}
 & 0^+ h^{\perp} & 0^+ h^{\parallel} & 1^- h^{\perp}{}_{\alpha} & 2^+ h^{\parallel}{}_{\alpha\beta} \\
\hline
0^+ h^{\perp}\,\dagger & \frac{1}{2}(\alpha_1 - \alpha_2) k^2 & 0 & & \\
0^+ h^{\parallel}\,\dagger & 0 & \frac{1}{2}(3\alpha_1 - \alpha_2) k^2 & & \\
\hline
1^- h^{\perp}\,\dagger^{\alpha} & & & \frac{1}{2}(\alpha_1 - \alpha_2) k^2 & \\
\hline
2^+ h^{\parallel}\,\dagger^{\alpha\beta} & & & & -\frac{\alpha_2 k^2}{2}
\end{array}$$

Saturated propagator

$$\begin{array}{c|cc|c|c}
 & 0^+ \mathcal{T}^{\perp} & 0^+ \mathcal{T}^{\parallel} & 1^- \mathcal{T}^{\perp}{}_{\alpha} & 2^+ \mathcal{T}^{\parallel}{}_{\alpha\beta} \\
\hline
0^+ \mathcal{T}^{\perp}\,\dagger & \frac{2}{(\alpha_1-\alpha_2) k^2} & 0 & & \\
0^+ \mathcal{T}^{\parallel}\,\dagger & 0 & \frac{2}{(3\alpha_1-\alpha_2) k^2} & & \\
\hline
1^- \mathcal{T}^{\perp}\,\dagger^{\alpha} & & & \frac{2}{(\alpha_1-\alpha_2) k^2} & \\
\hline
2^+ \mathcal{T}^{\parallel}\,\dagger^{\alpha\beta} & & & & -\frac{2}{\alpha_2 k^2}
\end{array}$$

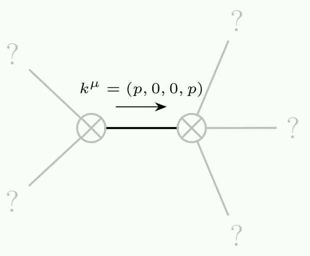
Source constraints

(No source constraints)

Massive spectrum

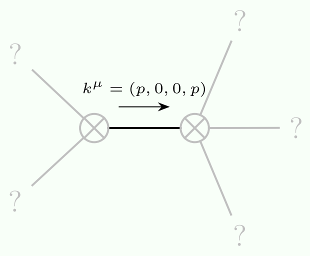
(No particles)

Massless spectrum



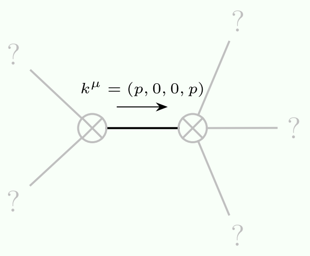
Massless particle

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



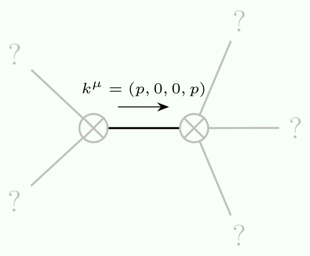
Massless particle

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



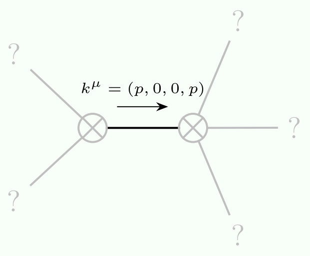
Massless particle

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



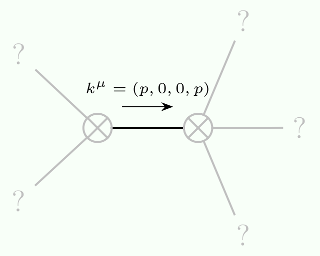
Massless particle

Pole residue:	$-\frac{(\alpha_1{}^2-6\alpha_1\alpha_2+2\alpha_2{}^2)p^2}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2} > 0$
Polarisations:	1



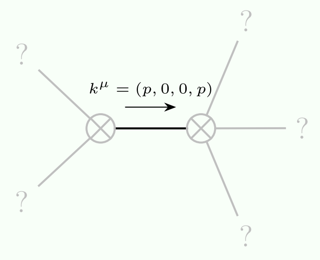
Massless particle

Pole residue:	$\frac{(\alpha_1{}^2-6\alpha_1\alpha_2+2\alpha_2{}^2)p^2}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2} > 0$
Polarisations:	1



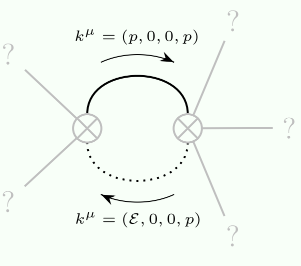
Massless particle

Pole residue:	$-(((2\alpha_1{}^2 - 5\alpha_1\alpha_2 + 2\alpha_2{}^2 + \sqrt{(\alpha_1{}^2(4\alpha_1{}^2 - 8\alpha_1\alpha_2 + 5\alpha_2{}^2))})p^2)/((\alpha_1 - \alpha_2)(3\alpha_1 - \alpha_2)\alpha_2)) > 0$
Polarisations:	1



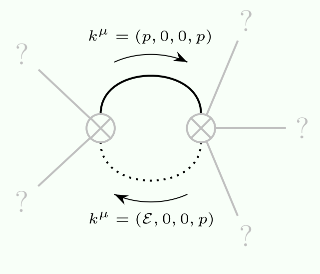
Massless particle

Pole residue:	$((-2\alpha_1{}^2 + 5\alpha_1\alpha_2 - 2\alpha_2{}^2 + \sqrt{(\alpha_1{}^2(4\alpha_1{}^2 - 8\alpha_1\alpha_2 + 5\alpha_2{}^2))})p^2)/((\alpha_1 - \alpha_2)(3\alpha_1 - \alpha_2)\alpha_2) > 0$
Polarisations:	1



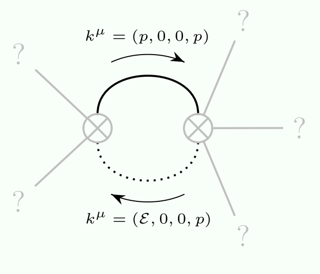
Quartic pole

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



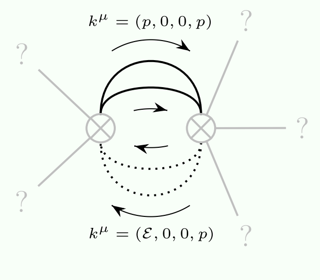
Quartic pole

Pole residue:	$0 < -\frac{\alpha_1(3\alpha_1+\sqrt{105\alpha_1{}^2-96\alpha_1\alpha_2+48\alpha_2{}^2})p^4}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2}\ \&\&\ -\frac{\alpha_1(3\alpha_1+\sqrt{105\alpha_1{}^2-96\alpha_1\alpha_2+48\alpha_2{}^2})p^4}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2} > 0$
Polarisations:	1



Quartic pole

Pole residue:	$0 < \frac{\alpha_1(-3\alpha_1+\sqrt{105\alpha_1{}^2-96\alpha_1\alpha_2+48\alpha_2{}^2})p^4}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2}\ \&\&\ \frac{\alpha_1(-3\alpha_1+\sqrt{105\alpha_1{}^2-96\alpha_1\alpha_2+48\alpha_2{}^2})p^4}{(\alpha_1-\alpha_2)(3\alpha_1-\alpha_2)\alpha_2} > 0$
Polarisations:	1



Hexic pole

Pole residue:	$0 < -\frac{\alpha_1{}^2 p^6}{3\alpha_1{}^2\alpha_2-4\alpha_1\alpha_2{}^2+\alpha_2{}^3}\ \&\&\ -\frac{\alpha_1{}^2 p^6}{3\alpha_1{}^2\alpha_2-4\alpha_1\alpha_2{}^2+\alpha_2{}^3} > 0$
Polarisations:	1

Unitarity conditions

(Demonstrably impossible)