PSALTer results panel

Wave operator and propagator

	$1^+.\mathcal{R}^{\parallel}{}_{\alpha\beta}$	$1^+.\mathcal{R}^{\perp}{}_{\alpha\beta}$	$1^+.f^{\parallel}{}_{\alpha\beta}$
$1^+.\mathcal{R}^{\parallel}{}_{\alpha\beta}$	$\frac{1}{4}(12\beta_{1.}-10\beta_{2.}+2(\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.})k^2+\mathrm{MPl})$	$\frac{4\beta_{1.}-6\beta_{2.}+\mathrm{MPl}}{2\sqrt{2}}$	$\frac{i k(4\beta_{1.}-6\beta_{2.}+\mathrm{MPl})}{2\sqrt{2}}$
$1^+.\mathcal{R}^{\perp}{}_{\alpha\beta}$	$\frac{4\beta_{1.}-6\beta_{2.}+\mathrm{MPl}}{2\sqrt{2}}$	$2\beta_{1.}-\beta_{2.}$	$i(2\beta_{1.}-\beta_{2.})k$
$1^+.f^{\parallel}{}_{\alpha\beta}$	$-\frac{i k(4\beta_{1.}-6\beta_{2.}+\mathrm{MPl})}{2\sqrt{2}}$	$-i(2\beta_{1.}-\beta_{2.})k$	$(2\beta_{1.}-\beta_{2.})k^2$
$1^+.\mathcal{R}^{\parallel}{}_{\alpha}$	0	0	$\beta_{1.}+\frac{1}{72}(36\beta_{2.}+72\beta_{3.}+\theta(k+6k\psi^2+18\mathrm{MPl})$
$1^-.\mathcal{R}^{\perp}{}_{\alpha}$	0	0	$-\frac{72\beta_{3.}+k^2(\theta+6\theta\psi+36\mathrm{MPl})}{72\sqrt{2}}$
$1^+.f^{\parallel}{}_{\alpha}$	0	0	$\frac{1}{72}ik(72\beta_{3.}+k^2(\theta+6\theta\psi+36\mathrm{MPl}))$
$1^-.\mathcal{R}^{\parallel}{}_{\alpha}$	0	0	$-\frac{i k(72(2\beta_{1.}+\beta_{2.}+\beta_{3.})+k^2\theta)}{72\sqrt{2}}$
$1^-.\mathcal{R}^{\perp}{}_{\alpha}$	0	0	$\beta_{1.}+\frac{\beta_{2.}+\beta_{3.}}{2}+\frac{k^2\theta}{144}$
$1^-.f^{\parallel}{}_{\alpha}$	0	0	$-\frac{i k(72(2\beta_{1.}+\beta_{2.}+\beta_{3.})+k^2\theta)}{72\sqrt{2}}$
$1^-.f^{\perp}{}_{\alpha}$	0	0	$(2\beta_{1.}+\beta_{2.}+\beta_{3.})k^2+\frac{k^4\theta}{72}$

$$\mathcal{S}=\int\int\int\int(\mathcal{R}^{\alpha\beta\chi}\ \sigma_{\alpha\beta\chi}+f^{\alpha\beta}\ \tau(\Delta+\mathcal{K})_{\alpha\beta}-\frac{1}{2}\mathrm{MPl}(\mathcal{R}_{,\kappa\theta}\mathcal{R}'{}^{\theta}{}_{,}{}^{\theta}\mathcal{R}'{}_{\theta,}{}^{\kappa}+\mathcal{R}'{}^{\theta}{}_{,}{}^{\theta}\mathcal{R}'{}_{\theta,}{}^{\kappa}+2\ f'{}^{\theta}{}_{,}{}^{\theta}\partial_{\theta}\mathcal{R}'{}_{,}{}^{\kappa}-2\ \partial_{\theta}\mathcal{R}'{}_{,}{}^{\theta}{}_{,}$$
$$2\ f'{}^{\theta}{}_{,}{}^{\theta}\partial_{\kappa}\mathcal{R}'{}_{,}{}^{\kappa}{}_{\theta}+2\ f'{}_{,}\partial_{\kappa}\mathcal{R}'{}^{\theta\kappa}{}_{\theta})+\beta_{3.}(-\mathcal{R}'{}^{\theta}{}_{,}{}^{\theta}\mathcal{R}'{}_{\theta,}{}^{\kappa}+2\ \mathcal{R}'{}_{,}{}^{\kappa}{}_{\theta}\mathcal{R}'{}_{,}{}^{\kappa}{}_{\theta}\partial_{\theta}f'{}_{,}-$$
$$2\ \mathcal{R}'{}_{\theta,}{}^{\kappa}\partial^{\theta}f'{}_{,}+\partial_{\theta}f'{}^{\kappa}{}_{,}\partial^{\theta}f'{}_{,}+\partial_{\theta}f'{}_{,}\partial^{\theta}f'{}_{,}{}^{\kappa}-2\ \partial^{\theta}f'{}_{,}\partial_{\kappa}f'{}_{\theta})+$$
$$2\ \alpha_{4.}(4\partial_{\iota}\mathcal{R}_{\alpha\theta\kappa}-2\ \partial_{\iota}\mathcal{R}_{\alpha\kappa\theta}-\partial_{\theta}\mathcal{R}_{\alpha\iota\ \kappa}+\partial_{\kappa}\mathcal{R}_{\alpha\iota\ \theta}-2\ \partial_{\kappa}\mathcal{R}_{\alpha\theta\iota})\partial^{\kappa}\mathcal{R}'{}^{\alpha\ \theta}{}_{,}-$$
$$\alpha_{2.}(\partial_{\theta}\mathcal{R}'{}_{,}{}^{\kappa}\partial^{\theta}\mathcal{R}'{}^{\alpha\ }{}_{\alpha}+\partial_{\alpha}\mathcal{R}'{}^{\alpha\ \theta}\partial_{\kappa}\mathcal{R}'{}_{,\theta}{}^{\kappa}-2\ \partial^{\theta}\mathcal{R}'{}^{\alpha\ }{}_{\alpha}\partial_{\kappa}\mathcal{R}'{}_{,}{}^{\kappa}{}_{\theta}-$$
$$4\ \partial_{\iota}\mathcal{R}_{\alpha\theta\kappa}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\ \theta}+2\ \partial_{\iota}\mathcal{R}_{\alpha\kappa\theta}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\ \theta}+2\ \partial_{\kappa}\mathcal{R}_{\alpha\theta\iota}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\ \theta})+$$
$$\frac{1}{72}\theta(-2\ \partial_{\alpha}\mathcal{R}'{}_{\theta,}{}^{\kappa}\ \partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}-12\ \psi\ \partial_{\alpha}\mathcal{R}'{}_{\theta,}{}^{\kappa}\ \partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}+2\ \partial_{\theta}\mathcal{R}'{}_{\alpha,}{}^{\kappa}\ \partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}+$$
$$12\ \psi\ \partial_{\alpha}\mathcal{R}'{}_{\alpha,}{}^{\kappa}\ \partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}+(1+12\ \psi)\partial_{\iota}\mathcal{R}'{}_{\theta,}{}^{\kappa}\ (\partial^{\theta}\mathcal{R}'{}^{\alpha\iota}{}_{\alpha}+\partial^{\theta}\partial^{\alpha}f'{}_{\alpha}{}^{\iota})-$$
$$(1+12\ \psi)\partial_{\theta}\mathcal{R}'{}_{\iota,}{}^{\kappa}\ (\partial^{\theta}\mathcal{R}'{}^{\alpha\iota}{}_{\alpha}+\partial^{\theta}\partial^{\alpha}f'{}_{\alpha}{}^{\iota})-12\ \psi\ \partial\partial_{\iota}f'{}^{\alpha}{}_{\theta}\ \partial_{\kappa}\mathcal{R}'{}_{\alpha\ \theta}^{\ \kappa}+$$
$$12\ \psi\ \partial\mathcal{R}'{}^{\alpha\iota}{}_{\alpha}\ \partial_{\kappa}\mathcal{R}'{}_{\iota,\theta}{}^{\kappa}+12\ \psi\ \partial\partial_{\iota}f'{}^{\alpha}{}_{\theta}\ \partial_{\kappa}\mathcal{R}'{}_{\alpha}{}^{\kappa}{}_{\theta}+12\ \psi\ \partial\partial_{\iota}f'{}^{\alpha\iota}\ \partial_{\kappa}\mathcal{R}'{}_{\theta\ \alpha}^{\ \kappa}-$$
$$12\ \psi\ \partial\mathcal{R}'{}^{\alpha\iota}{}_{\alpha}\ \partial_{\kappa}\mathcal{R}'{}_{\theta,}{}^{\kappa}-12\ \psi\ \partial\partial^{\iota}f'{}^{\alpha}{}_{\alpha}\ \partial_{\kappa}\mathcal{R}'{}_{\theta,}{}^{\kappa}-\partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}\ \partial_{\kappa}\partial_{\alpha}f'{}_{\theta}{}^{\kappa}+$$
$$\partial^{\theta}\partial f'{}^{\alpha}{}_{\alpha}\partial_{\iota}f'{}_{\theta}{}^{\kappa}+\partial^{\theta}\partial_{\iota}f'{}^{\alpha\iota}\ \partial_{\kappa}\partial_{\theta}f'{}^{\kappa}{}_{\alpha}-\partial^{\theta}\partial f'{}^{\alpha}{}_{\alpha}\ \partial_{\kappa}\partial_{\theta}f'{}^{\kappa}{}_{\iota}-$$
$$144\ \psi^2\ \partial_{\iota}\mathcal{R}_{\alpha\theta\kappa}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\iota\ \theta}+72\ \psi^2\ \partial_{\iota}\mathcal{R}_{\alpha\kappa\theta}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\iota\ \theta}+72\ \psi^2\partial_{\kappa}\mathcal{R}_{\alpha\theta\iota}\ \partial^{\kappa}\mathcal{R}'{}^{\alpha\iota\ \theta})+$$
$$2\beta_{1.}(-\mathcal{R}'{}_{,\kappa\theta}{}^{\iota\theta\kappa}+(2\ \mathcal{R}_{\theta\kappa\iota}-\partial_{\iota}f_{,\kappa\theta}+\partial_{\kappa}f_{,\theta\iota})\partial^{\kappa}f'{}^{\iota\ \theta}+$$
$$\beta_{2.}((-2\ \mathcal{R}_{\theta\kappa\iota}-2\ \partial_{\iota}f_{,\theta\kappa}+\partial_{\kappa}f_{,\theta\iota})\partial^{\kappa}f'{}^{\iota\ \theta}-$$
$$\mathcal{R}'{}_{\iota,\theta\kappa}(\mathcal{R}'{}^{\iota\theta\kappa}+2\ \partial^{\kappa}f'{}^{\iota\theta})+\mathcal{R}'{}_{\iota,\kappa\theta}(3\ \mathcal{R}'{}^{\theta\kappa}+4\ \partial^{\kappa}f'{}^{\iota\theta})+$$
$$4\ \alpha_{1.}\partial_{\theta}\mathcal{R}'{}_{\iota}{}^{\theta}{}_{\lambda}\mathcal{R}'{}^{\lambda\iota}{}_{\kappa}{}^{\kappa}-\alpha_{3.}(\partial_{\kappa}\mathcal{R}_{\lambda\ \zeta}^{\ \iota}\partial^{\lambda}\mathcal{R}'{}^{\theta\kappa}{}_{\theta}+(\partial_{\theta}\mathcal{R}'{}^{\theta\kappa\lambda}-2\ \partial^{\lambda}\mathcal{R}'{}^{\theta\kappa}{}_{\theta})\partial_{\lambda}\mathcal{R}'{}_{\kappa}^{\ \zeta})+$$
$$4\ \alpha_{6.}\partial_{\iota}\mathcal{R}_{\lambda\zeta\alpha}\partial^{\zeta}\mathcal{R}'{}^{\alpha\iota}{}^{\lambda})[t,x,y,z]\,d\,z\,d\,y\,d\,x\,d\,t$$

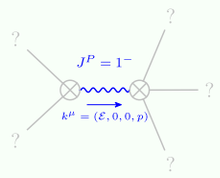
Spin-parity form	Covariant form	Multiplicities
$0^+.\tau^{\perp}==0$	$\partial_{\beta}\partial_{\alpha}\tau(\Delta+\mathcal{K})^{\alpha\beta}==0$	1
$2\,i\ k\,1^-.\sigma^{\perp\alpha}+1^-.\tau^{\perp\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\alpha\beta}+2\ \partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\beta\alpha\chi}$	3
$1^-.\tau^{\parallel\alpha}==0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}==\partial_{\chi}\partial^{\chi}\partial_{\beta}\tau(\Delta+\mathcal{K})^{\beta\alpha}$	3
$i\ k\,1^+.\sigma^{\perp\alpha\beta}+1^+.\tau^{\parallel\alpha\beta}==0$	$\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\beta\chi}+\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\chi\alpha}+$ $\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\alpha\beta}+2\ \partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\chi\ \beta\delta}+2\ \partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\chi\alpha\beta}==$ $\partial_{\chi}\partial^{\alpha}\tau(\Delta+\mathcal{K})^{\chi\ \beta}+\partial_{\chi}\partial^{\beta}\tau(\Delta+\mathcal{K})^{\alpha\chi}+\partial_{\chi}\partial^{\chi}\tau(\Delta+\mathcal{K})^{\beta\alpha}+2\ \partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\chi\alpha\delta}$	3
Total expected gauge generators:		10

	$2^+.\sigma^{\parallel}{}_{\alpha\beta}$	$2^+.\tau^{\parallel}{}_{\alpha\beta}$	$2^-.\sigma^{\parallel}{}_{\alpha\beta\chi}$
$2^+.\sigma^{\parallel}{}_{\alpha\beta}$	$\frac{8}{4k^2(-3\alpha_{2.}+\alpha_{3.}-4\alpha_{4.}+4\alpha_{6.}+2\theta\ \psi^2)+\mathrm{MPl}(2-\frac{\mathrm{MPl}}{2\beta_{1.}+\beta_{2.}})}$	$\frac{2i\sqrt{2}(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})}{k(4(2\beta_{1.}+\beta_{2.})(3\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.}+2\theta\ \psi^2)-2(2\beta_{1.}+\beta_{2.})\mathrm{MPl}+\mathrm{MPl}^2)}$	0
$2^+.\tau^{\parallel}{}_{\alpha\beta}$	$\frac{2i\sqrt{2}(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})}{k(4(2\beta_{1.}+\beta_{2.})(3\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.}+2\theta\ \psi^2)-2(2\beta_{1.}+\beta_{2.})\mathrm{MPl}+\mathrm{MPl}^2)}$	$-\frac{4(2\beta_{1.}+\beta_{2.})k^2(3\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.}+2\theta\ \psi^2)+2\mathrm{MPl}}{k(4(2\beta_{1.}+\beta_{2.})(3\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.}+2\theta\ \psi^2)-2(2\beta_{1.}+\beta_{2.})\mathrm{MPl}+\mathrm{MPl}^2)}$	0
$2^-.\sigma^{\parallel}{}_{\alpha\beta\chi}$	0	0	$\frac{4}{4\beta_{1.}+2\beta_{2.}+2k^2(-2\alpha_{2.}+\theta\ \psi^2)-\mathrm{MPl}}$

	$2^+.f^{\parallel}{}_{\alpha\beta}$	$2^-.\mathcal{R}^{\parallel}{}_{\alpha\beta\chi}$
$2^+.f^{\parallel}{}_{\alpha\beta}$	$\frac{1}{4}(4\beta_{1.}+2\beta_{2.}+2k^2(-3\alpha_{2.}+\alpha_{3.}-4\alpha_{4.}+4\alpha_{6.}+2\theta\ \psi^2)-\mathrm{MPl})$	0
$2^-.\mathcal{R}^{\parallel}{}_{\alpha\beta\chi}$	0	$\frac{1}{4}(4\beta_{1.}+2\beta_{2.}+2k^2(-2\alpha_{2.}+\theta\ \psi^2)-\mathrm{MPl})$

	$0^+.\mathcal{R}^{\parallel}$	$0^+.f^{\parallel}$	$0^+.f^{\perp}$
$0^+.\mathcal{R}^{\parallel}$	$\frac{1}{2}(2\beta_{1.}+\beta_{2.}+3\beta_{3.}+2k^2(2(3\alpha_{1.}+\alpha_{3.}+\alpha_{4.})+\theta\ \psi^2)+\mathrm{MPl})$	$-\frac{i k(2\beta_{1.}+\beta_{2.}+3\beta_{3.}+\mathrm{MPl})}{\sqrt{2}}$	0
$0^+.f^{\parallel}$	$\frac{i k(2\beta_{1.}+\beta_{2.}+3\beta_{3.}+\mathrm{MPl})}{\sqrt{2}}$	$(2\beta_{1.}+\beta_{2.}+3\beta_{3.})k^2$	0
$0^+.f^{\perp}$	0	0	0
$0^-.\mathcal{R}^{\parallel}$	0	0	$4\beta_{1.}-4\beta_{2.}+k^2(2\alpha_{2.}+6\alpha_{4.}-\theta\ \psi^2)+\frac{\mathrm{MPl}}{2}$

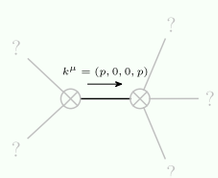
Massive and massless spectra



Massive particle

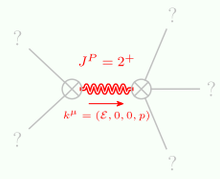
Pole residue: $-((48(-13824\ \beta_{3.}^3\theta\ \psi^4+4096\ \beta_{1.}^4(1+6\ \psi)^2+256\ \beta_{2.}^4(1+6\ \psi)^2-13824\ \beta_{3.}^3\psi^2\mathrm{MPl}+$
$288\beta_{3.}^2\theta\ \psi^2\mathrm{MPl}+2304\ \beta_{3.}^2\theta\ \psi^3\mathrm{MPl}-9216\ \beta_{3.}^2\theta\ \psi^4\mathrm{MPl}+2304\ \beta_{3.}^2\psi\mathrm{MPl}^2-$
$4608\beta_{3.}^2\psi^2\mathrm{MPl}^2+144\ \beta_{3.}\theta\ \psi^2\mathrm{MPl}^2+1152\ \beta_{3.}\theta\ \psi^3\mathrm{MPl}^2-2304\ \beta_{3.}\theta\ \psi^4\mathrm{MPl}^2-$
$96\beta_{3.}\mathrm{MPl}^3+\theta\mathrm{MPl}^3+768\ \beta_{3.}\psi\mathrm{MPl}^3+16\ \theta\ \psi\mathrm{MPl}^3+112\ \theta\ \psi^2\mathrm{MPl}^3+$
$384\theta\ \psi^3\mathrm{MPl}^3-32\mathrm{MPl}^4+64\ \beta_{1.}^3(-\theta-16\ \theta\ \psi-112\ \theta\ \psi^2-384\ \theta\ \psi^3-576\ \theta\ \psi^4+$
$128\beta_{2.}(1+6\ \psi)^2+96\ \beta_{3.}(1+16\ \psi+60\ \psi^2)-16\mathrm{MPl}+576\ \psi^2\mathrm{MPl})+$
$8\beta_{2.}^3(-\theta(1+8\ \psi+24\ \psi^2)^2+96\ \beta_{3.}(1+16\ \psi+60\ \psi^2)+16(-1+36\ \psi^2)\mathrm{MPl})+$
$2\beta_{2.}(13824\ \beta_{3.}^3\psi^2-288\ \beta_{3.}^2\psi(\theta\ \psi(1+8\ \psi+40\ \psi^2)+8(2+5\ \psi)\mathrm{MPl})+$
$\mathrm{MPl}^2(-3\theta(1+16\ \psi+88\ \psi^2+192\ \psi^3+384\ \psi^4)+16(5+24\ \psi)\mathrm{MPl})-$
$288\beta_{3.}\mathrm{MPl}(16\ \theta\ \psi^4+(-1+16\ \psi^2)\mathrm{MPl}))+12\ \beta_{2.}^2$
$(768\beta_{3.}^2\psi(1+7\ \psi)-48\ \beta_{3.}(\theta\ \psi^2(1+8\ \psi+24\ \psi^2)+2(1+8\ \psi+4\ \psi^2)\mathrm{MPl})+$
$\mathrm{MPl}(\theta(1+16\ \psi+88\ \psi^2+192\ \psi^3)-16(1+12\ \psi+24\ \psi^2)\mathrm{MPl}))+$
$48\beta_{1.}^2(768\beta_{3.}^2\psi(1+7\ \psi)+128(\beta_{2.}+6\ \beta_{2.}\psi)^2-$
$48\beta_{3.}(\theta\ \psi^2(1+8\ \psi+24\ \psi^2)+2(1+8\ \psi+4\ \psi^2)\mathrm{MPl})+$
$\mathrm{MPl}(\theta(1+16\ \psi+88\ \psi^2+192\ \psi^3)-16(1+12\ \psi+24\ \psi^2)\mathrm{MPl})+$
$2\beta_{2.}(-\theta(1+8\ \psi+24\ \psi^2)^2+96\ \beta_{3.}(1+16\ \psi+60\ \psi^2)+$
$16(-1+36\ \psi^2)\mathrm{MPl}))+4\ \beta_{1.}(13824\ \beta_{3.}^3\psi^2+512\ \beta_{2.}^3(1+6\ \psi)^2-$
$288\beta_{3.}^2\psi(\theta\ \psi(1+8\ \psi+40\ \psi^2)+8(2+5\ \psi)\mathrm{MPl})+$
$\mathrm{MPl}^2(-3\theta(1+16\ \psi+88\ \psi^2+192\ \psi^3+384\ \psi^4)+16(5+24\ \psi)\mathrm{MPl})-$
$288\beta_{3.}\mathrm{MPl}(16\ \theta\ \psi^4+(-1+16\ \psi^2)\mathrm{MPl})+$
$12\beta_{2.}^2(-\theta(1+8\ \psi+24\ \psi^2)^2+96\ \beta_{3.}(1+16\ \psi+60\ \psi^2)+$
$16(-1+36\ \psi^2)\mathrm{MPl})+12\ \beta_{2.}(768\beta_{3.}^2\psi(1+7\ \psi)-$
$48\beta_{3.}(\theta\ \psi^2(1+8\ \psi+24\ \psi^2)+2(1+8\ \psi+4\ \psi^2)\mathrm{MPl})+$
$\mathrm{MPl}(\theta(1+16\ \psi+88\ \psi^2+192\ \psi^3)-16(1+12\ \psi+24\ \psi^2)\mathrm{MPl})))))/$
$(\theta(-48\beta_{3.}\psi^2-4\beta_{1.}(1+8\ \psi+24\ \psi^2)-2\beta_{2.}(1+8\ \psi+24\ \psi^2)+\mathrm{MPl}+8\ \psi\mathrm{MPl})^2$
$(384\beta_{1.}^2+96\ \beta_{2.}^2+288\ \beta_{2.}\beta_{3.}-48\ \beta_{3.}\theta\ \psi^2-$
$2\beta_{2.}\theta(1+8\ \psi+24\ \psi^2)+48\ \beta_{2.}\mathrm{MPl}-$
$144\beta_{3.}\mathrm{MPl}+\theta\mathrm{MPl}+8\ \theta\ \psi\mathrm{MPl}-48\mathrm{MPl}^2+$
$4\beta_{1.}(96\beta_{2.}+144\ \beta_{3.}-\theta-8\ \theta\ \psi-24\ \theta\ \psi^2+24\mathrm{MPl}))))>0$

Square mass:	$-\frac{24(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})(2\beta_{1.}+\beta_{2.}+3\beta_{3.}+\mathrm{MPl})}{\theta(48\beta_{3.}\psi^2+4\beta_{1.}(1+8\psi+24\psi^2)+2\beta_{2.}(1+8\psi+24\psi^2)-\mathrm{MPl}-8\psi\mathrm{MPl})}>0$
Spin:	1
Parity:	Odd



Massless particle

Poleresidue:	$\frac{1}{\mathrm{MPl}}>0$
Polarisations:	2



Massive particle

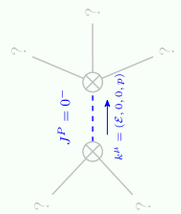
Pole residue: $(-3\ \alpha_{2.}(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})+\alpha_{3.}(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})-2(8\ \alpha_{4.}\beta_{1.}-8\ \alpha_{6.}\beta_{1.}+4\ \alpha_{4.}\beta_{2.}-4\ \alpha_{6.}\beta_{2.}-$
$4\beta_{1.}\theta\ \psi^2-2\beta_{2.}\theta\ \psi^2-2\alpha_{4.}\mathrm{MPl}+2\ \alpha_{6.}\mathrm{MPl}+2\ \beta_{1.}\mathrm{MPl}+\beta_{2.}\mathrm{MPl}+\theta\ \psi^2\mathrm{MPl}))/$
$((2\beta_{1.}+\beta_{2.})(3\alpha_{2.}-\alpha_{3.}+4\ \alpha_{4.}-4\ \alpha_{6.}-2\ \theta\ \psi^2)\mathrm{MPl})>0$

Square mass:	$\frac{(4\beta_{1.}+2\beta_{2.}-\mathrm{MPl})\mathrm{MPl}}{4(2\beta_{1.}+\beta_{2.})(3\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.}-2\theta\ \psi^2)}>0$
Spin:	2
Parity:	Even

Massive particle

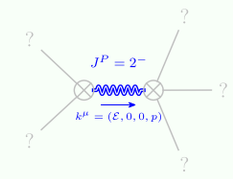
Pole residue: $(\alpha_{2.}(48\beta_{1.}^2-80\ \beta_{1.}\beta_{2.}+44\ \beta_{2.}^2+8\ \beta_{1.}\mathrm{MPl}-12\ \beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2)-$
$\alpha_{3.}(48\beta_{1.}^2-80\ \beta_{1.}\beta_{2.}+44\ \beta_{2.}^2+8\ \beta_{1.}\mathrm{MPl}-12\ \beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2)+$
$4\alpha_{4.}(48\beta_{1.}^2-80\ \beta_{1.}\beta_{2.}+44\ \beta_{2.}^2+8\ \beta_{1.}\mathrm{MPl}-12\ \beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2)-$
$4\alpha_{6.}(48\beta_{1.}^2-80\ \beta_{1.}\beta_{2.}+44\ \beta_{2.}^2+8\ \beta_{1.}\mathrm{MPl}-12\ \beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2)-$
$2(2\beta_{1.}-\beta_{2.})(32\beta_{1.}^2-16\ \beta_{2.}^2+10\ \beta_{2.}\mathrm{MPl}-\mathrm{MPl}^2-4\ \beta_{1.}(4\beta_{2.}+\mathrm{MPl})))/$
$((\alpha_{2.}-\alpha_{3.}+4\ \alpha_{4.}-4\ \alpha_{6.})(2\beta_{1.}-\beta_{2.})(8\ \alpha_{2.}\beta_{1.}-8\ \alpha_{3.}\beta_{1.}+32\ \alpha_{4.}\beta_{1.}-32\ \alpha_{6.}\beta_{1.}-32\beta_{1.}^2-4\ \alpha_{2.}\beta_{2.}+$
$4\alpha_{3.}\beta_{2.}-16\ \alpha_{4.}\beta_{2.}+16\ \alpha_{6.}\beta_{2.}+16\beta_{1.}\beta_{2.}+16\beta_{2.}^2+4\ \beta_{1.}\mathrm{MPl}-10\ \beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2))>0$

Square mass:	$\frac{-32\beta_{1.}^2+16\beta_{2.}^2-10\beta_{2.}\mathrm{MPl}+\mathrm{MPl}^2+4\beta_{1.}(4\beta_{2.}+\mathrm{MPl})}{4(\alpha_{2.}-\alpha_{3.}+4\alpha_{4.}-4\alpha_{6.})(2\beta_{1.}-\beta_{2.})}>0$
Spin:	1
Parity:	Even



Massive particle

Poleresidue:	$\frac{1}{-2\alpha_{2.}-6\alpha_{4.}+\theta\ \psi^2}>0$
Square mass:	$-\frac{8\beta_{1.}-8\beta_{2.}+\mathrm{MPl}}{4\alpha_{2.}+12\alpha_{4.}-2\theta\ \psi^2}>0$
Spin:	0
Parity:	Odd



Massive particle

Poleresidue:	$\frac{2}{2\alpha_{2.}-\theta\ \psi^2}>0$
Square mass:	$\frac{4\beta_{1.}+2\beta_{2.}-\mathrm{MPl}}{4\alpha_{2.}-2\theta\ \psi^2}>0$
Spin:	2
Parity:	Odd

Massive particle

Pole residue: $(-4\ \alpha_{1.}\beta_{1.}+4\ \alpha_{6.}\beta_{2.}-2\ \alpha_{4.}\beta_{2.}+2\ \alpha_{6.}\beta_{3.}-6\ \alpha_{4.}\beta_{3.}+6\ \alpha_{6.}\beta_{3.}+2\beta_{1.}\theta\ \psi^2+$
$\beta_{2.}\theta\ \psi^2+3\beta_{3.}\theta\ \psi^2-2\ \alpha_{4.}\mathrm{MPl}+2\ \alpha_{6.}\mathrm{MPl}+2\ \beta_{1.}\mathrm{MPl}+\beta_{2.}\mathrm{MPl}+3\ \beta_{3.}\mathrm{MPl}+$
$\theta\ \psi^2\mathrm{MPl}+6\ \alpha_{1.}(2\beta_{1.}+\beta_{2.}+3\ \beta_{3.}+\mathrm{MPl})+2\ \alpha_{3.}(2\beta_{1.}+\beta_{2.}+3\ \beta_{3.}+\mathrm{MPl}))/$
$((2\beta_{1.}+\beta_{2.}+3\ \beta_{3.})(6\ \alpha_{1.}+2\ \alpha_{3.}-2\ \alpha_{4.}+2\ \alpha_{6.}+\theta\ \psi^2)\mathrm{MPl})>0$

Square mass:	$\frac{\mathrm{MPl}(2\beta_{1.}+\beta_{2.}+3\beta_{3.}+\mathrm{MPl})}{2(2\beta_{1.}+\beta_{2.}+3\beta_{3.})(6\alpha_{1.}+2\alpha_{3.}-2\alpha_{4.}+2\alpha_{6.}+\theta\ \psi^2)}>0$
Spin:	0
Parity:	Even

Unitarity conditions

(Timeout after 10 seconds)