PSALTer results panel

Wave operator and propagator

	$^{1^+}\sigma^{\|}_{\alpha\beta}$	$^{1^+}\sigma^{\perp}_{\alpha\beta}$	$^{1^+}\tau^{\|}_{\alpha\beta}$	$^{1^-}\sigma^{\|}_{\alpha}$	$^{1^-}\sigma^{\perp}_{\alpha}$	$^{1^-}\tau^{\|}_{\alpha}$	$^{1^-}\tau^{\perp}_{\alpha}$
$^{1^+}\sigma^{\|}\dagger^{\alpha\beta}$	$\frac{8(2\beta_1-\beta_2)}{16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2}$	$-\frac{2\sqrt{2}(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{(1+k^2)(16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2)}$	$-\frac{2i\sqrt{2}k(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{(1+k^2)(16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2)}$	0	0	0	0
$^{1^+}\sigma^{\perp}\dagger^{\alpha\beta}$	$\frac{2\sqrt{2}(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{(1+k^2)(-16(\beta_1-\beta_2)(2\beta_1+\beta_2)-4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2+4\beta_1(\mathcal{M}_{Pl}^2)-10\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	$\frac{2(12\beta_1-10\beta_2+2(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)k^2+(\mathcal{M}_{Pl}^2))}{(1+k^2)^2(16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2)}$	$\frac{2ik(12\beta_1-10\beta_2+2(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)k^2+(\mathcal{M}_{Pl}^2))}{(1+k^2)^2(16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2)}$	0	0	0	0
$^{1^+}\tau^{\|}\dagger^{\alpha\beta}$	$-\frac{2i\sqrt{2}k(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{(1+k^2)(-16(\beta_1-\beta_2)(2\beta_1+\beta_2)-4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2+4\beta_1(\mathcal{M}_{Pl}^2)-10\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	$\frac{2ik(12\beta_1-10\beta_2+2(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)k^2+(\mathcal{M}_{Pl}^2))}{(1+k^2)^2(-16(\beta_1-\beta_2)(2\beta_1+\beta_2)-4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2+4\beta_1(\mathcal{M}_{Pl}^2)-10\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	$\frac{2k^2(12\beta_1-10\beta_2+2(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)k^2+(\mathcal{M}_{Pl}^2))}{(1+k^2)^2(16(\beta_1-\beta_2)(2\beta_1+\beta_2)+4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)k^2-4\beta_1(\mathcal{M}_{Pl}^2)+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2)}$	0	0	0	0
$^{1^-}\sigma^{\|}\dagger^{\alpha}$	0	0	0	$\frac{4(72(2\beta_1+\beta_2+\beta_3)+k^2\theta)}{3(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$	$\frac{4\sqrt{2}(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))}{3(1+2k^2)(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$	0	$\frac{8ik(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))}{3(1+2k^2)(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$
$^{1^-}\sigma^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{4\sqrt{2}(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))}{3(1+2k^2)(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$	$\frac{8(72\beta_1+36\beta_2+72\beta_3+\theta(k+6k\psi)^2+18(\mathcal{M}_{Pl}^2))}{3(1+2k^2)^2(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$	0	$\frac{8i\sqrt{2}k(72\beta_1+36\beta_2+72\beta_3+\theta(k+6k\psi)^2+18(\mathcal{M}_{Pl}^2))}{3(1+2k^2)^2(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$
$^{1^-}\tau^{\|}\dagger^{\alpha}$	0	0	0	0	0	0	0
$^{1^-}\tau^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{8ik(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))}{3(1+2k^2)(-2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)-16(2\beta_1+\beta_2)k^2\theta\psi-48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(-48\beta_1-24\beta_2+72\beta_3+k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)+24(\mathcal{M}_{Pl}^2)^2)}$	$\frac{16i\sqrt{2}k(\frac{1}{2}\theta(k+6k\psi)^2+9(4\beta_1+2\beta_2+4\beta_3+(\mathcal{M}_{Pl}^2)))}{3(1+2k^2)^2(-2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)-16(2\beta_1+\beta_2)k^2\theta\psi-48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(-48\beta_1-24\beta_2+72\beta_3+k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)+24(\mathcal{M}_{Pl}^2)^2)}$	0	$\frac{16k^2(72\beta_1+36\beta_2+72\beta_3+\theta(k+6k\psi)^2+18(\mathcal{M}_{Pl}^2))}{3(1+2k^2)^2(2(2\beta_1+\beta_2)(24(2\beta_1+\beta_2+3\beta_3)+k^2\theta)+16(2\beta_1+\beta_2)k^2\theta\psi+48(2\beta_1+\beta_2+\beta_3)k^2\theta\psi^2+(48\beta_1+24\beta_2-72\beta_3-k^2\theta(1+8\psi))(\mathcal{M}_{Pl}^2)-24(\mathcal{M}_{Pl}^2)^2)}$

	$^{1^+}\mathcal{A}^{\|}_{\alpha\beta}$	$^{1^+}\mathcal{A}^{\perp}_{\alpha\beta}$	$^{1^+}f^{\|}_{\alpha\beta}$	$^{1^-}\mathcal{A}^{\|}_{\alpha}$	$^{1^-}\mathcal{A}^{\perp}_{\alpha}$	$^{1^-}f^{\|}_{\alpha}$	$^{1^-}f^{\perp}_{\alpha}$
$^{1^+}\mathcal{A}^{\|}\dagger^{\alpha\beta}$	$\frac{1}{4}(12\beta_1-10\beta_2+2(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)k^2+(\mathcal{M}_{Pl}^2))$	$\frac{4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2)}{2\sqrt{2}}$	$\frac{ik(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{2\sqrt{2}}$	0	0	0	0
$^{1^+}\mathcal{A}^{\perp}\dagger^{\alpha\beta}$	$\frac{4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2)}{2\sqrt{2}}$	$2\beta_1-\beta_2$	$i(2\beta_1-\beta_2)k$	0	0	0	0
$^{1^+}f^{\|}\dagger^{\alpha\beta}$	$-\frac{ik(4\beta_1-6\beta_2+(\mathcal{M}_{Pl}^2))}{2\sqrt{2}}$	$-i(2\beta_1-\beta_2)k$	$(2\beta_1-\beta_2)k^2$	0	0	0	0
$^{1^-}\mathcal{A}^{\|}\dagger^{\alpha}$	0	0	0	$\beta_1+\frac{1}{72}(36\beta_2+72\beta_3+\theta(k+6k\psi)^2+18(\mathcal{M}_{Pl}^2))$	$-\frac{72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2)}{72\sqrt{2}}$	0	$-\frac{1}{72}ik(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))$
$^{1^-}\mathcal{A}^{\perp}\dagger^{\alpha}$	0	0	0	$-\frac{72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2)}{72\sqrt{2}}$	$\beta_1+\frac{\beta_2+\beta_3}{2}+\frac{k^2\theta}{144}$	0	$\frac{ik(72(2\beta_1+\beta_2+\beta_3)+k^2\theta)}{72\sqrt{2}}$
$^{1^-}f^{\|}\dagger^{\alpha}$	0	0	0	0	0	0	0
$^{1^-}f^{\perp}\dagger^{\alpha}$	0	0	0	$\frac{1}{72}ik(72\beta_3+k^2(\theta+6\theta\psi)+36(\mathcal{M}_{Pl}^2))$	$-\frac{ik(72(2\beta_1+\beta_2+\beta_3)+k^2\theta)}{72\sqrt{2}}$	0	$(2\beta_1+\beta_2+\beta_3)k^2+\frac{k^4\theta}{72}$

	$^{0^+}\mathcal{A}^{\|}$	$^{0^+}f^{\|}$	$^{0^+}f^{\perp}$	$^{0^-}\mathcal{A}^{\|}$
$^{0^+}\mathcal{A}^{\|}\dagger$	$\frac{1}{2}(2\beta_1+\beta_2+3\beta_3+2k^2(2(3\alpha_1+\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+(\mathcal{M}_{Pl}^2))$	$-\frac{ik(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{\sqrt{2}}$	0	0
$^{0^+}f^{\|}\dagger$	$\frac{ik(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{\sqrt{2}}$	$(2\beta_1+\beta_2+3\beta_3)k^2$	0	0
$^{0^+}f^{\perp}\dagger$	0	0	0	0
$^{0^-}\mathcal{A}^{\|}\dagger$	0	0	0	$4\beta_1-4\beta_2+k^2(2\alpha_2+6\alpha_4-\theta\psi^2)+\frac{(\mathcal{M}_{Pl}^2)}{2}$

$$\mathcal{S}==\iiiint(\mathcal{A}^{\alpha\beta\chi}\sigma_{\alpha\beta\chi}+f^{\alpha\beta}\tau(\Delta+\mathcal{K})_{\alpha\beta}-$$
$$\tfrac{1}{2}(\mathcal{M}_{Pl}^2)(\mathcal{A}_{\iota\kappa\theta}\mathcal{A}^{\iota\theta\kappa}+\mathcal{A}^{\iota\theta}{}_{\iota}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}+2f^{\iota\theta}\partial_\theta\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}-2\partial_\theta\mathcal{A}^{\iota\theta}{}_{\iota}-2f^{\iota\theta}\partial_\kappa\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta}+2f^{\iota}{}_{\iota}\partial_\kappa\mathcal{A}^{\theta\kappa}{}_{\theta})+$$
$$\beta_3(-\mathcal{A}^{\iota\theta}{}_{\iota}\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}+2\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}\partial_\theta f^{\iota\theta}-2\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\partial^\theta f^{\iota}{}_{\iota}+\partial_\theta f^{\kappa}{}_{\kappa}\partial^\theta f^{\iota}{}_{\iota}+\partial_\theta f^{\iota\theta}\partial_\kappa f_{\iota}{}^{\kappa}-2\partial^\theta f^{\iota}{}_{\iota}\partial_\kappa f_{\theta}{}^{\kappa})+$$
$$2\alpha_4(4\partial_\iota\mathcal{A}_{\alpha\theta\kappa}-2\partial_\iota\mathcal{A}_{\alpha\kappa\theta}-\partial_\theta\mathcal{A}_{\alpha\iota\kappa}+\partial_\kappa\mathcal{A}_{\alpha\iota\theta}-2\partial_\kappa\mathcal{A}_{\alpha\theta\iota})\partial^\kappa\mathcal{A}^{\alpha\iota\theta}-\alpha_2(\partial_\theta\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}+$$
$$\partial_\alpha\mathcal{A}^{\alpha\iota\theta}\partial_\kappa\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta}-2\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}\partial_\kappa\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta}-4\partial_\iota\mathcal{A}_{\alpha\theta\kappa}\partial^\kappa\mathcal{A}^{\alpha\iota\theta}+2\partial_\iota\mathcal{A}_{\alpha\kappa\theta}\partial^\kappa\mathcal{A}^{\alpha\iota\theta}+2\partial_\kappa\mathcal{A}_{\alpha\theta\iota}\partial^\kappa\mathcal{A}^{\alpha\iota\theta})+$$
$$\tfrac{1}{72}\theta(-2\partial_\alpha\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\partial^\theta\partial_\iota f^{\alpha\iota}-12\psi\partial_\alpha\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}\partial^\theta\partial_\iota f^{\alpha\iota}+2\partial_\theta\mathcal{A}_{\alpha}{}^{\kappa}{}_{\kappa}\partial^\theta\partial_\iota f^{\alpha\iota}+12\psi\partial_\theta\mathcal{A}_{\alpha}{}^{\kappa}{}_{\kappa}\partial^\theta\partial_\iota f^{\alpha\iota}+$$
$$(1+12\psi)\partial_\iota\mathcal{A}_{\theta}{}^{\kappa}{}_{\kappa}(\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}+\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha})-(1+12\psi)\partial_\theta\mathcal{A}_{\iota}{}^{\kappa}{}_{\kappa}(\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}+\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha})-$$
$$12\psi\partial^\theta\partial_\iota f^{\alpha\iota}\partial_\kappa\mathcal{A}_{\alpha}{}^{\kappa}{}_{\theta}+12\psi\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}\partial_\kappa\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta}+12\psi\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha}\partial_\kappa\mathcal{A}_{\iota}{}^{\kappa}{}_{\theta}+12\psi\partial^\theta\partial_\iota f^{\alpha\iota}\partial_\kappa\mathcal{A}_{\theta}{}^{\kappa}{}_{\alpha}-12\psi$$
$$\partial^\theta\mathcal{A}^{\alpha\iota}{}_{\alpha}\partial_\kappa\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}-12\psi\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha}\partial_\kappa\mathcal{A}_{\theta}{}^{\kappa}{}_{\iota}-\partial^\theta\partial_\iota f^{\alpha\iota}\partial_\kappa\partial_\alpha f_{\theta}{}^{\kappa}+\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha}\partial_\kappa\partial_\iota f_{\theta}{}^{\kappa}+\partial^\theta\partial_\iota f^{\alpha\iota}\partial_\kappa\partial_\theta f_{\alpha}{}^{\kappa}-$$
$$\partial^\theta\partial^\iota f^{\alpha}{}_{\alpha}\partial_\kappa\partial_\theta f_{\iota}{}^{\kappa}-144\psi^2\partial_\iota\mathcal{A}_{\alpha\theta\kappa}\partial^\kappa\mathcal{A}^{\alpha\iota\theta}+72\psi^2\partial_\iota\mathcal{A}_{\alpha\kappa\theta}\partial^\kappa\mathcal{A}^{\alpha\iota\theta}+72\psi^2\partial_\kappa\mathcal{A}_{\alpha\theta\iota}\partial^\kappa\mathcal{A}^{\alpha\iota\theta})+$$
$$2\beta_1(-\mathcal{A}_{\iota\kappa\theta}\mathcal{A}^{\iota\theta\kappa}+(2\mathcal{A}_{\theta\kappa\iota}-\partial_\iota f_{\kappa\theta}+\partial_\kappa f_{\iota\theta})\partial^\kappa f^{\iota\theta}+\mathcal{A}_{\iota\theta\kappa}(\mathcal{A}^{\iota\theta\kappa}+2\partial^\kappa f^{\iota\theta}))+$$
$$\beta_2((-2\mathcal{A}_{\theta\kappa\iota}-2\partial_\iota f_{\theta\kappa}+\partial_\theta f_{\iota\kappa}+\partial_\kappa f_{\theta\iota})\partial^\kappa f^{\iota\theta}-\mathcal{A}_{\iota\theta\kappa}(\mathcal{A}^{\iota\theta\kappa}+2\partial^\kappa f^{\iota\theta})+\mathcal{A}_{\iota\kappa\theta}(3\mathcal{A}^{\iota\theta\kappa}+4\partial^\kappa f^{\iota\theta}))+$$
$$4\alpha_1\partial_\theta\mathcal{A}^{\iota\theta}{}_{\iota}\partial_\lambda\mathcal{A}^{\kappa\lambda}{}_{\kappa}-\alpha_3(\partial_\kappa\mathcal{A}_{\lambda}{}^{\zeta}{}_{\zeta}\partial^\lambda\mathcal{A}^{\theta\kappa}{}_{\theta}+(\partial_\theta\mathcal{A}^{\theta\kappa\lambda}-2\partial^\lambda\mathcal{A}^{\theta\kappa}{}_{\theta})\partial_\zeta\mathcal{A}_{\lambda}{}^{\zeta}{}_{\kappa})+$$
$$4\alpha_6\partial_\iota\mathcal{A}_{\lambda\zeta\alpha}\partial^\zeta\mathcal{A}^{\alpha\iota\lambda})[t,x,y,z]\,dz\,dy\,dx\,dt$$

	$^{0^+}\sigma^{\|}$	$^{0^+}\tau^{\|}$	$^{0^+}\tau^{\perp}$	$^{0^-}\sigma^{\|}$
$^{0^+}\sigma^{\|}\dagger$	$\frac{1}{k^2(6\alpha_1+2(\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+\frac{1}{2}(\mathcal{M}_{Pl}^2)(1-\frac{(\mathcal{M}_{Pl}^2)}{2\beta_1+\beta_2+3\beta_3})}$	$-\frac{i\sqrt{2}(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{k(-2(2\beta_1+\beta_2+3\beta_3)k^2(6\alpha_1+2(\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+(2\beta_1+\beta_2+3\beta_3)(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	0	0
$^{0^+}\tau^{\|}\dagger$	$\frac{i\sqrt{2}(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{k((\mathcal{M}_{Pl}^2)^2+(2\beta_1+\beta_2+3\beta_3)(-2k^2(6\alpha_1+2(\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+(\mathcal{M}_{Pl}^2)))}$	$-\frac{2\beta_1+\beta_2+3\beta_3+2k^2(2(3\alpha_1+\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+(\mathcal{M}_{Pl}^2)}{k^2(-2(2\beta_1+\beta_2+3\beta_3)k^2(6\alpha_1+2(\alpha_3-\alpha_4+\alpha_6)+\theta\psi^2)+(2\beta_1+\beta_2+3\beta_3)(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	0	0
$^{0^+}\tau^{\perp}\dagger$	0	0	0	0
$^{0^-}\sigma^{\|}\dagger$	0	0	0	$\frac{2}{8\beta_1-8\beta_2+2k^2(2\alpha_2+6\alpha_4-\theta\psi^2)+(\mathcal{M}_{Pl}^2)}$

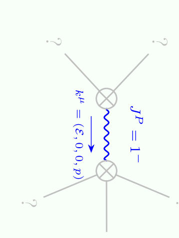
Spin-parity form	Covariant form	Multiplicities
$^{0^+}\tau^{\perp}==0$	$\partial_\beta\partial_\alpha\tau(\Delta+\mathcal{K})^{\alpha\beta}==0$	1
$2ik\,^{1^-}\sigma^{\perp\alpha}+{}^{1^-}\tau^{\perp\alpha}==0$	$\partial_\chi\partial_\beta\partial^\alpha\tau(\Delta+\mathcal{K})^{\beta\chi}==\partial_\chi\partial^\chi\partial_\beta\tau(\Delta+\mathcal{K})^{\alpha\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

	$^{2^+}\sigma^{\|}_{\alpha\beta}$	$^{2^+}\tau^{\|}_{\alpha\beta}$	$^{2^-}\sigma^{\|}_{\alpha\beta\chi}$
$^{2^+}\sigma^{\|}\dagger^{\alpha\beta}$	$\frac{8}{4k^2(-3\alpha_2+\alpha_3-4\alpha_4+4\alpha_6+2\theta\psi^2)+(\mathcal{M}_{Pl}^2)(2-\frac{(\mathcal{M}_{Pl}^2)}{2\beta_1+\beta_2})}$	$-\frac{2i\sqrt{2}(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))}{k(4(2\beta_1+\beta_2)k^2(3\alpha_2-\alpha_3+4\alpha_4-4\alpha_6-2\theta\psi^2)-2(2\beta_1+\beta_2)(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	0
$^{2^+}\tau^{\|}\dagger^{\alpha\beta}$	$\frac{2i\sqrt{2}(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))}{k(2(2\beta_1+\beta_2)(6\alpha_2k^2-2k^2(\alpha_3-4\alpha_4+4\alpha_6+2\theta\psi^2)-(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)^2)}$	$\frac{-4(2\beta_1+\beta_2+k^2(-3\alpha_2+\alpha_3-4\alpha_4+4\alpha_6+2\theta\psi^2))+2(\mathcal{M}_{Pl}^2)}{k^2(4(2\beta_1+\beta_2)k^2(3\alpha_2-\alpha_3+4\alpha_4-4\alpha_6-2\theta\psi^2)-2(2\beta_1+\beta_2)(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)}$	0
$^{2^-}\sigma^{\|}\dagger^{\alpha\beta\chi}$	0	0	$\frac{4}{4\beta_1+2\beta_2+2k^2(-2\alpha_2+\theta\psi^2)-(\mathcal{M}_{Pl}^2)}$

	$^{2^+}\mathcal{A}^{\|}_{\alpha\beta}$	$^{2^+}f^{\|}_{\alpha\beta}$	$^{2^-}\mathcal{A}^{\|}_{\alpha\beta\chi}$
$^{2^+}\mathcal{A}^{\|}\dagger^{\alpha\beta}$	$\frac{1}{4}(4\beta_1+2\beta_2+2k^2(-3\alpha_2+\alpha_3-4\alpha_4+4\alpha_6+2\theta\psi^2)-(\mathcal{M}_{Pl}^2))$	$-\frac{ik(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))}{2\sqrt{2}}$	0
$^{2^+}f^{\|}\dagger^{\alpha\beta}$	$\frac{ik(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))}{2\sqrt{2}}$	$(2\beta_1+\beta_2)k^2$	0
$^{2^-}\mathcal{A}^{\|}\dagger^{\alpha\beta\chi}$	0	0	$\frac{1}{4}(4\beta_1+2\beta_2+2k^2(-2\alpha_2+\theta\psi^2)-(\mathcal{M}_{Pl}^2))$

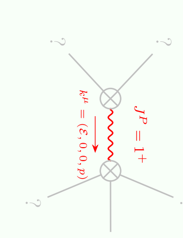
Massive and massless spectra

Massive particle



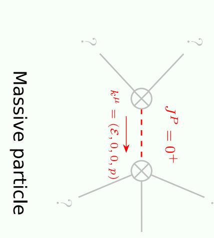
Pole residue:	$-((48(-13824\beta_3^3\theta\psi^4+4096\beta_1^4(1+6\psi)^2+256\beta_2^4(1+6\psi)^2-13824\beta_3^3\psi^2(\mathcal{M}_{Pl}^2)+288\beta_3^2\theta\psi^2(\mathcal{M}_{Pl}^2)+2304\beta_3^2\theta\psi^3(\mathcal{M}_{Pl}^2)-9216\beta_3^2\theta\psi^4(\mathcal{M}_{Pl}^2)+2304\beta_3^2\psi(\mathcal{M}_{Pl}^2)^2-4608\beta_3^2\psi^2(\mathcal{M}_{Pl}^2)^2+144\beta_3\theta\psi^2(\mathcal{M}_{Pl}^2)^2+1152\beta_3\theta\psi^3(\mathcal{M}_{Pl}^2)^2-2304\beta_3\theta\psi^4(\mathcal{M}_{Pl}^2)^2-96\beta_3(\mathcal{M}_{Pl}^2)^3+\theta(\mathcal{M}_{Pl}^2)^3+768\beta_3\psi(\mathcal{M}_{Pl}^2)^3+16\theta\psi(\mathcal{M}_{Pl}^2)^3+112\theta\psi^2(\mathcal{M}_{Pl}^2)^3+384\theta\psi^3(\mathcal{M}_{Pl}^2)^3-32(\mathcal{M}_{Pl}^2)^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(\mathcal{M}_{Pl}^2)+576\psi^2(\mathcal{M}_{Pl}^2))+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)(\mathcal{M}_{Pl}^2))+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)(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)^2(-3\theta(1+16\psi+88\psi^2+192\psi^3+384\psi^4)+16(5+24\psi)(\mathcal{M}_{Pl}^2))-288\beta_3(\mathcal{M}_{Pl}^2)(16\theta\psi^4+(-1+16\psi^2)(\mathcal{M}_{Pl}^2)))+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)(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)(\theta(1+16\psi+88\psi^2+192\psi^3)-16(1+12\psi+24\psi^2)(\mathcal{M}_{Pl}^2)))+48\beta_1^2(768\beta_2^2\psi(1+7\psi)+128(\beta_2+6\beta_3\psi)^2-48\beta_3(\theta\psi^2(1+8\psi+24\psi^2)+2(1+8\psi+4\psi^2)(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)(\theta(1+16\psi+88\psi^2+192\psi^3)-16(1+12\psi+24\psi^2)(\mathcal{M}_{Pl}^2))+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)(\mathcal{M}_{Pl}^2)))+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)(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)^2(-3\theta(1+16\psi+88\psi^2+192\psi^3+384\psi^4)+16(5+24\psi)(\mathcal{M}_{Pl}^2))-288\beta_3(\mathcal{M}_{Pl}^2)(16\theta\psi^4+(-1+16\psi^2)(\mathcal{M}_{Pl}^2))+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)(\mathcal{M}_{Pl}^2))+48\beta_3(\theta\psi^2(1+8\psi+24\psi^2)+2(1+8\psi+4\psi^2)(\mathcal{M}_{Pl}^2))+(\mathcal{M}_{Pl}^2)(\theta(1+16\psi+88\psi^2+192\psi^3)-16(1+12\psi+24\psi^2)(\mathcal{M}_{Pl}^2)))))/(\theta(-48\beta_3\psi^2-4\beta_1(1+8\psi+24\psi^2)-2\beta_2(1+8\psi+24\psi^2)+(\mathcal{M}_{Pl}^2)+8\psi(\mathcal{M}_{Pl}^2))^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(\mathcal{M}_{Pl}^2)-144\beta_3(\mathcal{M}_{Pl}^2)+\theta(\mathcal{M}_{Pl}^2)+8\theta\psi(\mathcal{M}_{Pl}^2)-48(\mathcal{M}_{Pl}^2)^2+4\beta_1(96\beta_2+144\beta_3-\theta-8\theta\psi-24\theta\psi^2+24(\mathcal{M}_{Pl}^2)))))>0$
Square mass:	$-\frac{24(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{\theta(48\beta_3\psi^2+4\beta_1(1+8\psi+24\psi^2)+2\beta_2(1+8\psi+24\psi^2)-(\mathcal{M}_{Pl}^2)-8\psi(\mathcal{M}_{Pl}^2))}>0$
Spin:	1
Parity:	Odd

Massive particle



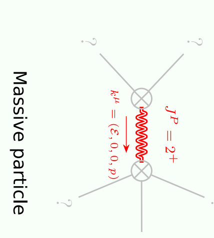
Pole residue:	$(\alpha_2(48\beta_1^2-80\beta_1\beta_2+44\beta_2^2+8\beta_1(\mathcal{M}_{Pl}^2)-12\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)-\alpha_3(48\beta_1^2-80\beta_1\beta_2+44\beta_2^2+8\beta_1(\mathcal{M}_{Pl}^2)-12\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)+4\alpha_4(48\beta_1^2-80\beta_1\beta_2+44\beta_2^2+8\beta_1(\mathcal{M}_{Pl}^2)-12\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)-4\alpha_6(48\beta_1^2-80\beta_1\beta_2+44\beta_2^2+8\beta_1(\mathcal{M}_{Pl}^2)-12\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2)-2(2\beta_1-\beta_2)(32\beta_1^2-16\beta_2^2+10\beta_2(\mathcal{M}_{Pl}^2)-(\mathcal{M}_{Pl}^2)^2-4\beta_1(4\beta_2+(\mathcal{M}_{Pl}^2))))/((\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)(8\alpha_2\beta_1-8\alpha_3\beta_1+32\alpha_4\beta_1-32\alpha_6\beta_1-32\beta_1^2-4\alpha_2\beta_2+4\alpha_3\beta_2-16\alpha_4\beta_2+16\alpha_6\beta_2+16\beta_1\beta_2+16\beta_2^2+4\beta_1(\mathcal{M}_{Pl}^2)-10\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2))>0$
Square mass:	$\frac{-32\beta_1^2+16\beta_2^2-10\beta_2(\mathcal{M}_{Pl}^2)+(\mathcal{M}_{Pl}^2)^2+4\beta_1(4\beta_2+(\mathcal{M}_{Pl}^2))}{4(\alpha_2-\alpha_3+4\alpha_4-4\alpha_6)(2\beta_1-\beta_2)}>0$
Spin:	1
Parity:	Even

Massive particle

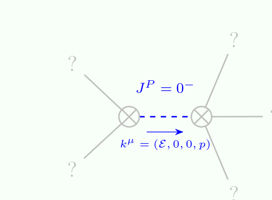


Pole residue:	$(-4\alpha_4\beta_1+4\alpha_6\beta_1-2\alpha_4\beta_2+2\alpha_6\beta_2-6\alpha_4\beta_3+6\alpha_6\beta_3+2\beta_1\theta\psi^2+\beta_2\theta\psi^2+3\beta_3\theta\psi^2-2\alpha_4(\mathcal{M}_{Pl}^2)+2\alpha_6(\mathcal{M}_{Pl}^2)+2\beta_1(\mathcal{M}_{Pl}^2)+\beta_2(\mathcal{M}_{Pl}^2)+3\beta_3(\mathcal{M}_{Pl}^2)+\theta\psi^2(\mathcal{M}_{Pl}^2)+6\alpha_1(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))+2\alpha_3(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2)))/((2\beta_1+\beta_2+3\beta_3)(6\alpha_1+2\alpha_3-2\alpha_4+2\alpha_6+\theta\psi^2)(\mathcal{M}_{Pl}^2))>0$
Square mass:	$\frac{(\mathcal{M}_{Pl}^2)(2\beta_1+\beta_2+3\beta_3+(\mathcal{M}_{Pl}^2))}{2(2\beta_1+\beta_2+3\beta_3)(6\alpha_1+2\alpha_3-2\alpha_4+2\alpha_6+\theta\psi^2)}>0$
Spin:	0
Parity:	Even

Massive particle

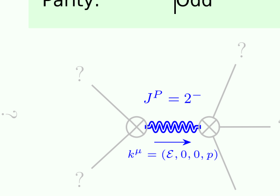


Pole residue:	$(-3\alpha_2(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))+\alpha_3(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))-2(8\alpha_4\beta_1-8\alpha_6\beta_1+4\alpha_4\beta_2-4\alpha_6\beta_2-4\beta_1\theta\psi^2-2\beta_2\theta\psi^2-2\alpha_4(\mathcal{M}_{Pl}^2)+2\alpha_6(\mathcal{M}_{Pl}^2)+2\beta_1(\mathcal{M}_{Pl}^2)+\beta_2(\mathcal{M}_{Pl}^2)+\theta\psi^2(\mathcal{M}_{Pl}^2)))/((2\beta_1+\beta_2)(3\alpha_2-\alpha_3+4\alpha_4-4\alpha_6-2\theta\psi^2)(\mathcal{M}_{Pl}^2))>0$
Square mass:	$\frac{(4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2))(\mathcal{M}_{Pl}^2)}{4(2\beta_1+\beta_2)(3\alpha_2-\alpha_3+4\alpha_4-4\alpha_6-2\theta\psi^2)}>0$
Spin:	2
Parity:	Even



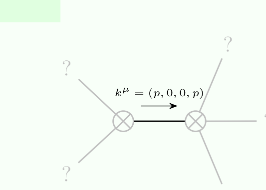
Massive particle

Pole residue:	$\frac{1}{-2\alpha_2-6\alpha_4+\theta\psi^2}>0$
Square mass:	$-\frac{8\beta_1-8\beta_2+(\mathcal{M}_{Pl}^2)}{4\alpha_2+12\alpha_4-2\theta\psi^2}>0$
Spin:	0
Parity:	Odd



Massive particle

Pole residue:	$\frac{2}{2\alpha_2-\theta\psi^2}>0$
Square mass:	$\frac{4\beta_1+2\beta_2-(\mathcal{M}_{Pl}^2)}{4\alpha_2-2\theta\psi^2}>0$
Spin:	2
Parity:	Odd



Massless particle

Pole residue:	$\frac{1}{(\mathcal{M}_{Pl}^2)}>0$
Polarisations:	2

Unitarity conditions

(Timeout after 10 seconds)