Particle spectrograph

Wave operator and propagator

	$\overset{\#1}{1^+}\sigma_{\alpha\beta}$	$\overset{\#2}{1^+}\sigma_{\alpha\beta}$	$\overset{\#1}{1^+}\tau_{\alpha\beta}$	$\overset{\#1}{1^-}\sigma_{\alpha}$	$\overset{\#2}{1^-}\sigma_{\alpha}$	$\overset{\#1}{1^-}\tau_{\alpha}$	$\overset{\#2}{1^-}\tau_{\alpha}$
$\overset{\#1}{1^+}\sigma\dagger^{\alpha\beta}$	$\frac{1}{-\frac{3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)}{16(\beta_1+2\beta_3)}+(\alpha_2+\alpha_5)k^2}$	$-\frac{2\sqrt{2}(3\alpha_0-4\beta_1+16\beta_3)}{(1+k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	$-\frac{2i\sqrt{2}(3\alpha_0-4\beta_1+16\beta_3)k}{(1+k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	0	0	0	0
$\overset{\#2}{1^+}\sigma\dagger^{\alpha\beta}$	$-\frac{2\sqrt{2}(3\alpha_0-4\beta_1+16\beta_3)}{(1+k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	$\frac{6\alpha_0+8(\beta_1+8\beta_3+3(\alpha_2+\alpha_5)k^2)}{(1+k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	$\frac{2ik(3\alpha_0+4(\beta_1+8\beta_3+3(\alpha_2+\alpha_5)k^2))}{(1+k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	0	0	0	0
$\overset{\#1}{1^+}\tau\dagger^{\alpha\beta}$	$\frac{2i\sqrt{2}(3\alpha_0-4\beta_1+16\beta_3)k}{(1+k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	$-\frac{2ik(3\alpha_0+4(\beta_1+8\beta_3+3(\alpha_2+\alpha_5)k^2))}{(1+k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	$\frac{2k^2(3\alpha_0+4(\beta_1+8\beta_3+3(\alpha_2+\alpha_5)k^2))}{(1+k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)+16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)k^2)}$	0	0	0	0
$\overset{\#1}{1^-}\sigma\dagger^{\alpha}$	0	0	0	$\frac{1}{-\frac{3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)}{8(2\beta_1+\beta_2)}+(\alpha_4+\alpha_5)k^2}$	$\frac{2\sqrt{2}(3\alpha_0-4\beta_1+4\beta_2)}{(1+2k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$	0	$\frac{4i(3\alpha_0-4\beta_1+4\beta_2)k}{(1+2k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$
$\overset{\#2}{1^-}\sigma\dagger^{\alpha}$	0	0	0	$\frac{2\sqrt{2}(3\alpha_0-4\beta_1+4\beta_2)}{(1+2k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$	$\frac{6\alpha_0+8(\beta_1+2\beta_2+3(\alpha_4+\alpha_5)k^2)}{(1+2k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$	0	$\frac{2i\sqrt{2}k(3\alpha_0+4(\beta_1+2\beta_2+3(\alpha_4+\alpha_5)k^2))}{(1+2k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$
$\overset{\#1}{1^-}\tau\dagger^{\alpha}$	0	0	0	0	0	0	0
$\overset{\#2}{1^-}\tau\dagger^{\alpha}$	0	0	0	$-\frac{4i(3\alpha_0-4\beta_1+4\beta_2)k}{(1+2k^2)(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$	$-\frac{2i\sqrt{2}k(3\alpha_0+4(\beta_1+2\beta_2+3(\alpha_4+\alpha_5)k^2))}{(1+2k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$	0	$\frac{4k^2(3\alpha_0+4(\beta_1+2\beta_2+3(\alpha_4+\alpha_5)k^2))}{(1+2k^2)^2(-3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)+8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)k^2)}$

$$\begin{aligned}\mathcal{S} ==\iiiint \Big(\tfrac{1}{6}\big(&-3\alpha_0\, \mathcal{A}^{\alpha\beta}{}_{\alpha}\, \mathcal{A}_{\beta}{}^{\chi}{}_{\chi} +4\beta_1\, \mathcal{A}^{\alpha\beta}{}_{\alpha}\, \mathcal{A}_{\beta}{}^{\chi}{}_{\chi} -4\beta_2\, \mathcal{A}^{\alpha\beta}{}_{\alpha}\, \mathcal{A}_{\beta}{}^{\chi}{}_{\chi} +6 f^{\alpha\beta}\, \tau_{\alpha\beta} +6\mathcal{A}^{\alpha\beta\chi}\, \sigma_{\alpha\beta\chi} -\\
&8\beta_1\, \mathcal{A}_{\alpha}{}^{\chi}{}_{\chi}\, \partial_{\beta}f^{\alpha\beta} +8\beta_2\, \mathcal{A}_{\alpha}{}^{\chi}{}_{\chi}\, \partial_{\beta}f^{\alpha\beta} -6\alpha_0\, f^{\alpha\beta}\, \partial_{\beta}\mathcal{A}_{\alpha}{}^{\chi}{}_{\chi} +6\alpha_0\, \partial_{\beta}\mathcal{A}^{\alpha\beta}{}_{\alpha} +\\
&8\beta_1\, \mathcal{A}_{\beta}{}^{\chi}{}_{\chi}\, \partial^{\beta}f^{\alpha}{}_{\alpha} -8\beta_2\, \mathcal{A}_{\beta}{}^{\chi}{}_{\chi}\, \partial^{\beta}f^{\alpha}{}_{\alpha} -4\beta_1\, \partial_{\beta}f^{\chi}{}_{\chi}\, \partial^{\beta}f^{\alpha}{}_{\alpha} +4\beta_2\, \partial_{\beta}f^{\chi}{}_{\chi}\, \partial^{\beta}f^{\alpha}{}_{\alpha} -\\
&4\beta_1\, \partial_{\beta}f^{\alpha\beta}\, \partial_{\chi}f_{\alpha}{}^{\chi} +4\beta_2\, \partial_{\beta}f^{\alpha\beta}\, \partial_{\chi}f_{\alpha}{}^{\chi} +8\beta_1\, \partial^{\beta}f^{\alpha}{}_{\alpha}\, \partial_{\chi}f_{\beta}{}^{\chi} -8\beta_2\, \partial^{\beta}f^{\alpha}{}_{\alpha}\, \partial_{\chi}f_{\beta}{}^{\chi} +\\
&6\alpha_0\, f^{\alpha\beta}\, \partial_{\chi}\mathcal{A}_{\alpha}{}^{\chi}{}_{\beta} -6\alpha_0\, f^{\alpha}{}_{\alpha}\, \partial_{\chi}\mathcal{A}^{\beta\chi}{}_{\beta} +8\beta_1\, \mathcal{A}_{\beta\chi\alpha}\, \partial^{\chi}f^{\alpha\beta} +16\beta_3\, \mathcal{A}_{\beta\chi\alpha}\, \partial^{\chi}f^{\alpha\beta} -\\
&8\beta_1\, \partial_{\alpha}f_{\beta\chi}\, \partial^{\chi}f^{\alpha\beta} +8\beta_3\, \partial_{\alpha}f_{\beta\chi}\, \partial^{\chi}f^{\alpha\beta} -8\beta_1\, \partial_{\alpha}f_{\chi\beta}\, \partial^{\chi}f^{\alpha\beta} -4\beta_3\, \partial_{\alpha}f_{\chi\beta}\, \partial^{\chi}f^{\alpha\beta} +\\
&4\beta_1\, \partial_{\beta}f_{\alpha\chi}\, \partial^{\chi}f^{\alpha\beta} -4\beta_3\, \partial_{\beta}f_{\alpha\chi}\, \partial^{\chi}f^{\alpha\beta} +8\beta_1\, \partial_{\chi}f_{\alpha\beta}\, \partial^{\chi}f^{\alpha\beta} +4\beta_3\, \partial_{\chi}f_{\alpha\beta}\, \partial^{\chi}f^{\alpha\beta} +\\
&4\beta_1\, \partial_{\chi}f_{\beta\alpha}\, \partial^{\chi}f^{\alpha\beta} -4\beta_3\, \partial_{\chi}f_{\beta\alpha}\, \partial^{\chi}f^{\alpha\beta} +4(\beta_1+2\beta_3)\, \mathcal{A}_{\alpha\beta\chi}\, (\mathcal{A}^{\alpha\beta\chi} +2\partial^{\chi}f^{\alpha\beta})+\\
&\mathcal{A}_{\alpha\chi\beta}\, ((-3\alpha_0+4\beta_1-16\beta_3)\, \mathcal{A}^{\alpha\beta\chi} +16(\beta_1-\beta_3)\, \partial^{\chi}f^{\alpha\beta})+6\alpha_1\, \partial_{\beta}\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} -\\
&6\alpha_2\, \partial_{\beta}\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} -6\alpha_4\, \partial_{\beta}\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} +6\alpha_5\, \partial_{\beta}\mathcal{A}_{\chi}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} +\\
&6\alpha_1\, \partial_{\chi}\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} +6\alpha_2\, \partial_{\chi}\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} -6\alpha_4\, \partial_{\chi}\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} -\\
&6\alpha_5\, \partial_{\chi}\mathcal{A}_{\beta}{}^{\delta}{}_{\delta}\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha} +6\alpha_1\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} +6\alpha_2\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} -\\
&6\alpha_4\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} -6\alpha_5\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} -12\alpha_1\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} -\\
&12\alpha_2\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} +12\alpha_4\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} +12\alpha_5\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\beta}{}^{\delta}{}_{\chi} +\\
&6\alpha_1\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} -6\alpha_2\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} -6\alpha_4\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} +\\
&6\alpha_5\, \partial_{\alpha}\mathcal{A}^{\alpha\beta\chi}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} -12\alpha_1\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} +12\alpha_2\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} +\\
&12\alpha_4\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} -12\alpha_5\, \partial^{\chi}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}_{\chi}{}^{\delta}{}_{\beta} +8\alpha_1\, \partial_{\beta}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}^{\chi\delta}{}_{\chi} -\\
&12\alpha_4\, \partial_{\beta}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}^{\chi\delta}{}_{\chi} +4\alpha_6\, \partial_{\beta}\mathcal{A}^{\alpha\beta}{}_{\alpha}\, \partial_{\delta}\mathcal{A}^{\chi\delta}{}_{\chi} -8\alpha_1\, \partial_{\beta}\mathcal{A}_{\alpha\chi\delta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +\\
&8\alpha_3\, \partial_{\beta}\mathcal{A}_{\alpha\chi\delta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +4\alpha_1\, \partial_{\beta}\mathcal{A}_{\alpha\delta\chi}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -4\alpha_3\, \partial_{\beta}\mathcal{A}_{\alpha\delta\chi}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +\\
&8\alpha_1\, \partial_{\beta}\mathcal{A}_{\chi\delta\alpha}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -12\alpha_2\, \partial_{\beta}\mathcal{A}_{\chi\delta\alpha}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +4\alpha_3\, \partial_{\beta}\mathcal{A}_{\chi\delta\alpha}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -\\
&4\alpha_1\, \partial_{\chi}\mathcal{A}_{\alpha\beta\delta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -6\alpha_2\, \partial_{\chi}\mathcal{A}_{\alpha\beta\delta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -2\alpha_3\, \partial_{\chi}\mathcal{A}_{\alpha\beta\delta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +\\
&4\alpha_1\, \partial_{\delta}\mathcal{A}_{\alpha\beta\chi}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +6\alpha_2\, \partial_{\delta}\mathcal{A}_{\alpha\beta\chi}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +2\alpha_3\, \partial_{\delta}\mathcal{A}_{\alpha\beta\chi}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} +\\
&4\alpha_1\, \partial_{\delta}\mathcal{A}_{\alpha\chi\beta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi} -4\alpha_3\, \partial_{\delta}\mathcal{A}_{\alpha\chi\beta}\, \partial^{\delta}\mathcal{A}^{\alpha\beta\chi}\big)\Big)[t,x,y,z]\, dz\, dy\, dx\, dt\end{aligned}$$

Spin-parity form	Covariant form	Multiplicities
$\overset{\#2}{0^+}\tau ==0$	$\partial_{\beta}\partial_{\alpha}\tau^{\alpha\beta} == 0$	1
$\overset{\#2}{1^-}\tau^{\alpha} +2\,i\,k\,\overset{\#2}{1^-}\sigma^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau^{\alpha\beta} +2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\partial_{\beta}\sigma^{\alpha\beta\chi}$	3
$\overset{\#1}{1^-}\tau^{\alpha} == 0$	$\partial_{\chi}\partial_{\beta}\partial^{\alpha}\tau^{\beta\chi} == \partial_{\chi}\partial^{\chi}\partial_{\beta}\tau^{\beta\alpha}$	3
$\overset{\#1}{1^+}\tau^{\alpha\beta} +i\,k\,\overset{\#2}{1^+}\sigma^{\alpha\beta} == 0$	$\partial_{\chi}\partial^{\alpha}\tau^{\beta\chi} +\partial_{\chi}\partial^{\beta}\tau^{\chi\alpha} +\partial_{\chi}\partial^{\chi}\tau^{\alpha\beta} +2\,\partial_{\delta}\partial_{\chi}\partial^{\alpha}\sigma^{\beta\chi\delta} +2\,\partial_{\delta}\partial^{\delta}\partial_{\chi}\sigma^{\alpha\beta\chi} == \partial_{\chi}\partial^{\alpha}\tau^{\chi\beta} +\partial_{\chi}\partial^{\beta}\tau^{\alpha\chi} +\partial_{\chi}\partial^{\chi}\tau^{\beta\alpha} +2\,\partial_{\delta}\partial_{\chi}\partial^{\beta}\sigma^{\alpha\chi\delta}$	3
Total expected gauge generators:		10

	$\overset{\#1}{0^+}\sigma$	$\overset{\#1}{0^+}\tau$	$\overset{\#2}{0^+}\tau$	$\overset{\#1}{0^-}\sigma$
$\overset{\#1}{0^+}\sigma\dagger$	$-\frac{4\beta_2}{\alpha_0^2+2\alpha_0\beta_2-4(\alpha_4+\alpha_6)\beta_2k^2}$	$\frac{i\sqrt{2}(\alpha_0+2\beta_2)}{-\alpha_0(\alpha_0+2\beta_2)k+4(\alpha_4+\alpha_6)\beta_2k^3}$	0	0
$\overset{\#1}{0^+}\tau\dagger$	$\frac{i\sqrt{2}(\alpha_0+2\beta_2)}{\alpha_0(\alpha_0+2\beta_2)k-4(\alpha_4+\alpha_6)\beta_2k^3}$	$\frac{\frac{\alpha_0}{2}+\beta_2+(\alpha_4+\alpha_6)k^2}{-\frac{1}{2}\alpha_0(\alpha_0+2\beta_2)k^2+2(\alpha_4+\alpha_6)\beta_2k^4}$	0	0
$\overset{\#2}{0^+}\tau\dagger$	0	0 0		0
$\overset{\#1}{0^-}\sigma\dagger$	0	0	0	$\frac{2}{\alpha_0+8\beta_3+2(\alpha_2+\alpha_3)k^2}$

	$\overset{\#1}{0^+}\mathcal{A}$	$\overset{\#1}{0^+}f$	$\overset{\#2}{0^+}f$	$\overset{\#1}{0^-}\mathcal{A}$
$\overset{\#1}{0^+}\mathcal{A}\dagger$	$\frac{\alpha_0}{2}+\beta_2+(\alpha_4+\alpha_6)k^2$	$-\frac{i(\alpha_0+2\beta_2)k}{\sqrt{2}}$	0	0
$\overset{\#1}{0^+}f\dagger$	$\frac{i(\alpha_0+2\beta_2)k}{\sqrt{2}}$	$2\beta_2k^2$	0	0
$\overset{\#2}{0^+}f\dagger$	0 0		0	0
$\overset{\#1}{0^-}\mathcal{A}\dagger$	0 0		0	$\frac{\alpha_0}{2}+4\beta_3+(\alpha_2+\alpha_3)k^2$

	$\overset{\#1}{2^+}\mathcal{A}_{\alpha\beta}$	$\overset{\#1}{2^+}f_{\alpha\beta}$	$\overset{\#1}{2^-}\mathcal{A}_{\alpha\beta\chi}$
$\overset{\#1}{2^+}\mathcal{A}\dagger^{\alpha\beta}$	$-\frac{\alpha_0}{4}+\beta_1+(\alpha_1+\alpha_4)k^2$	$\frac{i(\alpha_0-4\beta_1)k}{2\sqrt{2}}$	0
$\overset{\#1}{2^+}f\dagger^{\alpha\beta}$	$-\frac{i(\alpha_0-4\beta_1)k}{2\sqrt{2}}$	$2\beta_1k^2$	0
$\overset{\#1}{2^-}\mathcal{A}\dagger^{\alpha\beta\chi}$	0 0		$-\frac{\alpha_0}{4}+\beta_1+(\alpha_1+\alpha_2)k^2$

	$\overset{\#1}{2^+}\sigma_{\alpha\beta}$	$\overset{\#1}{2^+}\tau_{\alpha\beta}$	$\overset{\#1}{2^-}\sigma_{\alpha\beta\chi}$
$\overset{\#1}{2^+}\sigma\dagger^{\alpha\beta}$	$\frac{16\beta_1}{-\alpha_0^2+4\alpha_0\beta_1+16(\alpha_1+\alpha_4)\beta_1k^2}$	$\frac{2i\sqrt{2}(\alpha_0-4\beta_1)}{\alpha_0(\alpha_0-4\beta_1)k-16(\alpha_1+\alpha_4)\beta_1k^3}$	0
$\overset{\#1}{2^+}\tau\dagger^{\alpha\beta}$	$-\frac{2i\sqrt{2}(\alpha_0-4\beta_1)}{\alpha_0(\alpha_0-4\beta_1)k-16(\alpha_1+\alpha_4)\beta_1k^3}$	$\frac{2(\alpha_0-4(\beta_1+(\alpha_1+\alpha_4)k^2))}{k^2(\alpha_0^2-4\alpha_0\beta_1-16(\alpha_1+\alpha_4)\beta_1k^2)}$	0
$\overset{\#1}{2^-}\sigma\dagger^{\alpha\beta\chi}$	0	0	$\frac{1}{-\frac{\alpha_0}{4}+\beta_1+(\alpha_1+\alpha_2)k^2}$

	$\overset{\#1}{1^+}\mathcal{A}_{\alpha\beta}$	$\overset{\#2}{1^+}\mathcal{A}_{\alpha\beta}$	$\overset{\#1}{1^+}f_{\alpha\beta}$	$\overset{\#1}{1^-}\mathcal{A}_{\alpha}$	$\overset{\#2}{1^-}\mathcal{A}_{\alpha}$	$\overset{\#1}{1^-}f_{\alpha}$	$\overset{\#2}{1^-}f_{\alpha}$
$\overset{\#1}{1^+}\mathcal{A}\dagger^{\alpha\beta}$	$\frac{\alpha_0}{4}+\frac{1}{3}(\beta_1+8\beta_3)+(\alpha_2+\alpha_5)k^2$	$\frac{3\alpha_0-4\beta_1+16\beta_3}{6\sqrt{2}}$	$\frac{i(3\alpha_0-4\beta_1+16\beta_3)k}{6\sqrt{2}}$	0	0 0		0
$\overset{\#2}{1^+}\mathcal{A}\dagger^{\alpha\beta}$	$\frac{3\alpha_0-4\beta_1+16\beta_3}{6\sqrt{2}}$	$\frac{2}{3}(\beta_1+2\beta_3)$	$\frac{2}{3}i(\beta_1+2\beta_3)k$	0	0 0		0
$\overset{\#1}{1^+}f\dagger^{\alpha\beta}$	$-\frac{i(3\alpha_0-4\beta_1+16\beta_3)k}{6\sqrt{2}}$	$-\frac{2}{3}i(\beta_1+2\beta_3)k$	$\frac{2}{3}(\beta_1+2\beta_3)k^2$	0	0 0		0
$\overset{\#1}{1^-}\mathcal{A}\dagger^{\alpha}$	0	0	0	$\frac{\alpha_0}{4}+\frac{1}{3}(\beta_1+2\beta_2)+(\alpha_4+\alpha_5)k^2$	$-\frac{3\alpha_0-4\beta_1+4\beta_2}{6\sqrt{2}}$	0	$-\frac{1}{6}i(3\alpha_0-4\beta_1+4\beta_2)k$
$\overset{\#2}{1^-}\mathcal{A}\dagger^{\alpha}$	0	0	0	$-\frac{3\alpha_0-4\beta_1+4\beta_2}{6\sqrt{2}}$	$\frac{1}{3}(2\beta_1+\beta_2)$	0	$\frac{1}{3}i\sqrt{2}(2\beta_1+\beta_2)k$
$\overset{\#1}{1^-}f\dagger^{\alpha}$	0	0	0	0	0 0		0
$\overset{\#2}{1^-}f\dagger^{\alpha}$	0	0	0	$\frac{1}{6}i(3\alpha_0-4\beta_1+4\beta_2)k$	$-\frac{1}{3}i\sqrt{2}(2\beta_1+\beta_2)k$	0	$\frac{2}{3}(2\beta_1+\beta_2)k^2$

Massive and massless spectra

Unitarity conditions