Particle spectrograph

Wave operator and propagator

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

Quadratic (free) action

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

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

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

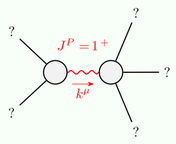
	$\omega^{\#1}_{0^+}{}$	$f^{\#1}_{0^+}{}$	$f^{\#2}_{0^+}{}$	$\omega^{\#1}_{0^-}{}$
$\omega^{\#1}_{0^+}{}^{\dagger}$	$\frac{\alpha_0}{2}+\beta_2+(\alpha_4+\alpha_6)k^2$	$-\frac{i(\alpha_0+2\beta_2)k}{\sqrt{2}}$	0	0
$f^{\#1}_{0^+}{}^{\dagger}$	$\frac{i(\alpha_0+2\beta_2)k}{\sqrt{2}}$	$2\beta_2k^2$	0	0
$f^{\#2}_{0^+}{}^{\dagger}$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

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

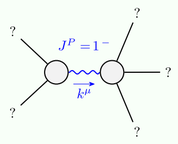
	$\omega^{\#1}_{2^+}{}_{\alpha\beta}$	$f^{\#1}_{2^+}{}_{\alpha\beta}$	$\omega^{\#1}_{2^-}{}_{\alpha\beta\chi}$
$\omega^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$-\frac{\alpha_0}{4}+\beta_1+(\alpha_1+\alpha_4)k^2$	$\frac{i(\alpha_0-4\beta_1)k}{2\sqrt{2}}$	0
$f^{\#1}_{2^+}{}^{\dagger\alpha\beta}$	$-\frac{i(\alpha_0-4\beta_1)k}{2\sqrt{2}}$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

Source constraints/gauge generators	SO(3) irreps	Multiplicities
$\tau^{\#2}_{0^+}=0$	1	1
$\tau^{\#2\alpha}_{1^-}+2ik\,\sigma^{\#2\alpha}_{1^-}=0$	3	1
$\tau^{\#1\alpha}_{1^-}=0$	3	1
$\tau^{\#1\alpha\beta}_{1^+}+ik\,\sigma^{\#2\alpha\beta}_{1^+}=0$	3	1
Total constraints:	10	

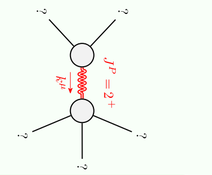
Massive and massless spectra



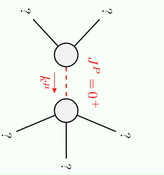
Massive particle	
Pole residue:	$(3(\alpha_0^2(3\alpha_2+3\alpha_5+2\beta_1+4\beta_3)-8\alpha_0(\beta_1^2+\alpha_2(\beta_1-4\beta_3)+\alpha_5(\beta_1-4\beta_3)-4\beta_3^2)+16(-4\beta_1\beta_3(\beta_1+2\beta_3)+\alpha_2(\beta_1^2+8\beta_3^2)+\alpha_5(\beta_1^2+8\beta_3^2)))) / (2(\alpha_2+\alpha_5)(\beta_1+2\beta_3)(3\alpha_0^2-12\alpha_0(\beta_1-2\beta_3)+16(\alpha_5\beta_1+2\alpha_5\beta_3-6\beta_1\beta_3+\alpha_2(\beta_1+2\beta_3)))) > 0$
Polarisations:	3
Square mass:	$\frac{3(\alpha_0-4\beta_1)(\alpha_0+8\beta_3)}{16(\alpha_2+\alpha_5)(\beta_1+2\beta_3)} > 0$
Spin:	1
Parity:	Even



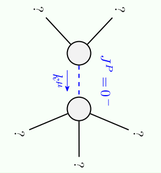
Massive particle	
Pole residue:	$-((3(\alpha_0^2(3\alpha_4+3\alpha_5+4\beta_1+2\beta_2)+4\alpha_0(-2\alpha_4\beta_1-2\alpha_5\beta_1-4\beta_1^2+2\alpha_4\beta_2+2\alpha_5\beta_2+\beta_2^2)+8(-2\beta_1\beta_2(2\beta_1+\beta_2)+\alpha_4(2\beta_1^2+\beta_2^2)+\alpha_5(2\beta_1^2+\beta_2^2)))) / (2(\alpha_4+\alpha_5)(2\beta_1+\beta_2)(3\alpha_0^2+6\alpha_0(-2\beta_1+\beta_2)+4(2\alpha_5\beta_1+\alpha_5\beta_2-6\beta_1\beta_2+\alpha_4(2\beta_1+\beta_2))))) > 0$
Polarisations:	3
Square mass:	$\frac{3(\alpha_0-4\beta_1)(\alpha_0+2\beta_2)}{8(\alpha_4+\alpha_5)(2\beta_1+\beta_2)} > 0$
Spin:	1
Parity:	Odd



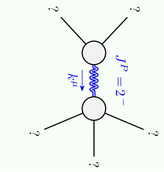
Massive particle	
Pole residue:	$-\frac{2}{\alpha_0}+\frac{\alpha_1+\alpha_4+2\beta_1}{2\alpha_1\beta_1+2\alpha_4\beta_1} > 0$
Polarisations:	5
Square mass:	$\frac{\alpha_0(\alpha_0-4\beta_1)}{16(\alpha_1+\alpha_4)\beta_1} > 0$
Spin:	2
Parity:	Even



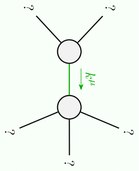
Massive particle	
Pole residue:	$\frac{1}{\alpha_0}+\frac{\alpha_4+\alpha_6+2\beta_2}{2\alpha_4\beta_2+2\alpha_6\beta_2} > 0$
Polarisations:	1
Square mass:	$\frac{\alpha_0(\alpha_0+2\beta_2)}{4(\alpha_4+\alpha_6)\beta_2} > 0$
Spin:	0
Parity:	Even



Massive particle	
Pole residue:	$-\frac{1}{\alpha_2+\alpha_3} > 0$
Polarisations:	1
Square mass:	$-\frac{\alpha_0+8\beta_3}{2(\alpha_2+\alpha_3)} > 0$
Spin:	0
Parity:	Odd



Massive particle	
Pole residue:	$-\frac{1}{\alpha_1+\alpha_2} > 0$
Polarisations:	5
Square mass:	$\frac{\alpha_0-4\beta_1}{4(\alpha_1+\alpha_2)} > 0$
Spin:	2
Parity:	Odd



Quadratic pole	
Pole residue:	$\frac{1}{\alpha_0} > 0$
Polarisations:	2

Unitarity conditions

(Unitarity is demonstrably impossible)