

Wave operator and propagator

$\#1 \uparrow$	α	$\frac{2(t_1+t_2)}{3t_1t_2+2k^2r_5(t_1+t_2)}$	$\frac{\sqrt{2}(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{i\sqrt{2}k(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))}$	0	0	0	0
$\#2 \uparrow$	α	$\frac{\sqrt{2}(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{6k^2r_5+t_1+4t_2}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{ik(6k^2r_5+t_1+4t_2)}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	0	0	0	0
$\#1 \uparrow$	α	$-\frac{i\sqrt{2}k(t_1-2t_2)}{(1+k^2)(3t_1t_2+2k^2r_5(t_1+t_2))}$	$-\frac{ik(6k^2r_5+t_1+4t_2)}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	$\frac{k^2(6k^2r_5+t_1+4t_2)}{(1+k^2)^2(3t_1t_2+2k^2r_5(t_1+t_2))}$	0	0	0	0
$\#1 \uparrow$	α	0	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2t_1}$	0	$\frac{2ik}{t_1+2k^2t_1}$
$\#2 \uparrow$	α	0	0	0	$\frac{\sqrt{2}}{t_1+2k^2t_1}$	$\frac{-2k^2r_5+t_1}{(t_1+2k^2t_1)^2}$	0	$-\frac{i\sqrt{2}k(2k^2r_5-t_1)}{(t_1+2k^2t_1)^2}$
$\#1 \uparrow$	α	0	0	0	0	0	0	0
$\#2 \uparrow$	α	0	0	0	0	$-\frac{2ik}{t_1+2k^2t_1}$	0	$\frac{-4k^4r_5+2k^2t_1}{(t_1+2k^2t_1)^2}$

	$\omega_{1^+}^{\#1} \alpha \beta$	$\omega_{1^+}^{\#2} \alpha \beta$	$f_{1^+}^{\#1} \alpha \beta$	$\omega_{1^-}^{\#1} \alpha$	$\omega_{1^-}^{\#2} \alpha$	$f_{1^-}^{\#1} \alpha$	$f_{1^-}^{\#2} \alpha$
$\omega_{1^+}^{\#1} \dagger \alpha \beta$	$\frac{1}{6} (6 k^2 r_5 + t_1 + 4 t_2)$	$-\frac{t_1-2t_2}{3 \sqrt{2}}$	$-\frac{i k (t_1-2t_2)}{3 \sqrt{2}}$	0	0	0	0
$\omega_{1^+}^{\#2} \dagger \alpha \beta$	$-\frac{t_1-2t_2}{3 \sqrt{2}}$	$\frac{t_1+t_2}{3}$	$\frac{1}{3} i k (t_1+t_2)$	0	0	0	0
$f_{1^+}^{\#1} \dagger \alpha \beta$	$\frac{i k (t_1-2t_2)}{3 \sqrt{2}}$	$-\frac{1}{3} i k (t_1+t_2)$	$\frac{1}{3} k^2 (t_1+t_2)$	0	0	0	0
$\omega_{1^-}^{\#1} \dagger \alpha$	0	0	0	$k^2 r_5 - \frac{t_1}{2}$	$\frac{t_1}{\sqrt{2}}$	0	$i k t_1$
$\omega_{1^-}^{\#2} \dagger \alpha$	0	0	0	$\frac{t_1}{\sqrt{2}}$	0	0	0
$f_{1^-}^{\#1} \dagger \alpha$	0	0	0	0	0	0	0
$f_{1^-}^{\#2} \dagger \alpha$	0	0	0	$-i k t_1$	0	0	0

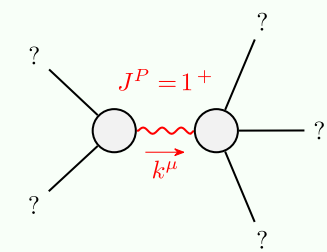
	$\omega_0^{\#1}$	$f_0^{\#1}$	$f_0^{\#2}$	$\omega_0^{\#1}$
$\omega_0^{\#1} \uparrow$	$-t_1$	$i \sqrt{2} k t_1$	0	0
$f_0^{\#1} \uparrow$	$-i \sqrt{2} k t_1$	$-2 k^2 t_1$	0	0
$f_0^{\#2} \uparrow$	0	0	0	0
$\omega_0^{\#1} \downarrow$	0	0	0	t_2

	$\sigma_{0+}^{\#1}$	$\tau_{0+}^{\#1}$	$\tau_{0+}^{\#2}$	$\sigma_{0-}^{\#1}$
$\sigma_{0+}^{\#1} \uparrow$	$-\frac{1}{(1+2k^2)^2 t_1}$	$\frac{i \sqrt{2} k}{(1+2k^2)^2 t_1}$	0	0
$\tau_{0+}^{\#1} \uparrow$	$-\frac{i \sqrt{2} k}{(1+2k^2)^2 t_1}$	$-\frac{2k^2}{(1+2k^2)^2 t_1}$	0	0
$\tau_{0+}^{\#2} \uparrow$	0	0	0	0
$\sigma_{0-}^{\#1} \uparrow$	0	0	0	$\frac{1}{t_2}$

	$\omega_{2^+ \alpha\beta}^{\#1}$	$f_{2^+ \alpha\beta}^{\#1}$	$\omega_{2^- \alpha\beta\chi}^{\#1}$
$\omega_{2^+}^{\#1} \dagger^{\alpha\beta}$	$\frac{t_1}{2}$	$-\frac{ik t_1}{\sqrt{2}}$	0
$f_{2^+}^{\#1} \dagger^{\alpha\beta}$	$\frac{ik t_1}{\sqrt{2}}$	$k^2 t_1$	0
$\omega_{2^-}^{\#1} \dagger^{\alpha\beta\chi}$	0	0	$\frac{t_1}{2}$

	$\sigma_{2^{+}}^{\#1} \alpha\beta$	$\tau_{2^{+}}^{\#1} \alpha\beta$	$\sigma_{2^{-}}^{\#1} \alpha\beta\chi$
$\sigma_{2^{+}}^{\#1} \dagger \alpha\beta$	$\frac{2}{(1+2k^2)^2 t_1}$	$-\frac{2i\sqrt{2}k}{(1+2k^2)^2 t_1}$	0
$\tau_{2^{+}}^{\#1} \dagger \alpha\beta$	$\frac{2i\sqrt{2}k}{(1+2k^2)^2 t_1}$	$\frac{4k^2}{(1+2k^2)^2 t_1}$	0
$\sigma_{2^{-}}^{\#1} \dagger \alpha\beta\chi$	0	0	$\frac{2}{t_1}$

Massive and massless spectra



Massive particle	
Pole residue:	$\frac{-3t_1 t_2 (t_1+t_2)+3r_5 (t_1^2+2t_2^2)}{r_5 (t_1+t_2) (-3t_1 t_2+2r_5 (t_1+t_2))} > 0$
Polarisations:	3
Square mass:	$-\frac{3t_1 t_2}{2r_5 t_1+2r_5 t_2} > 0$
Spin:	1
Parity:	Even

(No massless particles)

Unitarity conditions

$$r_5 > 0 \ \&\& (t_1 < 0 \ \&\& (t_2 < 0 \ || \ t_2 > -t_1)) \ || (t_1 > 0 \ \&\& -t_1 < t_2 < 0)$$