

$$\begin{aligned}
-i\tilde{t}_i^{(s)} &= \frac{g_{K^+n}^2}{M_I - M_R + i\Gamma/2} \left\{ G(M_I)(a_i + c_i) - \frac{1}{3}\bar{G}(M_I)b_i \right\} \boldsymbol{\sigma} \cdot \mathbf{k}_{in} S_I(i) , \\
-i\tilde{t}_i^{(p,1/2)} &= \frac{\bar{g}_{K^+n}^2}{M_I - M_R + i\Gamma/2} \bar{G}(M_I) \left\{ \frac{1}{3}b_i \mathbf{k}_{in}^2 - a_i + d_i \right\} \boldsymbol{\sigma} \cdot \mathbf{q}' S_I(i) , \\
-i\tilde{t}_i^{(p,3/2)} &= \frac{\tilde{g}_{K^+n}^2}{M_I - M_R + i\Gamma/2} \bar{G}(M_I) \frac{1}{3}b_i \left\{ (\mathbf{k}_{in} \cdot \mathbf{q}')(\boldsymbol{\sigma} \cdot \mathbf{k}_{in}) - \frac{1}{3}\mathbf{k}_{in}^2 \boldsymbol{\sigma} \cdot \mathbf{q}' \right\} S_I(i) ,
\end{aligned}$$