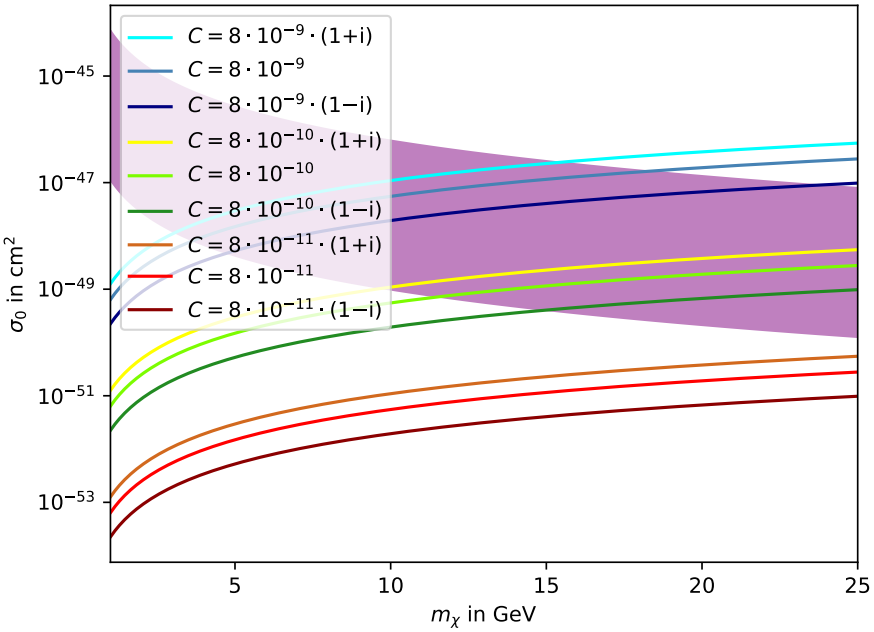

Abbildung 1: $q_\chi = q_l = 1$, $m_{Z'} = 2m_\chi$, $2 \cdot 10^{-3} \leq g' \leq 10^{-2}$

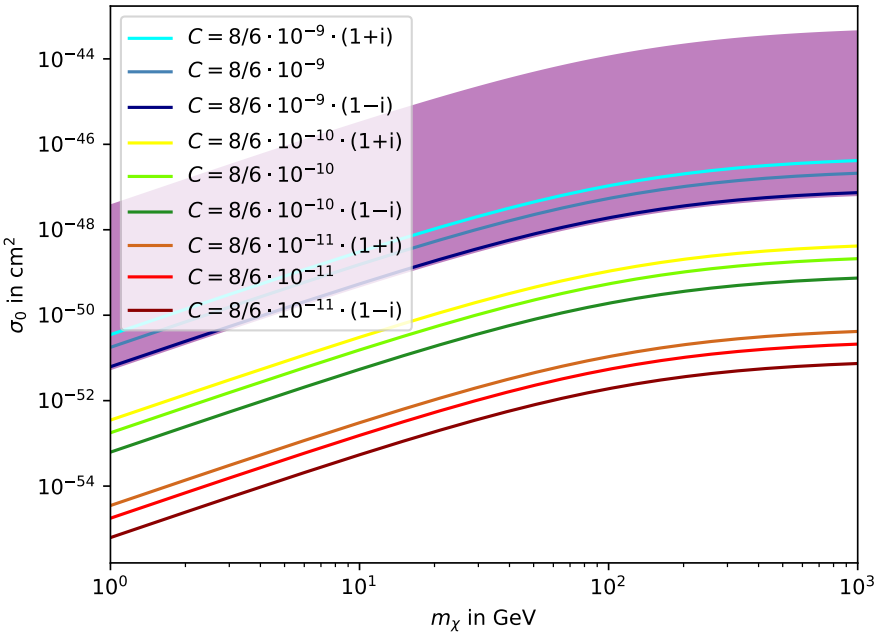

Abbildung 2: $q_\chi = \frac{1}{6}$, $q_l = 1$, $m_{Z'} = 2m_\chi$, $540\,\text{GeV} \leq \frac{m_{Z'}}{g'} \leq 4.9\,\text{TeV}$

$$\mathcal{L} = C(\bar{\chi}\gamma_\mu\chi)(\bar{s}_L\gamma^\mu b_L) + C^*(\bar{\chi}\gamma_\mu\chi)(\bar{b}_L\gamma^\mu s_L)$$

$$\begin{aligned}
\sigma_{0,Z'} &= \frac{\mu_{\chi A}^2}{\pi A^2}|Z \cdot C_p + (A - Z) \cdot C_n|^2 \\
&= \frac{\mu_{\chi A}^2}{\pi A^2}(2A - Z)^2 \cdot (\text{Re}(V_{cd}^* V_{td} C))^2 \\
\sigma_{0,\text{Loop}} &= \frac{\mu_{\chi A}^2}{\pi A^2}\left(\frac{Z\alpha_{em}}{3\pi}\frac{q_\chi q_l g'^2}{m_{Z'}^2}\log\left(\frac{m_\mu^2}{m_\tau^2}\right)\right)^2
\end{aligned}$$

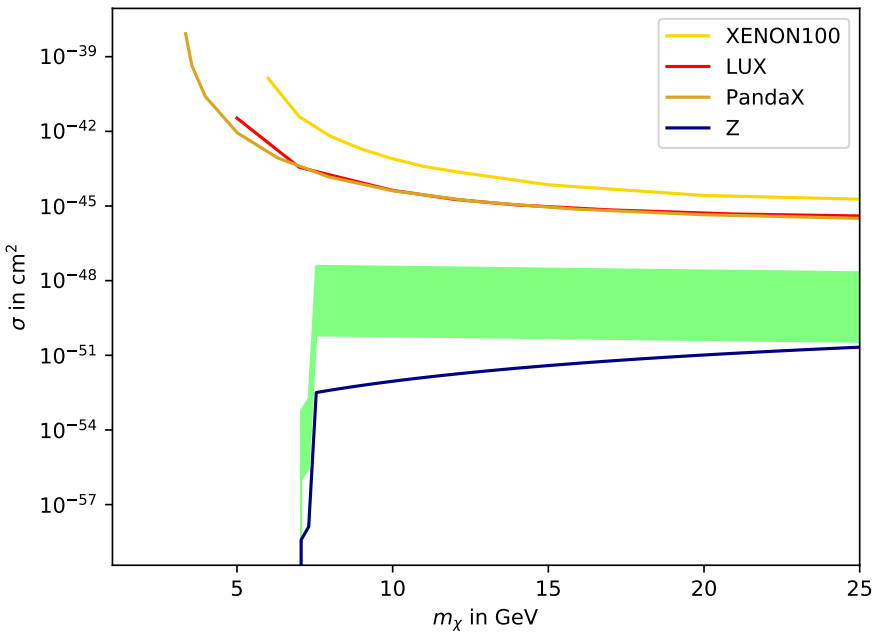

Abbildung 3: $q_\chi = q_l = 1$, $m_{Z'} = 2m_\chi$, $2 \cdot 10^{-3} \leq g' \leq 10^{-2}$, $E_{min} = 0\,\text{keV}, E_{max} = 10\,\text{keV}$

$$\frac{d\sigma}{dE_R} = \frac{m_A}{2\pi v^2}|M|^2 F(E_R) = \frac{m_A}{2v^2}\frac{A^2}{\mu_{\chi A}^2}\sigma_0 F(E_R)$$

$$\begin{aligned}\langle\frac{d\sigma}{dE_R}\rangle &= \frac{m_A}{2}\frac{A^2}{\mu_{\chi A}^2}\sigma_0 F(E_R)\int_{v_{min}}^{\infty} dv\ \frac{f(v)}{v} \\ &= \frac{m_A}{2}\frac{A^2}{\mu_{\chi A}^2}\sigma_0\frac{F(E_R)}{2v_E}\left[\text{erf}\left(\frac{v_E - v_{min}}{v_0}\right) + \text{erf}\left(\frac{v_E + v_{min}}{v_0}\right)\right]\end{aligned}$$

$$\langle\sigma\rangle = \frac{m_A}{2}\frac{A^2}{\mu_{\chi A}^2}\sigma_0\frac{1}{2v_E}\int_{E_{min}}^{E_{max}} dE_R\ F(E_R)\left[\text{erf}\left(\frac{v_E - v_{min}(E_R)}{v_0}\right) + \text{erf}\left(\frac{v_E + v_{min}(E_R)}{v_0}\right)\right]$$