$$\frac{\mathrm{d}\sigma_{\mathrm{M}}(v, E_{\mathrm{R}})}{\mathrm{d}E_{\mathrm{R}}} = \frac{\mathrm{d}\sigma_{\mathrm{M}}^{\mathrm{SI}}(v, E_{\mathrm{R}})}{\mathrm{d}E_{\mathrm{R}}} + \frac{\mathrm{d}\sigma_{\mathrm{M}}^{\mathrm{SD}}(v, E_{\mathrm{R}})}{\mathrm{d}E_{\mathrm{R}}} =$$

$$\alpha\lambda_{\chi}^{2}\left\{Z^{2}\left[\frac{1}{E_{\mathrm{R}}} - \frac{1}{v^{2}}\left(\frac{2m_{\mathcal{N}} + m_{\chi}}{2m_{\mathcal{N}}m_{\chi}}\right)\right]F_{\mathrm{SI}}^{2}(E_{\mathrm{R}}) + \frac{1}{v^{2}}\left(\frac{\bar{\lambda}_{\mathrm{nuc}}}{\lambda_{p}}\right)^{2}\frac{m_{\mathcal{N}}}{3m_{p}^{2}}F_{\mathrm{SD}}^{2}(E_{\mathrm{R}})\right\}$$