$$\lim_{E_i^*, E_f^*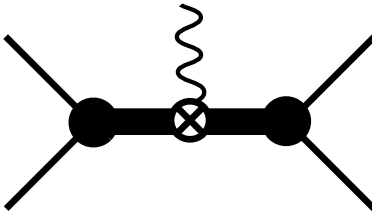 \to E_R} i\mathcal{W} = \lim_{E_i^*, E_f^* \to E_R} i\mathcal{W}_{\mathrm{df}} = \;$$