$$\lim_{E_i^*, E_f^* \to E_R} i \mathcal{W} = \lim_{E_i^*, E_f^* \to E_R} i \mathcal{W}_{\mathrm{df}} = \sum_{i \in \mathcal{M}} \sum_{k=1}^{\infty} \sum_{i \in \mathcal{M}} \sum_{k=1}^{\infty} i \mathcal{W}_{\mathrm{df}} = \sum_{i \in \mathcal{M}} \sum_{k=1}^{\infty} \sum_{i \in \mathcal{M}} \sum_{i \in \mathcal{M}} \sum_{k=1}^{\infty} \sum_{i \in \mathcal{M}} \sum_{k=1}^{\infty} \sum_{i \in \mathcal{M}} \sum_{i \in \mathcal{M}$$