

$$\begin{aligned}
 \text{UCF}[\mathcal{E}_-] &:= \text{PP}_{\text{UCF}} @ \text{Module} \left[\{F, k\}, \text{Expand} @ \text{Collect} \left[\right. \right. \\
 &\quad \mathcal{E} // . \{U_{i_-}[L_{---}, _ [0], r_{---}] \rightarrow U_i[1, r]\} // . \text{If}[\$k == \infty, \{\}, \{ \\
 &\quad U_{i_-}[L_{---}, AB_ [n_], r_{---}] \Rightarrow \text{Sum} \left[\text{As}[k, 0, \$k], \right. \\
 &\quad \left. \frac{(-2)^k \hbar^k \epsilon^k n^k}{k!} U_i[L, \text{Sequence} @@ \text{Table}[a @@ \iota[AB], k], r] \right] \\
 &\quad \left. \left. \right\} \right], \\
 &\quad U_ [---], F \\
 &\left. \right] /. F \rightarrow \text{CF} \left] \right]
 \end{aligned}$$