

$$\rho @ y_{cu} = \rho @ y_{qu} = \begin{pmatrix} \emptyset & \emptyset \\ \epsilon & \emptyset \end{pmatrix}; \quad \rho @ a_{cu} = \rho @ a_{qu} = \begin{pmatrix} \gamma & \emptyset \\ \emptyset & \emptyset \end{pmatrix};$$

$$\rho @ x_{cu} = \begin{pmatrix} \emptyset & \gamma \\ \emptyset & \emptyset \end{pmatrix}; \quad \rho @ x_{qu} = \begin{pmatrix} \emptyset & (1 - e^{-\gamma \epsilon \hbar}) / (\epsilon \hbar) \\ \emptyset & \emptyset \end{pmatrix};$$

$$\rho [e^{\mathcal{E}_-}] := \text{MatrixExp} [\rho [\mathcal{E}]];$$

$$\rho [\mathcal{E}_-] :=$$

$$\left(\mathcal{E} /. \mathbf{U21} /. \mathbf{t} \rightarrow \gamma \epsilon /. \right.$$

$$\left. (\mathbf{U} : \mathbf{CU} \mid \mathbf{QU}) [u_] \Rightarrow \text{Fold} \left[\text{Dot}, \begin{pmatrix} 1 & \emptyset \\ \emptyset & 1 \end{pmatrix}, \rho /. \mathbf{U} /. \{u\} \right] \right)$$