

$$\begin{array}{ccc} \mathfrak{U} & \xleftarrow{s} & \mathcal{G} & \xrightarrow{r} & \mathfrak{U} \\ & & \gamma \bar{\gamma}^{-1} \leftrightarrow \gamma & & \gamma \mapsto \bar{\gamma}^{-1} \gamma \end{array}$$