

$$\begin{array}{ccc}
 \forall \alpha \in V & \xrightarrow{\varphi} & \varphi(\alpha) \in U \\
 \eta_V \downarrow & & \downarrow \eta_U \\
 \begin{pmatrix} \lambda_1 \\ \lambda_2 \\ \vdots \\ \lambda_n \end{pmatrix} \in \mathbb{K}^n & \xrightarrow{\varphi_A} & A \begin{pmatrix} \lambda_1 \\ \lambda_2 \\ \vdots \\ \lambda_n \end{pmatrix} = \begin{pmatrix} \mu_1 \\ \mu_2 \\ \vdots \\ \mu_m \end{pmatrix} \in \mathbb{K}^m
 \end{array}$$