

$$\begin{array}{ccc}
\left\{ \begin{array}{l} \mathbb{C} | \mathbb{F} \times \mathbb{C} | \Gamma \\ {}^m \mathbb{K}_m \times {}^n \mathbb{K}_n \end{array} \right. & \xrightarrow[\text{on}]{\times} & \left\{ \begin{array}{l} \mathbb{C} | \nabla_0 \Gamma \\ \mathbb{C} | {}^m \mathbb{K}_n \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{E} | \mathbb{F} \times \mathbb{E} | \Gamma \\ {}^m \mathbb{K}_m \times {}^n \mathbb{K}_n \end{array} \right. & \xrightarrow{\text{on}} & \left\{ \begin{array}{l} \mathbb{E} | \nabla_0 \Gamma \\ \mathbb{E} | {}^m \mathbb{K}_n \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{U} | \mathbb{F} \times \mathbb{U} | \Gamma \\ {}^m \mathbb{K}_m^{\mathbb{U}} \times {}^n \mathbb{K}_n^{\mathbb{U}} \end{array} \right. & \xrightarrow{\text{on}} & \left\{ \begin{array}{l} \mathbb{U} | \nabla_0 \Gamma \\ \mathbb{U} | {}^m \mathbb{K}_n \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{U} | \mathbb{F} \times \mathbb{U} | \Gamma \\ {}^m \mathbb{K}_m^{\mathbb{U}} \times {}^n \mathbb{K}_n^{\mathbb{U}} \end{array} \right. & \xrightarrow{\text{on}} & \left\{ \begin{array}{l} \mathbb{U} | \nabla_0 \Gamma \\ \mathbb{U} | {}^m \mathbb{K}_n \end{array} \right.
\end{array}$$

$$\mathbb{F} \times \frac{\mathbb{F} \mid 0}{0 \mid \mathbb{F}} = \mathbb{F}^{-1} \mathbb{F} \mathbb{F}$$

$$\mathbb{F} \times \frac{\mathbb{F} \mid 0}{0 \mid \mathbb{F}} = -\mathbb{F} \mathbb{F} + \mathbb{F} \mathbb{F}$$

$$\mathbb{F} \times \frac{\mathbb{F} \mid 0}{0 \mid \mathbb{F}} = \mathbb{F}^{-1} \mathbb{F} \mathbb{F} = \mathbb{F}^* \mathbb{F} \mathbb{F}$$

$$\mathbb{F} \times \frac{\mathbb{F} \mid 0}{0 \mid \mathbb{F}} = -\mathbb{F} \mathbb{F} + \mathbb{F} \mathbb{F} = \mathbb{F}^* \mathbb{F} + \mathbb{F} \mathbb{F}$$

$$\begin{array}{ccc}
\left\{ \begin{array}{l} \mathbb{C} | \Gamma \\ \mathbb{C} | {}^n \mathbb{K}_n \end{array} \right. & \xrightarrow[\text{on}]{\times} & \left\{ \begin{array}{l} \mathbb{C} | \begin{array}{l} \Gamma \\ \Gamma_0 \end{array} \begin{array}{l} \mathbb{C} \\ \mathbb{C} \end{array} \Gamma \\ \mathbb{C} | {}^n \mathbb{K}_n^{\mathbb{C}} \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{E} | \Gamma \\ \mathbb{E} | {}^n \mathbb{K}_n \end{array} \right. & \xrightarrow[\text{on}]{\times} & \left\{ \begin{array}{l} \mathbb{E} | \begin{array}{l} \Gamma \\ \Gamma_0 \end{array} \begin{array}{l} \mathbb{C} \\ \mathbb{C} \end{array} \Gamma \\ \mathbb{E} | {}^n \mathbb{K}_n^{\mathbb{C}} \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{U} | \Gamma \\ \mathbb{U} | {}^n \mathbb{K}_n^{\mathbb{U}} \end{array} \right. & \xrightarrow[\text{on}]{\times} & \left\{ \begin{array}{l} \mathbb{U} | \begin{array}{l} \Gamma \\ \Gamma_0 \end{array} \begin{array}{l} \mathbb{C} \\ \mathbb{C} \end{array} \Gamma \\ \mathbb{U} | {}^n \mathbb{K}_n^{\mathbb{C}} \end{array} \right. \\
\uparrow \text{exp} & & \uparrow \text{exp} \\
\left\{ \begin{array}{l} \mathbb{U} | \Gamma \\ \mathbb{U} | {}^n \mathbb{K}_n^{\mathbb{U}} \end{array} \right. & \xrightarrow{\times} & \left\{ \begin{array}{l} \mathbb{U} | \begin{array}{l} \Gamma \\ \Gamma_0 \end{array} \begin{array}{l} \mathbb{C} \\ \mathbb{C} \end{array} \Gamma \\ \mathbb{U} | {}^n \mathbb{K}_n^{\mathbb{C}} \end{array} \right.
\end{array}$$

$$\Gamma \times \frac{\begin{array}{c|c} \mathbb{J}^{-1} & 0 \\ \hline 0 & \Gamma \end{array}}{0} = \mathbb{J} \Gamma \Gamma = \Gamma \times \Gamma$$

$$\Gamma \times \frac{\begin{array}{c|c} -\mathbb{J} & 0 \\ \hline 0 & \Gamma \end{array}}{0} = \mathbb{J} \Gamma + \Gamma \Gamma = \Gamma \times \Gamma$$

$$\underbrace{\times \Gamma}_{\times} \times \underbrace{\times \Gamma}_{\times} = - \underbrace{\Gamma \mathbb{J}}_{\times}$$