

$$i\mathbb{R} \begin{array}{c} \infty \\ \triangleleft \\ m \end{array} C \otimes C \begin{array}{c} \triangleleft \\ -m \\ i\mathbb{R} \end{array} \xrightarrow{\simeq} \mathbb{R} \begin{array}{c} 1 \\ \triangleleft \\ -m \end{array} C \otimes C \begin{array}{c} \triangleleft \\ m \\ \mathbb{R} \end{array}$$

$$\downarrow$$

$$\downarrow$$

$$\Theta \mid i\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ m \end{array} C \xrightarrow{\simeq} \Theta \mid \mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ C \end{array}$$

$$i\mathbb{R} \begin{array}{c} \triangleleft \\ 0 \end{array} C \otimes C \begin{array}{c} \triangleleft \\ m \\ i\mathbb{R} \end{array} \xrightarrow{\simeq} \mathbb{R} \begin{array}{c} 1 \\ \triangleleft \\ m \end{array} C \otimes C \begin{array}{c} \triangleleft \\ m \\ \mathbb{R} \end{array}$$

$$\downarrow$$

$$\downarrow$$

$$\Theta \mid i\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ m \end{array} C \xrightarrow{\simeq} \Theta \mid \mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ C \end{array}$$

$$\begin{array}{ccccccc}
 i\mathbb{R} \begin{array}{c} \triangleleft \\ 0 \end{array} C & \xrightarrow{\square} & i\mathbb{R} \begin{array}{c} \infty \\ \triangleleft \\ m \end{array} C & \xrightarrow[\text{productor}]{M} & \Theta \mid i\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ m \end{array} C & \xleftarrow[\text{translator}]{C} & C \begin{array}{c} \triangleleft \\ -m \\ i\mathbb{R} \end{array} & \xleftarrow{\square} & C \begin{array}{c} \triangleleft \\ m \\ i\mathbb{R} \end{array} \\
 \downarrow \simeq & & \downarrow \simeq & & \downarrow \simeq & & \downarrow \simeq & & \downarrow \simeq \\
 \mathbb{R} \begin{array}{c} 1 \\ \triangleleft \\ m \end{array} C & \xrightarrow{\square} & \mathbb{R} \begin{array}{c} 1 \\ \triangleleft \\ -m \end{array} C & \xrightarrow[\hat{M}]{\text{co-translator}} & \Theta \mid \mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ C \end{array} & \xleftarrow[\hat{C}]{\text{co-productor}} & C \begin{array}{c} \triangleleft \\ m \\ \mathbb{R} \end{array} & \xleftarrow{\square} & C \begin{array}{c} \triangleleft \\ m \\ \mathbb{R} \end{array}
 \end{array}$$

$$i\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ m \end{array} C \xleftarrow[\varphi \otimes \varphi]{f \otimes \varphi} l_u \quad i\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ m \end{array} C$$

$$\downarrow \simeq$$

$$\downarrow \simeq$$

$$\mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ C \end{array} \xleftarrow[\varphi^1]{u^\#} \mathbb{R} \begin{array}{c} 2 \\ \triangleleft \\ C \end{array}$$

$$\varphi \underset{\alpha}{\overset{1}{\times}} \xi = \sum_{\beta \in \mathbb{R}} \varphi_{\alpha - \beta} \xi_{\beta}$$