

$$\mathbb{L}_{\bigtriangleup \mathbb{K}}^m \xleftarrow{\mathbb{L} \, \mathbb{T} \leftarrow \mathbb{L} : \mathbb{T}} \mathbb{L}_{\bigtriangleup \mathbb{L}}^{\prime} \ltimes \mathbb{L}_{\bigtriangleup \mathbb{K}}^m$$

$${}_M\mathbb{L}\left(\mathbb{L}\,\mathbb{T}\right)=\left({}_M\mathbb{L}\,\mathbb{L}\right)\,\mathbb{T}$$

$$\begin{bmatrix} \mathbb{L} \\ + \\ m\mathbb{L} \end{bmatrix} \left(\mathbb{L}_{\bigtriangleup \mathbb{K}}^m\right) \mathbb{T} = \begin{bmatrix} \mathbb{L} \, \mathbb{L} \\ + \\ m\mathbb{L} \, \mathbb{L} \end{bmatrix} \mathbb{T}$$

$$\mathbb{L} \, \underbrace{\mathbb{L} \mathbb{L}} = \underbrace{\mathbb{L} \mathbb{L}} \mathbb{L}$$

$$\begin{bmatrix} \mathbb{L} \\ \mathbb{M} \mathbb{L} \\ \mathbb{N} \mathbb{L} \end{bmatrix} \mathbb{T}, \mathbf{x} \mathbb{T}_r = \left({}_M\mathbb{L}^{\prime}\right) \ltimes \left({}_N\mathbb{L}^{\sharp}\right)$$

$$\underbrace{\mathbb{L}_{\bigtriangleup \mathbb{K}}^m}_{} \left(\mathbb{T} \mathbf{x} \mathbb{T}^{\sharp}\right) = \underbrace{\mathbb{L}_{\bigtriangleup \mathbb{K}}^m}_{} \mathbb{T} \mathbf{x} \underbrace{\mathbb{L}_{\bigtriangleup \mathbb{K}}^m}_{} \mathbb{T}^{\sharp}$$

$$\mathbb{L} \ltimes \mathbb{T} = \partial_t^0 \left(\exp t \, \mathbb{L} \right) \mathbb{T}$$

$$\begin{bmatrix} \mathbb{L} \\ + \\ m\mathbb{L} \end{bmatrix} \left(\mathbb{L}_{\bigtriangleup \mathbb{T}}^m\right) \mathbb{T} = \mathbb{L} \left(\begin{bmatrix} \mathbb{L} \, \mathbb{L} \\ + \\ m\mathbb{L} \, \mathbb{L} \end{bmatrix} \mathbb{T}\right)$$

$$\underbrace{\mathbb{L}_{\bigtriangleup \mathbb{T}}^m}_{} \mathbb{T} \mathbf{x} \mathbb{T}^{\sharp} = \underbrace{\mathbb{L}_{\bigtriangleup \mathbb{T}}^m}_{} \mathbb{T} \mathbf{x} \underbrace{\mathbb{L}_{\bigtriangleup \mathbb{T}}^m}_{} \mathbb{T}^{\sharp}$$