$$\mathcal{C}_1 = C^* \frac{s}{s^*s = 1: \quad ss^* = 1} \xleftarrow{\text{on}} \mathcal{T}_1 = C^* \frac{t}{t^*t = 1: \quad tt^* < 1} \xleftarrow{\text{in}} \mathcal{K}_1$$

$$\mathbb{T} \underset{0}{\triangle} \mathbb{C} \xleftarrow[\text{on}]{} \mathcal{T} | \mathbb{T} \overset{2}{\underset{\omega}{\triangle}} \mathbb{C} \xleftarrow[\text{in}]{} \mathcal{K} | \mathbb{T} \overset{2}{\underset{\omega}{\triangle}} \mathbb{C}$$

$$z^0 \overset{*}{z}^0 = I - T_z T_z^* \in \mathcal{T}$$

$$z^m \overset{*}{z}^n = T_z^m \underbrace{z^0 \overset{*}{z}^0} \overset{*}{T}_z^n = T_z^m \underbrace{I - T_z T_z^*} \overset{*}{T}_z^n \in \mathcal{T}$$

$$\Rightarrow \mathcal{E} \subset \mathcal{T} \Rightarrow \mathcal{F} = < \mathcal{E} > \subset \mathbb{T} \Rightarrow \mathcal{K} = \bar{\mathcal{F}} \subset \mathcal{T}$$

$$\mathcal{C}_n = C^* \frac{s_1 : \cdots : s_n}{s_i^* s_j = {}^i\delta_j : \quad \sum_i s_i s_i^* = 1} \xleftarrow{\text{on}} \mathcal{T}_n = C^* \frac{t_1 \cdots : t_n}{t_i^* t_j = {}^i\delta_j : \quad \sum_i t_i t_i^* < 1} \xleftarrow{\text{in}} \mathcal{K}_n$$

$$\bowtie \mathbb{C}^n = \sum_k^{\mathbb{N}} \overset{k}{\bowtie} \mathbb{C}^n$$

$$\underbrace{\overset{k+1}{\bowtie} \mathbb{C}^n}_{\daleth \bowtie \gimel^1 \bowtie \cdots \bowtie \gimel^k} \xleftarrow[\text{monomet}]{\daleth \bowtie} \underbrace{\overset{k}{\bowtie} \mathbb{C}^n}_{\gimel^1 \bowtie \cdots \bowtie \gimel^k}$$

$$\overbrace{\daleth \bowtie}^{*} \underbrace{\daleth \bowtie} = \daleth \bowtie \daleth \, \imath$$

$$\sum_i \underbrace{\gimel^i \bowtie} \overbrace{\gimel^i \bowtie}^{*} + \gimel^{\bullet} \overset{*}{\gimel}^{\bullet} = \imath$$

$$\gimel^{\bullet} = 1 \in \bowtie^0 \mathbb{C}^n$$

$$\mu \in n^k \Rightarrow \gimel^{\mu} = \gimel^{\mu_1} \bowtie \cdots \bowtie \gimel^{\mu_k} \in \overset{k}{\bowtie} \mathbb{C}^n$$

$$\mathcal{T}_n \supset \mathcal{K}_n$$

$$\text{⅂}^{\bullet}\,\overset{*}{\text{⅂}}{}^{\bullet} = \imath - \sum_i \underbrace{\text{⅂}^i\text{⧖}}\,\underbrace{\text{⅂}^i\text{⧖}}_{*}$$

$$\Rightarrow \text{⅂}^{\mu}\,\overset{*}{\text{⅂}}{}^{\nu} = \underbrace{\text{⅂}^{\mu}\text{⧖}\text{⅂}^{\bullet}}\,\overbrace{\text{⅂}^{\nu}\text{⧖}\text{⅂}^{\bullet}}^{*} = \underbrace{\text{⅂}^{\mu}\text{⧖}}\,\overbrace{\text{⅂}^{\bullet}\text{⅂}^{\bullet}}^{*}\,\overbrace{\text{⅂}^{\mu}\text{⧖}}^{*} = \underbrace{\text{⅂}^{\mu}\text{⧖}}\,\overbrace{\imath - \sum_i \underbrace{\text{⅂}^i\text{⧖}}\underbrace{\text{⅂}^i\text{⧖}}_{*}}\,\overbrace{\text{⅂}^{\mu}\text{⧖}}^{*} \in \mathcal{T}_n$$

$$\Rightarrow \mathcal{E} \subset \mathcal{T} \Rightarrow \mathcal{F} =< \mathcal{E} > \subset \mathbb{T} \Rightarrow \mathcal{K} = \bar{\mathcal{F}} \subset \mathcal{T}$$

$$\overset{k}{\text{⧖}}\,\mathbb{C}^n \xrightarrow[\text{unit}]{\overset{k}{\text{⧖}}\,\text{⅂}} \overset{k}{\text{⧖}}\,\mathbb{C}^n$$

$$\begin{array}{ccc}
\mathcal{K}_n & \xleftarrow{\underbrace{\overset{k+1}{\text{⧖}}\,\text{⅂}} \ltimes \rtimes \underbrace{\overset{k}{\text{⧖}}\,\text{⅂}}_{*}} & \mathcal{K}_n \\
\text{in} \downarrow & & \downarrow \text{in} \\
\mathcal{T}_n & \xleftarrow{\underbrace{\overset{k+1}{\text{⧖}}\,\text{⅂}} \ltimes \rtimes \underbrace{\overset{k}{\text{⧖}}\,\text{⅂}}_{*}} & \mathcal{T}_n \\
\text{on} \downarrow & & \downarrow \text{on} \\
\mathcal{C}_n & \xleftarrow[\underbrace{\overset{k+1}{\text{⧖}}\,\text{⅂}} \ltimes \rtimes \underbrace{\overset{k}{\text{⧖}}\,\text{⅂}}_{*}]{} & \mathcal{C}_n
\end{array}$$

$$\text{⅂} \in {}^{\mathrm{U}}\mathbb{C}^n_n \Rightarrow \underbrace{\overset{k+1}{\text{⧖}}\,\text{⅂}}\,\underbrace{\text{⅂⧖}}\,\overset{*}{\underbrace{\overset{k}{\text{⧖}}\,\text{⅂}}} = \underbrace{\text{⅂⅂}}\text{⧖}$$