$$\mathbb{K}_n^{\triangledown^1} = \frac{\Gamma \sqsubset \mathbb{K}_n}{\dim \Gamma = 1} = \frac{\mathbb{K}\Gamma}{0 \neq \Gamma \in {}^1\mathbb{K}_n}$$

$$\text{cpt } {}^1\mathbb{K}_n^{\cup} \xrightarrow[\text{surj}]{} \mathbb{K}_n^{\triangledown^1} \text{ quo-top cpt}$$

$$\mathbb{K}_n^{\triangledown^1} \supset U_i = \frac{\mathbb{K}\left[\Gamma_1 \quad \cdots \quad \Gamma_n\right]}{\Gamma_i \neq 0}$$

$$\mathbb{K}_n^{\triangledown^1} \supset U_i \xrightarrow{\rightsquigarrow_i} {}^i\mathbb{K}_{n \llcorner i} \in \mathbb{K}\triangle$$

$$\mathbb{K}_n^{\triangledown^1} \supset U_i \xleftarrow{{}^i\leftsquigarrow} {}^i\mathbb{K}_{n \llcorner i}$$

$$\mathbb{K}\left[\Gamma_1 \quad \cdots \quad \Gamma_n\right] \mapsto \begin{bmatrix} \frac{\Gamma_1}{\Gamma_i} & \frac{\hat{\Gamma}_i}{\Gamma_i} & \frac{\Gamma_n}{\Gamma_i} \end{bmatrix}$$

$$\mathbb{K}\left[\Gamma_1 \quad 1 \quad \Gamma_n\right] \leftarrow\!\shortmid \begin{bmatrix} \Gamma_1 & \hat{\Gamma}_i & \Gamma_n \end{bmatrix}$$

$$\mathbb{K}\left[\Gamma_1 \quad \Gamma_i \neq 0 \quad \Gamma_n\right] = \mathbb{K}\begin{bmatrix} \frac{\Gamma_1}{\Gamma_i} & \frac{\Gamma_i}{\Gamma_i} & \frac{\Gamma_n}{\Gamma_i} \end{bmatrix} = \mathbb{K}\begin{bmatrix} \frac{\Gamma_1}{\Gamma_i} & 1 & \frac{\Gamma_n}{\Gamma_i} \end{bmatrix} \Longrightarrow \rightsquigarrow_i \leftsquigarrow^i = I | U_i$$

$$\begin{bmatrix} \Gamma_1 & \hat{\Gamma}_i & \Gamma_n \end{bmatrix} {}^i\leftsquigarrow \rightsquigarrow_i = \left(\mathbb{K}\left[\Gamma_1 \quad 1 \quad \Gamma_n\right]\right) \rightsquigarrow_i = \begin{bmatrix} \frac{\Gamma_1}{1} & \frac{\hat{1}}{1} & \frac{\Gamma_n}{1} \end{bmatrix} = \begin{bmatrix} \Gamma_1 & \hat{\Gamma}_i & \Gamma_n \end{bmatrix} \Longrightarrow {}^i\leftsquigarrow \rightsquigarrow_i = I$$

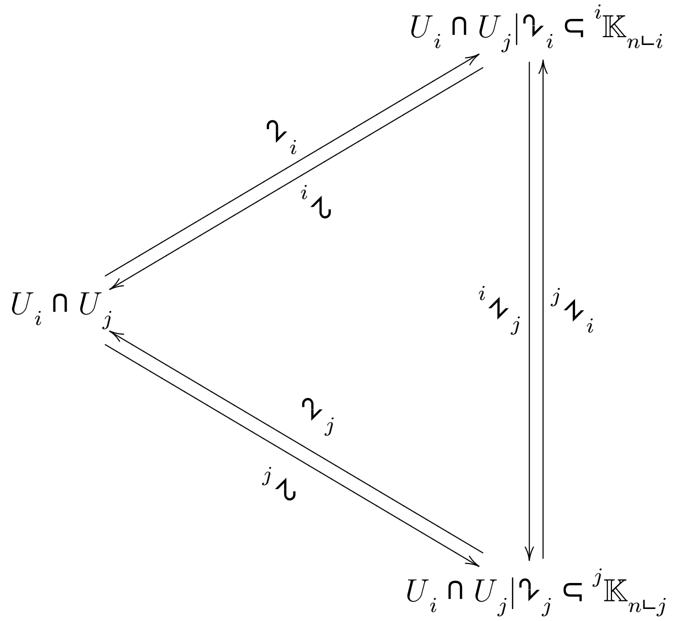
$$\begin{cases} U_i : \phi_i \\ i \in \begin{bmatrix} n \\ 1 \end{bmatrix} \end{cases} \quad \text{Atlas } {}_{\mathbb{K}_n}\triangledown^{1} \in \mathbb{K}\triangle_{\omega}$$

overdeck

$$\mathbb{K}\Gamma \in {}_{\mathbb{K}_n}\triangledown^{1} \Rightarrow \Gamma \neq 0 \Rightarrow \bigvee_{i \in \begin{bmatrix} n \\ 1 \end{bmatrix}} \Gamma_i \neq 0 \Rightarrow \mathbb{K}\Gamma \in U_i$$

overlap $i \neq j \underset{\text{OE}}{\Rightarrow} i < j$

$$U_i \cap U_j = \frac{\mathbb{K}\left[\Gamma_1 \;\cdots\; \Gamma_n\right]}{\Gamma_i \neq 0 \neq \Gamma_j}$$



$$\begin{bmatrix} \Gamma_1 & \hat{\Gamma}_i & \Gamma_j \neq 0 & \Gamma_n \end{bmatrix} \mapsto \begin{bmatrix} \frac{\Gamma_1}{\Gamma_j} & \frac{1}{\Gamma_j} & \frac{\hat{\Gamma}_j}{\Gamma_j} & \frac{\Gamma_n}{\Gamma_j} \end{bmatrix}$$

$$\underbrace{\mathbb{K}\left[\Gamma_1 \;\cdots\; \Gamma_n\right]}\phi_i \; {}^i\nearrow_j = \begin{bmatrix} \frac{\Gamma_1}{\Gamma_i} & \frac{\hat{\Gamma}_i}{\Gamma_i} & \frac{\Gamma_j}{\Gamma_i} & \frac{\Gamma_n}{\Gamma_i} \end{bmatrix} {}^i\nearrow_j = \begin{bmatrix} \frac{\Gamma_1}{\Gamma_i}\frac{\Gamma_i}{\Gamma_j} & \frac{\Gamma_i}{\Gamma_j} & \frac{\hat{\Gamma}_j}{\Gamma_i}\frac{\Gamma_i}{\Gamma_j} & \frac{\Gamma_n}{\Gamma_i}\frac{\Gamma_i}{\Gamma_j} \end{bmatrix} = \begin{bmatrix} \frac{\Gamma_1}{\Gamma_j} & \frac{\Gamma_i}{\Gamma_j} & \hat{1} & \frac{\Gamma_n}{\Gamma_j} \end{bmatrix} = \underbrace{\mathbb{K}\left[\Gamma_1 \;\cdots\; \Gamma_n\right]}$$