$$\mathbb{K}_n{}^{\triangledown^m} = \frac{\Gamma \sqsubset \mathbb{K}_n}{\dim \Gamma = m}$$

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

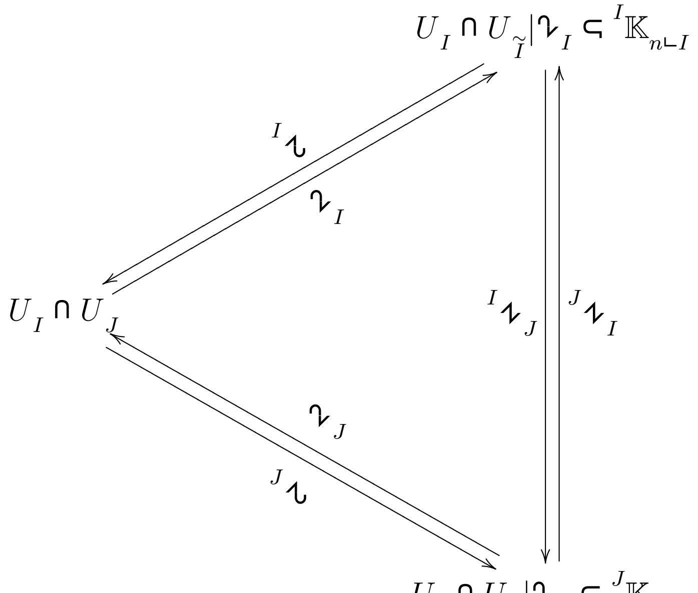
$$\mathbb{K}_n{}^{\triangledown^m} \supset U_I = \frac{\mathbb{K}\left[\Gamma_1 \quad \cdots \quad \Gamma_n\right]}{\Gamma_i \neq 0} \underset{{}^i\backsim}{\overset{\backsim_i}{\rightleftarrows}} {}^I\mathbb{K}_{n \llcorner I} \in \mathbb{K}\triangle \implies \backsim_I \backsim^I = \imath | U_I$$

$$\left[\Gamma_1 \quad \hat{\Gamma}_i \quad \Gamma_n\right] {}^i\backsim \backsim_i = \left(\mathbb{K}\left[\Gamma_1 \quad 1 \quad \Gamma_n\right]\right) \backsim_i = \left[\begin{Bmatrix}\Gamma_1 \\ 1\end{Bmatrix} \quad \frac{\hat{1}}{1} \quad \begin{Bmatrix}\Gamma_n \\ 1\end{Bmatrix}\right] = \left[\Gamma_1 \quad \hat{\Gamma}_i \quad \Gamma_n\right] \implies {}^I\backsim \backsim_I = \imath$$

$$\frac{\left(U_I : \backsim_I\right)}{I \in \begin{bmatrix} n \\ m \end{bmatrix}} \text{ Atlas } \mathbb{K}_n{}^{\triangledown^m} \in \mathbb{K}\triangle_\omega$$

$$\text{overdeck } U_I \text{ of } \mathbb{K}_n{}^{\triangledown^m}$$

overlap



	$I^\sharp \cap J$	$I^\sharp \cap J^\sharp$
$I \cap J^\sharp$	u	v
$I \cap J$	$\vee$	w

$$= \lrcorner \mapsto \lrcorner \; {}^I\backsim_J =$$

	$J^\sharp \cap I$	$J^\sharp \cap I^\sharp$
$J \cap I^\sharp$	u^{-1}	$u^{-1}v$
$J \cap I$	$- \vee u^{-1}$	$w - \vee u^{-1} \urcorner$

$$\natural^{\triangledown_0} \Gamma \underset{\text{Grass}}{\overset{\circ}{=}} \frac{\Gamma \supset \natural \times \Gamma}{\Gamma \sim \natural \times 0} \supset \natural^{\triangledown_0} \Gamma$$

$$\Gamma\,(1{:}\urcorner) \mapsfrom \urcorner$$

$$\underset{\bigcirc}{}^{m}\mathbb{K}_n = \frac{\Gamma \sqsupset \mathbb{K}_{m+n}}{\Gamma \sim \mathbb{K}_m \times 0} \supset {}^{m}\mathbb{K}_n$$

$$\mathbb{K}_m\,(1{:}\urcorner) \mapsfrom \urcorner$$

$$\urcorner\, S_0 = -\urcorner$$

$$S_0 = \operatorname{Int}\, \mho$$

$$\mho = \begin{array}{c|c} 1 & 0 \\ \hline 0 & -1 \end{array}$$