$$\dot{\lrcorner} \in {}^{r}\mathbb{C}$$

$$ {}^{r}_{\cup}\mathbb{C}_{r} \underset{\omega}{\triangleright} {}^{r}\overset{\nu}{\mathbb{C}} \ni \dot{\mathsf{H}}$$

$$\mathsf{H} \bowtie \mathsf{H}' = \int_{dz}^{{}^{r}_{\cup}\mathbb{C}_{r}} {}^{z}\mathsf{H}^{*} \underbrace{1 - z\overset{*}{z}}\, {}^{z}\mathsf{H}' \overbrace{1 - z\overset{*}{z}}$$

$$\dot{\ulcorner}_{1} \bowtie \dot{\ulcorner}_{1} = 1$$

$$ {}^{z}\overbrace{\begin{array}{c|c} A & B \\ \hline C & D \end{array}} \ltimes \mathsf{H} = \overset{-1}{\overbrace{A + zD}}\,\overbrace{B + zD}\,\mathsf{H}\, \overset{-\lambda}{\overbrace{B + zD}}$$

$$ {}^{z}\mathsf{H} = \mathcal{D}_{z} \bowtie \mathsf{H} \text{ kernel}$$

$$ {}^{z}\mathcal{D}_{w} \lrcorner = \underbrace{1 - z\overset{*}{z}} \lrcorner \overbrace{1 - z\overset{*}{z}}$$

$$\underset{\sigma:\bar{\sigma}}{\underline{{}^{r}\mathbb{C}_{r}^{\cup} \times {}^{r}\mathbb{C}_{r}^{\cup}}} = {}^{r}_{\sigma}\underline{\mathbb{C}}_{r}^{\cup} \bowtie {}^{r}_{\sigma}\overset{\sharp}{\underline{\mathbb{C}}}_{r}^{\cup}$$

$$ {}^{r}\mathbb{C}_{r} \triangleright \mathbb{C} = \sum_{\sigma}^{r\vec{\mathbb{N}}} {}^{r}_{\sigma}\underline{\mathbb{C}}_{r}^{\cup} \bowtie {}^{r}_{\sigma}\overset{\sharp}{\underline{\mathbb{C}}}_{r}^{\cup}$$

$$ {}^{r}\mathbb{C}_{r} \triangleright {}^{r}\mathbb{C} \underset{\text{K-branch}}{=} \sum_{\sigma}^{r\vec{\mathbb{N}}} \underbrace{{}^{r}\mathbb{C} \bowtie_{\sigma} {}^{r}\mathbb{C}_{r}^{\cup}}_{= \sum_{i}^{r} \sigma + \varepsilon_{i} {}^{r}\underline{\mathbb{C}}_{r}^{\cup}} \bowtie {}^{r}_{\sigma}\overset{\sharp}{\underline{\mathbb{C}}}_{r}^{\cup} = \sum_{i}^{r} \sum_{\sigma}^{r\vec{\mathbb{N}}} \sigma + \varepsilon_{i} {}^{r}\underline{\mathbb{C}}_{r}^{\cup} \bowtie {}^{r}_{\sigma}\overset{\sharp}{\underline{\mathbb{C}}}_{r}^{\cup}$$

$$ {}^{z}\mathcal{D}_{w} = \sum_{i}^{r} \sum_{\sigma}^{r\vec{\mathbb{N}}} {}^{z}_{i}\mathfrak{f}_{w}^{\sigma}$$