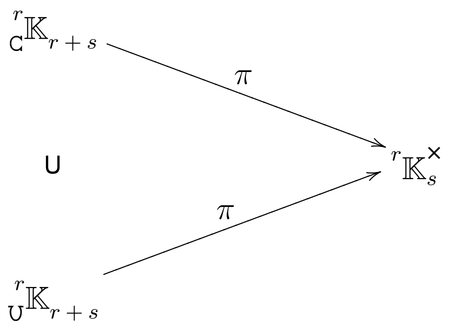


$$: \quad \Gamma \mapsto \mathbb{K}_r \Gamma$$

$$ {}^{r}\mathbb{K}_s^{\times} = {}^{r}_{\mathsf{C}}\mathbb{K}_r \neg {}^{r}_{\mathsf{C}}\mathbb{K}_{r+s} = {}^{r}_{\mathsf{U}}\mathbb{K}_r \neg {}^{r}_{\mathsf{U}}\mathbb{K}_{r+s}$$

$$\mathbb{K}_r \Gamma = \mathbb{K}_r \digamma \Leftrightarrow \bigvee \Gamma \in {}^{r}\mathbb{K}_r^{\mathsf{C}} : \quad \digamma = \Gamma \Gamma$$

$$\Leftarrow : \quad \mathbb{K}_r \digamma = \mathbb{K}_r \overbrace{\Gamma \Gamma} = \overbrace{\mathbb{K}_r \Gamma} \Gamma = \mathbb{K}_r \Gamma$$

$$\Rightarrow : \quad \mathbb{K}_r \Gamma = \mathbb{K}_r \digamma \Rightarrow \bigvee {}^{i}\Gamma_j \in \mathbb{K} : \quad \text{rows } {}^{i}\digamma = {}^{i}\Gamma_j \, {}^{j}\Gamma = {}^{i}\Gamma \, \Gamma : \quad {}^{i}\Gamma \in {}^{1}\mathbb{K}_r$$

$$\Rightarrow \Gamma = \begin{bmatrix} {}^{1}\Gamma \\ {}^{r}\Gamma \end{bmatrix} \in {}^{r}\mathbb{K}_r : \quad \digamma = \Gamma \Gamma : \quad \text{analog } \Gamma = \digamma \digamma$$

$$\underbrace{\Gamma \digamma} \digamma = \Gamma \underbrace{\digamma \digamma} = \Gamma \Gamma = \digamma \underset{\max}{\Rightarrow} \Gamma \digamma = 1_r = \digamma \Gamma \Rightarrow \Gamma \in {}^{r}_{\mathsf{C}}\mathbb{K}_r$$